NAFTA: the Economic Consequences for Mexico and the United States

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Executive Summary

The North American Free Trade Agreement (NAFTA) came into existence on January 1, 1994, establishing a timetable for Canada, Mexico, and the United States to achieve free trade within North America. U.S. proponents of NAFTA portrayed the agreement as a historic opportunity to expand trade and investment opportunities between the United States and Mexico. Opponents of the agreement feared a surge of imports from Mexico that would damage the U.S. manufacturing sector. Presidential candidate Ross Perot warned that a “giant sucking sound” would be heard when jobs were lost in the United States and transferred to Mexico, as U.S. producers abandoned their domestic production facilities.

These two images of the way NAFTA could be expected to impact the U.S. and Mexican economies stand in sharp contrast. Which view was correct? This study assesses the empirical record of changes in trade, investment and production that have occurred during the first six years of NAFTA’s existence, and it finds that neither extreme is a good description of actual events. Though NAFTA has not been an engine of net U.S. job creation, it has created substantial export opportunities for U.S. producers, negating predictions of wholesale relocation of production to Mexico. The changing structure of production in the United States and Mexico bodes well for both countries.

The Empirical Record on Trade

The pessimistic prediction that NAFTA would simply lead to a large one-way flow of imports into the United States from Mexico is not borne out by the empirical record. There has been a major increase in two-way trade between the United States and Mexico. Between 1993 and 1999, U.S. exports to Mexico grew at an annual rate of 13.1 percent, considerably faster than total U.S. exports.¹ From the U.S. perspective, Mexico’s share of total U.S. exports rose from 9.2 percent to 12.5 percent. From the Mexican

¹ The figures for U.S. trade are reported by the U.S. Department of Commerce at http://www.census.gov/foreign-trade/. Figures for Mexican trade are reported by the Secretaria de Fomento Industrial (SECOFI) at http://www.nafiforworks.org.
perspective, imports from the United States rose from 69.3 percent of total imports to 74.1 percent.

The even faster growth in Mexican exports to the United States – the average annual growth rate was 18.6 percent – has meant that the pre-NAFTA U.S. trade surplus with Mexico has moved into deficit, but that outcome is primarily the result of macroeconomic trends, not the NAFTA. The early post-NAFTA experience was dominated by the Mexican peso crisis of 1995, when Mexico’s ability to import fell. Moreover, subsequently strong U.S. growth and an excess of U.S. domestic investment over domestic saving have meant that U.S. trade balances with nearly all countries, not just Mexico, have deteriorated. Once the decline in the overall U.S. trade position is taken into account, bilateral trade with Mexico has moved in favor of the United States.

The closer economic integration that NAFTA is likely to foster appears to have only just begun. Due to growing shares of world trade accounted for by both Mexico and the United States, the fact that they have exported more to each other is not so exceptional. After adjusting for this scale-of-trade effect, measures of the intensity of trade between Mexico and the United States have not risen.

Nevertheless, the rising U.S. share of the Mexican market certainly has concerned other trading partners, such as the European Union. The EU share of Mexican imports fell from 15 percent in 1990 to 12 percent in 1993 and 9 percent in 1999. Such figures led to the concern that NAFTA would not simply create more trade between the United States and Mexico, but instead divert it from other potentially more efficient sources. Although U.S. critics of NAFTA still feel it has been a major mistake, the EU made it a priority to conclude free trade negotiations with Mexico in November 1999.

The question of trade diversion is an important one for economists. Substantial diversion of trade is a cost to consumers and taxpayers in partner countries and producers in non-member countries. It also leads to a misallocation of global resources.

Systematic studies of NAFTA’s effects on trade at an aggregate level suggest that the benefits of trade creation dominate the losses from trade diversion. The majority of the U.S. industries experiencing above-average export growth to Mexico hold a comparative advantage internationally (i.e., capital goods). Likewise, the Mexican industries whose exports to the United States have grown at above-average rates are generally labor-intensive industries (furniture and toys), or industries where production-sharing arrangements have allowed the most labor-intensive operations to be located in Mexico (textiles and apparel, electronics and

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Electrical machinery, and motor vehicles and parts). In many of the industries with rapidly growing exports, Mexico’s exports to the rest of the world are growing just as rapidly, indicating that Mexican production is competitive even in the absence of preferential tariff treatment.

NAFTA rules of origin have influenced trade patterns. Conditions established in textiles and apparel and motor vehicles and parts were intended to favor partner suppliers, and this study demonstrates that effect has occurred. Such diversion of trade to partner producers, however, has not simply created additional costs for partner consumers or taxpayers. Rather, some of those costs are borne by foreign suppliers in the form of lower prices received by textile and apparel producers outside of NAFTA. In the case of the Mexican market for assembled motor vehicles, the initial level of trade from any source was so small that U.S. export growth did not replace more efficient European or Japanese production.

Investment Provisions and Practice

NAFTA was expected to attract investment to Mexico, by creating greater confidence in the predictability of Mexican policy and greater certainty over Mexican access to important export markets. The stock of FDI has risen from 9.2 percent of GDP in 1990 to 12.5 percent in 1997 (UNCTAD 1999), and the role of FDI in financing domestic investment has risen from under 10 percent to greater than 15 percent. Mexico’s share of the world stock of FDI has risen slightly over the decade.

From a U.S. perspective, Mexico has become a more important destination for foreign direct investment, as Mexico’s share of the total stock of U.S. direct investment abroad rose from two percent to three percent. Yet, the United States is now a smaller source of total FDI in the world, and within Mexico, its share of FDI has declined (although it still remains over 60 percent). Nonmembers particularly may find investment in Mexico an attractive, or even necessary, way to gain entry to the North American market, whereas U.S. producers may find exporting from the United States is a preferable way to serve the Mexican market.

Some feared that NAFTA would give U.S. companies a large incentive to close U.S. plants and commence operations in Mexico, but that does not appear to be the dominant response. U.S. investment in Mexico has become less oriented toward manufacturing, with that sector’s share falling from over 70 percent of the stock of investment in Mexico in 1990 to 55 percent in 1998. Instead, U.S. investors have been attracted by opportunities in the finance and banking sectors, which were specifically
opened to firms from partner countries under NAFTA. Direct competition with U.S. workers is much smaller in that sector.

Changing Economic Structures and the Adjustment Process

In both the United States and Mexico, manufacturing accounts for a smaller share of economic activity than in the 1980s. Nevertheless, industrial production has grown in both countries.

The most rapid growth in Mexican manufacturing output has been in machinery (including motor vehicles) and in basic metal production. Economic activity has continued to shift away from the Mexico City area toward the northern border. More recently, production has become further dispersed, as firms seek areas with less congestion and lower wages. Rising wage rates in Mexico appear to have a significant deterrent effect on migration to the United States.

Although U.S. industrial output has risen, manufacturing employment in 1998 was 3 percent less than in 1989, its previous peak. Rising productivity is one of the reasons for this divergence between output and employment. Nevertheless, over the years of NAFTA’s operation, manufacturing employment has risen by four percent from 1993 to 1998.

The distribution of output and employment changes across the twenty, 2-digit U.S. manufacturing industries indicate how these changes have been compounded or mitigated by NAFTA. Rising U.S. exports to Mexico would suggest that NAFTA has been a force for expansion. A large increase in imports from Mexico coinciding with lower domestic output and job losses in an industry would suggest that NAFTA has been partly responsible for adjustment pressures in that sector.

The opportunities created by NAFTA contributed to an expansion of exports to Mexico, which have risen more rapidly than U.S. domestic shipments in 17 of the 20 industries. The U.S. bilateral trade balance has actually improved in the textiles, paper, chemicals, petroleum products, and rubber and plastic products industries, despite the deterioration of the overall U.S. trade balance.

In the petroleum products and the lumber and wood products industries, imports from Mexico have grown more slowly than imports from the rest of the world, a sign that any unique incentives to expand production in Mexico as a result of liberalization under NAFTA are limited.

In nine industries, the initial Mexican share of total imports was less than three percent, the *de minimis* standard applied in antidumping cases
to determine if such imports are a cause of serious injury to the industry. Tobacco products, leather products, industrial machinery, transportation equipment other than motor vehicles, and miscellaneous manufactures fall into this category, as do textiles, paper, chemicals, and rubber and plastic products (industries cited above where the U.S. trade balance improved).

In the food products, furniture, stone, clay and glass products, and primary metals industries, the increase in the Mexican share of total U.S. imports was less than three percentage points. The change in imports from Mexico generally represents less than one half of a percent of U.S. apparent consumption in the industry, too small to pose large-scale adjustment problems.

Of the remaining six industries, employment actually rose in four of them over the 1993-98 period (printing and publishing, fabricated metal products, electrical machinery, and motor vehicles). In the latter three industries, the growth in employment was greater than 10 percent, an indication of the important role played by strong U.S. consumer demand for durable goods.

Employment fell by 2 percent in the production of instruments and related products.

The apparel industry experienced the most severe decline, with employment shrinking 17 percent from 1993-98. That sector has experienced the most intense pressure to adjust. The trend puts in clearer perspective the attempts to cushion dislocations in the textile and apparel sector through strict rules of origin. Apparel workers also are one of the major groups to have received trade adjustment assistance under provisions intended to aid workers whose displacement is attributable to NAFTA. The United States has provided little additional protection — either through safeguard actions or antidumping cases that raise tariffs against partners or nonmembers — for industries heavily impacted by NAFTA.

In many respects, NAFTA does not represent a major discontinuity in Mexican or U.S. policy. Even during the era of import substitution, Mexico established the maquiladora program in 1965, which allowed foreign companies to locate the most labor-intensive steps in their assembly processes in Mexico without having to pay tariffs on imported intermediate goods, as long as the final product was exported. After the debt crisis in 1982, Mexico adopted several measures that opened its economy to greater international trade. In 1986, it agreed to substantial reductions in its external tariffs when it joined the General Agreement on Tariffs and Trade. Mexico was also an active participant during the Uruguay Round negotiations and a founding member of the World Trade Organization. Along that continuum of trade liberalizing policies, NAFTA
may not stand out so sharply as the defining commitment toward a more open economy.

**Conclusions**

NAFTA provisions are still being phased in, and the internal market is not yet characterized by free trade. Implementation has been problematic in some sensitive agricultural commodities and in trucking services. Full rationalization of industrial operations in Mexico has not yet occurred in sectors such as motor vehicles, or in other industries where long-lived capital investments were made to produce for a closed market. The pattern of production and trade in industries that will be affected by Uruguay Round trade liberalization measures, particularly textiles and apparel, is difficult to extrapolate from current figures; Mexican textile output may expand at the expense of U.S. output. A new presidential administration in Mexico, under a new party for the first time in 71 years, may bring many new opportunities, but it also may raise uncertainties over the stability of macroeconomic policy and the administration of various rules and regulations.

Nevertheless, experience-to-date demonstrates that the portions of NAFTA already implemented have contributed to improved economic performance in both Mexico and the United States. From a political standpoint, the United States has been particularly fortunate to introduce NAFTA during a period of remarkable U.S. domestic expansion. The patterns of trade and investment that have resulted represent an improvement in efficiency, in those two countries and the world as a whole.
Chapter 1

Introduction

The North American Free Trade Agreement (NAFTA) was ratified by the U.S. Congress in November 1993 and came into existence in January 1, 1994. It established a timetable for Canada, Mexico, and the United States to achieve free trade within North America. Canada and the United States already had a free trade agreement between them; thus, U.S. proponents of NAFTA primarily foresaw the opportunity to expand trade and investment opportunities between the United States and Mexico and to establish a strong institutional framework to promote the market-opening reforms that Mexico had already initiated. Because U.S.-Mexico bilateral trade was substantially less than would be predicted between two neighbors, NAFTA presented an opportunity to reverse that situation. It also promised gains to both countries from closer integration of their economies, by expanding output and exports of those goods where each was relatively more efficient. The U.S. economy was much larger than the Mexican economy and U.S. trade barriers already were low; therefore, proponents expected the greatest gains in efficiency to accrue to Mexico, as well as the greatest economic costs of adjustment to a new competitive setting. The most optimistic observers foresaw a U.S. opportunity to expand exports to a rapidly growing Mexican market that would require large increases in capital goods, an area of U.S. export strength. Extrapolating from U.S. bilateral trade surpluses of 1992-1994 yielded an especially promising outlook.

Opponents of the agreement were much less sanguine over the scope of adjustment that would be necessary for the U.S. economy. The Canada-United States FTA involved countries with similar income levels, wage rates, legal systems and regulatory structures. Given the large gap in wage rates between the United States and Mexico, opponents feared a surge of imports from Mexico that would damage the U.S. manufacturing sector. Presidential candidate Ross Perot warned that a “giant sucking sound” would be heard when jobs were lost in the United States and transferred to Mexico, as U.S. producers abandoned their domestic production facilities. He claimed that the expansion of trade would occur in one direction only; Mexico would clearly export more to the United States, but U.S. prospects of exporting more to Mexico were poor. For similar reasons, the AFL-CIO
strongly opposed the agreement and used the slogan “No more NAFTAs” to express its vocal opposition to a trade liberalizing agenda at the December 1999 World Trade Organization (WTO) ministerial meeting in Seattle. Given a less developed Mexican regulatory structure to ensure the protection of environmental quality, other U.S. critics feared an exodus of firms from the United States seeking to exploit lax enforcement of environmental standards in Mexico.

These two images of the way NAFTA could be expected to impact the U.S. and Mexican economies stand in sharp contrast. More nuanced academic forecasts of NAFTA’s effects, prepared when the agreement was still being negotiated, also disagreed on how NAFTA would affect the U.S. and Mexican economies. How accurate have such projections turned out to be? This study assesses the empirical record of changes in trade, investment and production that have occurred during the first five years of NAFTA’s existence. It finds that neither extreme is a good description of actual events. NAFTA has not been an engine of net U.S. job creation. Nevertheless, it has created substantial export opportunities for U.S. producers, negating predictions of wholesale relocation of production to Mexico. The changing structure of production in the United States and Mexico bodes well for both countries.

As this study demonstrates, the U.S. and Mexican economies have grown closer together in many ways since the NAFTA went into effect. Mexico has become a relatively more important destination for U.S. exports and investment, and the relative importance of the U.S. market for Mexican exports also has risen. Mexico is now the United States’ second largest trading partner, and the United States has significantly increased its already dominant share of Mexican imports. In the automotive industry, the integration of U.S. and Mexican labor and capital resources has accelerated markedly. NAFTA provisions also have stimulated substantial U.S. investments in Mexican service industries.

As significant as the NAFTA is, it did not occur in a vacuum. Hence, this study considers other developments in both countries that influenced trade and investment. The trend toward greater economic openness in Mexico did not begin with the NAFTA. In fact, market access in Mexico improved markedly in the 1980s, so the foundation for greater economic integration under the NAFTA was well in place by the time the agreement went into effect. The early post-NAFTA experience was dominated by the Mexican peso crisis of 1995, which reduced the value of the Mexican peso and Mexican incomes and imports. The U.S. trade surplus with Mexico consequently turned into a deficit. This deficit has persisted despite Mexico’s subsequent recovery, largely because of strong

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U.S. economic growth and an excess of U.S. domestic investment over domestic saving. The productivity performance of U.S. and Mexican firms has also been changing, and this too has affected trade, output, and employment above and beyond the influence of the NAFTA.

From an economic standpoint, preferential trade agreements such as NAFTA are judged not only by the level of trade creation within the bloc, but also by their impact on trade with nonmembers. The most direct reason for trade diversion to occur is that current trade barriers are reduced for partner countries but maintained against nonmembers. Also, NAFTA established rules of origin that were intended to promote trade among partners and thereby expand member output. Less directly, trade diversion may occur if greater bilateral trade among partners causes domestic producers to seek additional protection against nonmember sources of supply. This study examines the extent of trade diversion resulting from the NAFTA.

Thorough assessments of preferential trade agreements such as the NAFTA must also address the adjustment costs resulting from implementation of the agreement. Popular acceptance of the NAFTA on both sides of the border depends in large measure on how such potential costs are handled. Some U.S. observers are eager to attribute any and all economic dislocations to the NAFTA, but careful analysis requires that other factors, such as sectoral demand and productivity, be taken into account. The NAFTA’s rules of origin have influenced trade patterns, especially in the textile and motor vehicles industries, and delayed anticipated adjustments. Moreover, U.S. investment in Mexico has become less oriented toward manufacturing as U.S. investors have been attracted by opportunities in the finance and banking sectors, sectors where direct competition with U.S. workers is much smaller.

Chapter 2 presents a conceptual framework for examining the economic effects of the NAFTA on trade. It also summarizes ex ante predictions of these effects, at both the aggregate and industry levels. Expectations for agriculture, textiles and apparel, and motor vehicles and parts are examined in greater detail.

The empirical record on trade is assessed from the U.S. and Mexican perspectives in Chapter 3, using aggregate and industry-level data. It examines the specific industries that experienced increased trade and the patterns of specialization that have emerged. Results are compared to the predictions made in Chapter 2. Special attention is paid to trends in the textile and apparel industry and the motor vehicle and parts industry, where rules of origin were intended to affect the patterns of trade that emerged.
Foreign direct investment is the subject of Chapter 4. This chapter traces the recent liberalization of Mexico’s foreign investment regime, prior to and after the implementation of NAFTA. It then presents a conceptual framework for predicting how FDI by members and nonmembers might be affected by NAFTA. The empirical record of FDI in Mexico is then examined and discussed.

The focus of Chapter 5 is the changing patterns of production and employment in both countries. NAFTA’s role in fostering these changes is assessed. The process of adjustment in the sectors affected by NAFTA, and the official mechanisms for dealing with adjustments, are also covered. Concluding remarks are offered in Chapter 6.
Chapter 2

The Projected Effects of NAFTA on Trade

While NAFTA was being negotiated, public debate over its likely consequences often proceeded on two different levels. One level focused on results at a very aggregate level, such as the change in total trade and investment flows and the impact on domestic wages and employment. The views of presidential candidate Ross Perot, who expected a loss in U.S. jobs as a result of U.S. firms relocating production to Mexico, fall in this category. The other level cited interests of individual industries, regions, or communities that expected significant new opportunities, or layoffs and plant closings, to arise from the agreement.

This chapter briefly surveys the projections made before NAFTA came into being to provide a better understanding of the factors that determine NAFTA’s economic consequences and to give a reference point against which the actual empirical record after NAFTA’s implementation can be assessed.

The chapter opens with a conceptual framework for thinking about the formation of preferential trade agreements. A member is likely to benefit from greater trade that allows it to use its resources, expertise, and technology to produce at lower cost than its partners and to import more of the goods where it is a high-cost producer. A preferential trade agreement may create potential costs, however, if greater trade between partners is simply diverted from more efficient sources elsewhere in the world. These costs may be born by one of the partners or by nonmembers. Whether a preferential trade agreement creates net benefits, and who receives those benefits, are empirical questions that cannot be answered without assessing the particular circumstances of the agreement.

The chapter next presents key reasons for the contrasting aggregate projections of NAFTA’s impact on trade, investment and employment. The largest effects in percentage terms occur in Mexico, because it makes the largest reductions in trade barriers and because the Mexican economy is so much smaller than the U.S. economy – only five percent as large, based on gross domestic product.

One of the critical differences between the more pessimistic and the more optimistic projections is the assumed extent to which capital will
be reallocated across countries and whether that capital will shift from one
NAFTA country to another or be attracted from outside the region. The
concerns of Perot can be represented in a model where a large shift of
capital equipment into Mexico from the United States occurs, as U.S.
producers take advantage of cheaper Mexican wages to locate production
there. The negative effect on U.S. production is compounded because
Mexico must run an export surplus to pay U.S. capitalists.

In contrast, optimistic claims rest on Mexico receiving a large
financial inflow raised on world capital markets. Assume Mexico is able to
spend more than it produces and run a sustained current account deficit for
several decades, due to its favorable development prospects. Under those
circumstances, the immediate need to pay U.S. capitalists is not an issue and
most of the additional goods it can afford to buy will come from the United
States. With a growing world capital stock, greater output in Mexico need
not mean less output in the United States.

The chapter then turns to the way these effects are distributed
across industries. At the simplest level, the greatest impacts can be
expected in the sectors that benefit from the highest current levels of
protection. More thorough analyses carefully represent the concessions
actually made and the institutional arrangements that influence their
administration and operation. They also consider how closely foreign
goods substitute for domestic goods, how responsive consumers and
producers are to changes in prices, how expanding industries bid resources
away from contracting industries, and how changing trade and investment
flows affect exchange rates. Such studies generally suggest that U.S.
production and exports of goods and services that require skilled labor will
rise, and U.S. imports of goods that require unskilled labor will rise. Even
if such trade patterns emerge, however, NAFTA may not benefit the
United States or Mexico economically if substantial trade diversion away
from more efficient producers elsewhere in the world arises. Therefore, the
chapter concludes by examining three sectors (agriculture, textiles and
apparel, and motor vehicles and parts) where these allegations often are
raised.

A Conceptual Framework

Regional trade agreements increase economic efficiency by
permitting businesses to locate production where costs are lower. For
example, apparel production moves from the United States to Mexico,
while production of high-technology items, such as microprocessors and
industrial machinery, tends to become more concentrated in the United

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States. Both Mexican and American consumers benefit from the additional trade, because taking advantage of lower production costs reduces the cost of living and raises Mexican and American standards of living. Economists call these the benefits of trade creation, a relationship demonstrated more formally in the appendix.

Regional trade agreements can create inefficiencies, too, because they remove tariffs and other barriers among partners on a preferential basis. This raises the danger, for example, that U.S. imports of toys are diverted from China to Mexico even when toy manufacturers in China have lower production costs than toy makers in Mexico. Providing preferential access for Mexican toys causes a loss in economic efficiency, which economists refer to as a cost of trade diversion.

What determines the amount of trade diversion that occurs? Trade diversion will be greater for a larger gap between the costs of production in China versus Mexico. The United States will no longer import as much from China and collect tariff revenue from those imports. Rather, it will import from Mexico and simply pay a higher price to a partner supplier. Trade diversion also will be greater if the initial amount of trade with the partner is small (that is, the partner is not very competitive in the absence of preferential treatment) and if the partner’s costs of production rise rapidly as its expands output.

Who bears the cost of trade diversion? In the explanation above, the importing country that loses tariff revenue and pays a higher net cost for imports bears the cost. In the case of trade barriers other than tariffs, such as quotas, the outcome can be different. Suppose that nontariff barriers limit the quantity that China can sell in the United States, but let Chinese exporters receive a higher price for what they do sell. After the formation of NAFTA, China likely finds that, even though the quantity it sells remains constant, U.S. importers offer a lower price for that quantity, given the alternative they now have of making unrestricted purchases from Mexico. In that case, the loss from trade diversion is borne by China. Even when it is tariffs that restrict trade, if China is highly dependent on the U.S. market and has few alternative markets in which to sell, it may cut the price charged to U.S. importers when the attractiveness of Mexican goods rises under NAFTA. Again, part of the loss from trade diversion is borne by China.

Because most Mexican imports already come from the United States, trade diversion will be a less serious concern from the Mexican perspective. Because U.S. trade barriers already are low for most products, Mexican producers gain little preferential advantage within NAFTA. Economists also expect longer-run gains in efficiency as economies of scale
are achieved, especially as Mexican production is increasingly oriented to a larger export market. That effect may prove to be quite important in the long run, but it is not explored in detail in this study because the time horizon over which it will emerge is much longer than the currently available empirical record. In general, economists expect the benefits from trade creation to outweigh the losses from trade diversion as a result of NAFTA’s formation. Nevertheless, in some industries with high levels of protection, as in agriculture, or in others where explicit policies were adopted to ensure that members saw the greatest incentives to expand production, such as textiles and motor vehicles, a loss in efficiency may occur.

Predictions at the Aggregate Level

The 1992 U.S. presidential campaign, and Reform Party candidate Perot’s warnings of a giant sucking sound when jobs shifted south to Mexico, highlighted the worry that NAFTA would cost U.S. jobs, especially in the manufacturing sector. That was a logical focus in a year when the U.S. economy was attempting to move out of a recession. Economists typically assess job gains and losses in models where wages in each country remain constant, as when there is a large pool of unemployed workers that keep wages from rising. A net increase in jobs from greater export demand means that more workers will be hired out of that pool, while a decrease in jobs from greater import competition means that the pool of unemployed will become larger. While the existence of a wage gap between Mexico and the United States suggests that Mexico will gain a competitive advantage in labor-intensive industries when trade barriers are removed, most economists find that international capital flows are critical determinants of the size of any employment shifts.

In one such assessment, Hufbauer and Schott predicted that NAFTA would result in a net increase in U.S. jobs of 170,000 (1993,p.14). As those authors noted, such a projection rested on U.S. exports to Mexico exceeding U.S. imports from Mexico. In fact, they assumed that Mexico would be able to attract a sufficiently large capital inflow to run a current account deficit (essentially the difference between imports of goods and services and exports of goods and services) equal to 3 percent of GDP, or roughly $10-15 billion annually, during the 1990s. Under those circumstances, the Mexican economy would spend more than it produced, and the extra production to satisfy Mexican demand would come from other countries. Given the large share of Mexican imports accounted for
by the United States, much of that extra production would likely to come from the United States.

Drawing upon the experience of Korea, Hufbauer and Schott suggested that such a capital inflow could be maintained for the next couple of decades. Given a world capital market in which Mexico could raise funds, greater investment in Mexico need not imply a corresponding decline in investment in the United States. Rather, the primary employment impact in the United States would result from the greater U.S. output necessary to meet the Mexican demand for more capital goods and intermediate inputs. If at some time in the future this flow ceased, and Mexican borrowers began to repay their foreign creditors, the initial increase in demand for U.S. production and U.S. labor would convert into a reduction in demand for U.S. output.

Koechlin and Larudee (1992) suggested an alternative scenario that closely reflected the concerns expressed by Perot. They ruled out the possibility that Mexico could run a current account deficit. U.S. owners of capital would have to decide where to locate their fixed stock of capital, in Mexico or at home. Wages and labor productivity would be an important determinant of this choice. The rapid growth of the maquiladora industry in the border region suggested that, in many sectors, the attraction of lower wages in Mexico would not be offset by lower productivity of Mexican workers. Once there was a clearer legal framework to protect foreign investment in Mexico and to guarantee access to the U.S. market, would that rapid growth extend to other sectors of the economy? A larger capital stock in Mexico would result in greater production in Mexico. If that also implied a smaller capital stock in the United States, then productivity and demand for U.S. workers would decline. Koechlin and Larudee projected that the United States would lose 290,000 to 490,000 industrial jobs, while Mexico would gain 400,000 to 680,000 industrial jobs. That pessimistic projection from the standpoint of U.S. labor assumed that an increase in investment in Mexico necessarily would reduce the capital stock in the United States. Mexican producers would also have to increase their exports or reduce their imports and run a trade surplus to pay U.S. owners for the use of their capital.

The source of any capital inflow into Mexico could have influenced the trade outcome in other ways. If investment were diverted from East Asia, then the impact on U.S. jobs would be positive. Even if Mexican production were destined to serve the U.S. market, it might simply displace Asian production. Compared to Asian production, production in Mexico would be more likely to increase demand for American intermediate inputs and capital equipment. On the other hand, might firms from nonmember
countries find that NAFTA provided an especially attractive way to gain access to the U.S. market? As they built up their productive capacity in Mexico, the United States might account for little of the intermediate inputs or capital equipment bought (Morici 1991).

Another perspective at a very aggregate level comes from applied general equilibrium models. While such models are limited in the number of detailed sectors they can represent, they offer the advantage of providing a consistent way to demonstrate how resources are reallocated within the economy as one sector expands and another contracts. In the NAFTA debate, analysts projected changes in sectoral demands assuming that real wages would remain fixed, and thus they could project how changes in demand would affect jobs created and the unemployment rate. More typically, however, such models are applied to analyze economies without a large pool of unemployed workers, and the effects of changing conditions of international trade determine changes in the real wage rate. The latter situation seems more appropriate to the economy operating at the end of the 1990s than to the conditions that existed during the recession years when NAFTA was being negotiated.

Beyond changes in wages or jobs, however, there are other economy-wide effects that must be treated consistently in such an analysis. These models more systematically consider how changing trade balances must be considered together with capital flows to predict how great an exchange rate change may be necessary. As the exchange rate changes, that will have a differential effect across industries, depending upon the price responsiveness of demand in foreign and domestic markets. Also, as the cost of living in a country changes, that will likely have a further effect on the wage rate. Because applied general equilibrium models must specify what assumptions are made in all of these separate dimensions, it is easier to determine whether differences in initial assumptions drive the differences in predicted outcomes.

Such models yielded substantially different projected effects on the Mexican and U.S. economies, depending upon the features included in them (Brown 1992). In the most basic models, real income was projected to rise in the United States by a fraction of a percent and in Mexico by more than one percent. The larger gains to Mexico reflected its larger initial trade barriers. Reductions in nontariff barriers were much more important than reductions in tariffs. Trade diversion was expected to be small. In the case of the United States, that was true because U.S. trade barriers were generally small at the outset and, thus, Mexico did not gain a great advantage over nonmember competitors. In the case of Mexico, initial trade barriers were higher, but most Mexican imports already came from
the United States. Thus, there was little nonmember trade to be affected. In the KMPG Peat Marwick model (1991), for instance, there was a very slight decline in Mexican exports to the rest of the world, and in U.S. imports from the rest of the world.

Allowing for a large enough capital inflow to keep the return to capital from rising in Mexico implied that an increase in the Mexican capital stock of 7.6 percent would occur in the Peat Marwick model. This inflow would cause a much more pronounced effect in increasing the gains to the Mexican economy to over 6 percent of GDP. The size of that projected increase exceeded any gains that economists separately had attributed to realizing economies of scale in the Mexican economy. However, the KMPG Peat Marwick model assumed that using more capital in Mexico would require that Mexico run a large trade surplus in order to pay dividends to foreign owners of capital. The alternative perspective identified by Hufbauer and Schott, where Mexico would run a trade deficit and the United States a surplus was ignored.

Predictions at the Industry Level

An important additional perspective is provided by looking at the implications of NAFTA across sectors. Industry studies allow greater attention to specific institutional and definitional issues that can only be given cursory treatment in more comprehensive studies. Also, they afford more accurate measurement of the types of initial distortions that exist or the significance of concessions made and the way they are to be phased over time. Weintraub (1992) provided a good summary of many such studies.

The KMPG Peat Marwick model provided considerable sectoral detail, and therefore, its projections are presented here as a basis for comparison with industry studies. Based on barriers that existed in 1988, they predicted that annual increases in Mexican exports to the United States would exceed $200 million in the following industries: hotel and restaurant services, apparel, electrical equipment, electronic components, sugar, household appliances, and motor vehicle parts. Industries where they

\[\text{2} \text{ Models that allow for economies of scale also result in larger gains to Mexico. Increased competition in Mexican markets results in lower profit margins, greater output per firm, and an increase in national efficiency. The rise in national income benefits both capital and labor. When capital inflows of the scale suggested above are incorporated into such models, again they result in a substantially larger increase in Mexican national income.}\]
predicted U.S. exports to Mexico would increase more than $100 million annually were machinery, electrical equipment, electronic components, chemicals, and motor vehicle parts.

Leamer (1993) assessed the prospects for trade under NAFTA from a different perspective, which rested on even longer-run adjustments over one or two decades. NAFTA's greatest benefit would not particularly be the reduction in the trade barriers that existed in 1993, but the constraint that restrictions could not be imposed in the future.

Leamer estimated a gravity model of bilateral trade patterns worldwide as a function of income and distance. He found that distance played a big role in the trade of many products, not just those that are heavy or bulky to transport. And he suggested that Mexico's close proximity to the United States implied that a much larger share of the U.S. market should be supplied by Mexican goods than was currently the case. Thus, he felt that inappropriate Mexican policy had held Mexican producers back from the more normal position they might otherwise have occupied in trade with the United States. He regarded NAFTA as a mechanism to remove the Latin American disadvantage that had operated up until then.

Assuming that NAFTA did eliminate this disadvantage, he predicted that the United States would export more transportation equipment, industrial chemicals, paper products, non-ferrous metals, machinery, and professional instruments to Mexico, and import more apparel, beverages, footwear, and pottery from Mexico. Exactly what policy changes would be necessary in order for Mexico to overcome its historical disadvantage was not clear, however.

A common element in the predictions cited here was that U.S. exports of capital-intensive and skilled-labor-intensive goods would rise, and Mexican exports of unskilled-labor-intensive goods would rise. While some sectors, such as electronics and electrical machinery or motor vehicles and parts, are characterized by two-way trade, much of that trade reflects closer economic integration between the two countries to locate more labor-intensive stages of production in Mexico.

In terms of sensitive industries that required special treatment in the negotiations and that were large enough to have an economic impact on any assessment of the agreement, consider the following three: agriculture, textiles/apparel, and automotive trade. The following discussion of these three sectors is not extensive, but it is intended to highlight particular issues that are important to any judgment of NAFTA's success in promoting more efficient production and trade worldwide. Because of high trade barriers or strict rules of origin applied in these sectors, any concern that
there could be large potential losses from the diversion of trade away from more efficient sources is most likely to be observed in these industries.

Agriculture

Although agricultural trade is not a central focus of this study, it merits some attention because of its political sensitivity on both sides of the border, because of likely spillovers to other markets from adjustment in this sector, and because of the high initial protection afforded many commodities. Within Mexico, protection of domestic corn producers is seen as a critical step in limiting the displacement of unskilled workers who otherwise would flood to Mexican cities or cross the border into the United States (Levy and van Wijnbergen 1994). Thus, liberalization of this sector is to proceed more slowly than in other sectors and to be phased in over fifteen years. 3 Such a policy is justified on economic, as well as political, grounds if the longer transition period allows the Mexican government to take steps that would raise the productivity of those displaced from corn production.

From the U.S. perspective, exposure to Mexican competition in several fruits and vegetables is particularly sensitive. Not only does Mexico benefit from a milder climate and the ability to produce throughout the year, but it also has a labor cost advantage in this labor-intensive sector. Therefore, U.S. negotiators sought a special safeguard to prevent import surges as tariffs were reduced. NAFTA established seasonal quotas for tomatoes, chili peppers, onions, eggplants, squash, and watermelons. Mexico, in turn, applied safeguards to imports of swine and pork products, potatoes, apples, and coffee extracts. Because of these various political constraints, agricultural commodities are less likely to appear among those industries where the most rapid changes in trade patterns occur.

Another problematic agricultural item is sugar and other sweeteners. Because sugar is highly protected in the U.S. market, making that higher price available to Mexican producers would likely result in a major increase in U.S. imports, even though Mexico was a net importer of

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3 NAFTA led to the establishment of a transitional tariff-rate quota, with the initial volume of imports from the United States set at 2.5 million metric tons. That figure was then to be allowed to grow 3 percent annually. Imports above the quota amount were to be subject to a tariff of at least 215 percent, with this over-quota tariff to be reduced by 24 percent during the first six years of the agreement. Similar provisions for a long adjustment period apply in the case of dry bean imports, with the over-quota tariff starting at 139 percent (USDA, 2000).
sugar prior to NAFTA and producers elsewhere in the world are more efficient. For the first seven years of the agreement, imports from Mexico were capped at 25,000 tons, which limits the amount of trade diversion that can occur. High sugar prices in Mexico also make high fructose corn syrup an attractive substitute in soft drinks. Because Mexican adoption of the higher U.S. price regime makes HFCS sales by U.S. producers likely and reduces demand for Mexican sugar, the potential for controversy between the two countries is apparent.

Textiles and Apparel

Because Mexico has an abundance of unskilled labor, economists expect Mexican production of apparel to rise even beyond what has occurred under production sharing agreements in the maquiladora program. Under that arrangement, producers in Mexico can avoid tariffs on imported intermediate inputs as long as their production is exported. For producers using inputs from the United States, the final product faces a U.S. tariff only on the value added in Mexico. Because the average U.S. tariff rate on apparel was 16 percent, reducing that barrier could be expected to increase imports from Mexico. Furthermore, NAFTA eliminates quota restraints on imports from Mexico that are produced from North American inputs, while imports from many competing countries are constrained by quotas. The Peat Marwick study assumed those quotas had an effect equivalent to a tariff of 49 percent, a further indication of the substantial advantage that Mexican producers would gain relative to nonmembers.

While the precise price effect of quota restrictions will vary by year, depending upon changing demand conditions, this sector stands out as one with high trade restrictions compared to other U.S. industries. NAFTA may result in diversion of trade away from more efficient Asian producers toward Mexico. The effect of this trade diversion may increase political support both within Mexico and the United States. Unlike the case of simple tariff restrictions, however, where trade diversion imposes a cost on the importing country that no longer collects as much tariff revenue, in this case the cost of trade diversion may be shifted to nonmembers. The nonmember producers receive a lower price for their quota-constrained exports to the United States, even as the quantity sold remains constant. Also, nonmembers who are not constrained by quotas may see their exports to the United States fall as imports from Mexico become more attractive.

Rules of origin can be expected to have a particularly strong effect in the apparel sector due to a triple transformation requirement in order for products to qualify as a North American product. If the yarn, the fabric and
the apparel product are all produced within North America, the product will move across borders free of quota or tariff restriction. Apparel products made from fabrics that originate outside of North America do not qualify for this treatment and, during a transition period of adjustment, are subject to a separate quota. As a consequence, nonmember exporters of yarn and fabric to Mexico may see their sales decline, too.

Trea and Whalley (1994) projected that gains to Mexico from liberalization in this sector and the reduction of U.S. barriers would be as large as one percent of Mexican GDP. As a share of Mexican output in the textile/apparel sector, the efficiency gain would be 38 percent. Given the small initial amount of U.S.-Mexican trade, Mexican exports would appear to rise by particularly large amounts in percentage terms, over 3,000 percent. With respect to production, Mexican output of textiles was projected to rise by 5 percent and apparel by 115 percent. U.S. apparel production was projected to decline by 5 percent. Although the quantity of nonmember trade would be constrained by quotas and therefore not affected by NAFTA, the decline in price they received would result in a nine percent reduction in the rents earned by nonmembers.

Learner suggested a much more extreme effect, where Mexican access to the U.S. market would result in Mexican producers taking advantage of high U.S. prices to allocate all domestic production to the U.S. market, while relying on nonmember production to meet their own domestic demand. Given sufficient Mexican capacity, the United States would eventually find its protection of this sector had completely eroded, and prices would be driven down to the world price level. Under that scenario, trade with Mexico would rise sharply, and U.S. production would fall dramatically.

**Motor Vehicles and Parts**

Automotive trade is the single largest component of U.S.-Mexican trade in manufactures, and the Mexican market is expected to grow rapidly. Therefore, attention to this sector would be warranted even if it were characterized by average trade barriers. In actual fact, it is characterized by above-average trade and investment restrictions in Mexico and, therefore, represents another significant area where the potential for large changes in trade patterns exists.

Lopez-de-Silanes, Markusen, and Rutherford (1994) used a computable general equilibrium model to make predictions about trade, production and employment in the North American market for automobiles, engines, and parts. They represented initial tariff barriers in
this industry as follows: the Mexican rate on autos was 20 percent, on parts 13 percent, and on engines 10 percent. Companies that produced in Mexico would be able to import in accord with a trade balance requirement. Lopez-de-Silanes et al (p.240) represented this requirement as creating a subsidy to exports from Mexico, because an extra sale abroad would allow those companies the benefit of greater sales in the protected domestic Mexican market. In the case of exports of assembled autos to the United States, the effective subsidy was 7 percent, while the corresponding figure for engines exported to the United States was 10 percent. A domestic content requirement would protect Mexican parts producers and make it more expensive to use foreign parts. Lopez-de-Silanes et al represented this factor as a 2 percent subsidy to users of Mexican parts in Mexican assembly operations.

The study predicted that Mexico would gain considerably in terms of economic efficiency (equal to 10 percent of the value of Mexican auto consumption) as it removed its high trade barriers. Nevertheless, employment in Mexico would fall. The Big Three U.S. producers (GM, Ford, and Daimler-Chrysler) would increase employment in Mexico, particularly in auto assembly, but that would be offset by the decline in production of foreign firms in Mexico. The latter firms would be more dependent on imported inputs that would still face Mexican tariffs and would not qualify as North American content (VW and Nissan). Also, production of engines by both foreign and U.S. firms would fall in Mexico, as U.S. firms rationalized their production plans and imported more capital-intensive inputs into Mexico. Production of parts by U.S. firms would increase but production by foreign firms would decrease.

The United States and Canada were expected to experience small employment gains in all three sectors, a somewhat surprising outcome given autoworker opposition to NAFTA, grounded in the fear that plants would be relocated to Mexico. Because Mexico’s domestic content provisions would no longer apply against U.S. and Canadian parts and engines, which qualified as North American, U.S. output was expected to rise. U.S.-based production of engines by North American firms would rise, while U.S.-based production of engines by foreign firms operating in the United States would fall. For NAFTA members, Mexico would eliminate its high tariffs on cars, which would put nonmembers at a competitive disadvantage. The new North American content rules, in particular, would create incentives that Lopez-de-Silanes et al predicted would cause nonmembers to lose 25 percent of their auto sales and 50 percent of their engine sales. Foreign firms that relied on imported engines and parts would be at a competitive disadvantage in serving the North American market. With respect to
production outside of North America, production by foreign firms would rise while production by North American firms would fall. Although Lopez-de-Silanes et al did not attribute any net cost to foreign firms from this change in production patterns, if such large effects were to materialize, they certainly would provoke European dismay over such diversion of trade and investment.

How close was the actual regime of trade policy changes to the scenario assumed in that study? Mexican tariffs were cut in half immediately and then were to be phased out over ten years. Mexican auto parts producers were protected by a domestic content requirement that would be phased out only gradually over ten years, from 34 percent in 1993 to 29 percent in 1998 and to zero percent after ten years. Any firm wanting to import into Mexico would have to export, but the initial trade balancing requirement that firms export $2 for every $1 imported was cut to $1 of exports for $1 of imports immediately, and was to be gradually eliminated by 2004. The quota on new car imports was eliminated, with trade only subject to the trade balance requirement. The ban on used car and truck imports was to be maintained for fifteen years, and only eliminated after 25 years. In addition to the Mexican restrictions, the requirement that cars have 62.5 percent North American content to be traded freely would have a significant effect on production patterns. NAFTA promised substantial rationalization of motor vehicle production by U.S. firms operating in Mexico, a strategy that would be more warranted by geography than production sharing would be for U.S. firms in other parts of the world.

Recapitulation

Public debate over the consequences of NAFTA focused primarily on the immediate-run impact on jobs. The economic models behind pessimistic claims and optimistic counter-claims alike depended importantly upon the nature of capital flows assumed, which magnified any effects predicted when capital could not move across borders. If Mexico received a net inflow of funds from foreign, non-U.S. sources, which allowed it to import capital goods, NAFTA would contribute to greater demand for U.S. goods. If Mexico experienced a net outflow of funds to the rest of the world, then optimistic projections of greater Mexican imports of capital goods from the United States would not be realized. Low Mexican wages that attracted U.S. firms to relocate production to Mexico would simply reduce U.S. output, productivity, and employment.

Regardless of the scope of capital flows that occurs, NAFTA will have differential effects across industries. U.S. exports to Mexico are likely
to grow in industries that require skilled labor, such as machinery, and U.S. imports from Mexico are likely to grow in industries that require unskilled labor. Because both countries expand consumption and reduce output in sectors where they have a comparative disadvantage, and shift resources to sectors where they have a comparative advantage, they are likely to gain from the agreement. A preferential trade bloc may leave a country worse off, however, if it diverts its source of imports to less efficient partners and away from more efficient nonmembers. In the case of NAFTA, the scope of any trade diversion is reduced, because initial trade barriers in the United States generally are low enough that the preferential access gained by members is not that great. In addition, the United States already accounts for a large share of Mexican imports, a sign that it is competitive even without preferential treatment. Potential exceptions to this generalization arise in apparel and motor vehicles, because of the significant trade barriers that initially existed in the United States (apparel) and Mexico (motor vehicles). New rules of origin designed to promote production by member countries were important factors in the political debate over NAFTA, although they may create additional costs for taxpayers of importing countries or for nonmembers.
Chapter 3

The Empirical Record on Trade

Trade between the United States and Mexico has boomed over the past decade, and Mexico passed Japan as the second most important trade partner of the United States. The already large U.S. share of Mexican trade increased further. Nevertheless, these changes may have been attributable to factors other than NAFTA. For example, what portion of that trade was due to the macroeconomic influence of the longest U.S. economic expansion on record? In analyzing U.S. exports to Mexico, how has the macroeconomic performance of the Mexican economy affected the patterns observed? Congressionally mandated reviews of NAFTA at the end of three years were particularly affected by the 1995 peso crisis and the subsequent decline of Mexican GDP by more than six percent. Has the Mexican recovery since then given a more optimistic picture of the extent to which U.S. exports may rise? Or did Mexico’s resort to higher import surcharges against nonmember countries in 1995 and 1997, as well as dollar depreciation against the yen and the mark, give an overly optimistic reading of the extent to which U.S. firms would gain market share at the expense of others? U.S. market share in Mexico has grown in the post-NAFTA period, but that effect generally moderated between 1996 and 1999, even as bilateral growth rates of exports and imports accelerated.

A related macroeconomic factor mentioned in Chapter 2 was Mexico’s ability to run a current account deficit, an indication of the willingness of foreigners to invest in the country. Recall Hufbauer and Schott’s prediction that Mexico would be able to run a current account deficit as large as three percent of GDP on a sustained basis. That record certainly looked implausible when the deficit fell from over five percent of GDP in 1992, 1993, and 1994 to less than one percent of GDP in 1995 and 1996, in the aftermath of the peso crisis. With subsequent recovery of the Mexican economy and some restoration of investor confidence, the current account deficit rose to 3.9 percent of GDP in 1998. If the latter situation represents a sustainable position, the intermediate-run impacts of NAFTA on demand for U.S. capital goods fueled by Mexican economic expansion would be more nearly reflected in this recent data.

Pessimists over NAFTA’s prospects point to the widening trade gap with Mexico. In 1993 the United States had a bilateral surplus with Mexico, but by 1998 this had become a deficit of $23 billion. Within the
manufacturing sector, the shift was from a surplus of $4 billion to a deficit of $15 billion. Nevertheless, any inferences regarding NAFTA’s influence on production and jobs in the United States cannot be based simply upon whether the U.S. bilateral trade balance with Mexico is positive. Over the 1990s, a particularly important additional factor has been the more rapid increase in U.S. investment than in U.S. saving. As a result of that imbalance, the U.S. current account balance has become increasingly negative, and there has been a capital inflow into the United States as well as into Mexico.

This chapter presents a calculation to control for the overall current account position of the United States. After removing that general macroeconomic influence, it suggests that bilateral Mexican-U.S. trade has been a factor improving U.S. trade performance over the NAFTA years.

There are other more systematic ways of analyzing the empirical record of NAFTA’s aggregate impacts on the United States and Mexico, and this study reviews some of that work. Economists who have estimated empirical models of trade have found suggestive, but inconclusive, evidence that NAFTA has created additional trade rather than diverting it from nonmembers.

In some respects, identifying the effects of NAFTA is more straight-forward at the industry level. The 1997 interim analysis of the U.S. International Trade Commission observed a limited set of industries where NAFTA effects were significant: U.S. exports of grains and oilseeds, raw cotton, textile mill products, leather, and motor vehicles, and U.S. imports of apparel, women’s non-athletic footwear, household appliances, and motor vehicle parts. Many of those industries continue to demonstrate significant effects in the more recent experience examined here. The post-NAFTA record generally appears to be characterized by greater trade in areas of comparative advantage for each country, a result that suggests both countries, and the world as a whole, gain from a more efficient use of resources. The influence of preferential access is apparent in the case of textiles and apparel and motor vehicles. An important portion of any losses from trade diversion in the case of U.S. apparel is likely to be borne by foreign suppliers. The small initial Mexican imports of motor vehicles means that actual trade diversion from more efficient existing sources is necessarily small.
Aggregate Measures

The trade shares reported on the first four rows of Exhibit 3.1 demonstrate the rising importance to Mexico and the United States of their bilateral trade. Aside from 1995, Mexico’s share of U.S. exports has risen steadily over the 1993-1999 period, from 8.9 percent to 12.5 percent. Mexico’s share of U.S. imports has grown even more rapidly over that period, from 6.9 percent to 10.7 percent. From Mexico’s perspective, its reliance on the U.S. market has risen from 82.7 percent to 88.2 percent of all Mexican exports. In the case of Mexican imports, the portion coming from the United States has risen from 69.3 percent to 74.1 percent. These data make it hard to argue that NAFTA harmed U.S. export prospects in Mexico. Rather, U.S. export potential clearly improved.

### Exhibit 3.1

#### U.S.-Mexican Market Shares and Trade Intensity Ratios

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<td>Share of U.S. Imports</td>
<td>6.9</td>
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<tr>
<td>Share of Mexican Exports</td>
<td>82.7</td>
<td>84.9</td>
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<td>Mexican Imports from U.S.,</td>
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<td>Share of Mexican Imports</td>
<td>69.3</td>
<td>69.1</td>
<td>74.3</td>
<td>75.5</td>
<td>74.7</td>
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<td>Mexican Share of World</td>
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<td>Imports</td>
<td>5.33</td>
<td>5.74</td>
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<tr>
<td>Mexican Exports to U.S./</td>
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<tr>
<td>U.S. Share of World Imports</td>
<td>5.22</td>
<td>5.31</td>
<td>5.63</td>
<td>5.63</td>
<td>5.41</td>
<td>5.21</td>
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Sources: Calculated from trade data reported at [http://www.ntaaworks.org](http://www.ntaaworks.org), [http://www.census.gov/foreigntrade/balance/index.html](http://www.census.gov/foreigntrade/balance/index.html) and International Monetary Fund, Direction of Trade Statistics.

A differing interpretation of these data focuses on the more rapid growth of imports from Mexico and the resulting shift from a U.S. bilateral surplus of $1.6 billion to a deficit of $22.8 billion. Some critics equate this trade deficit with a loss of U.S. jobs, without considering how other sources
of demand are affected at the same time. A bilateral deficit is not unique to
U.S. trade with Mexico, however, and cannot be simply attributed to
NAFTA. From 1993 to 1999, the U.S. trade balance with all countries
deteriorated from minus $135 billion to minus $375 billion. Economists
attribute the rise in the U.S. current account deficit to macroeconomic
imbalance that emerged in the United States. Gross private domestic
investment rose from 14.4 percent of GDP to 17.5 percent, while U.S.
saving (public and private) only rose from 13.5 percent of GDP to 14.8
percent (Council of Economic Advisers 2000). Given the lack of domestic
saving, the additional investment was financed by foreigners, who paid for
their acquisition of U.S. assets by exporting more to the United States than
they imported from the United States.

To remove the effect of greater foreign financing of U.S.
investment, suppose that foreigners were not willing to allow U.S. net
indebtedness to the rest of the world to grow. In that case, there would be
less foreign demand for U.S. dollars to acquire U.S. assets, and the
consequent dollar depreciation would result in greater U.S. exports and
fewer U.S. imports. Aquino (1978) suggested the following approximation
to reflect such an adjustment scenario: assume comparable changes in
exports and imports and distribute them proportionally across all
countries. In that case, the bilateral trade balance with Mexico would
appear as:

\[
\text{Adjusted Bilateral Trade} = X_{\text{Mex}} \cdot \frac{0.5 \cdot (X_T + M_T)}{X_T} - M_{\text{Mex}} \cdot \frac{0.5 \cdot (X_T + M_T)}{M_T}.
\]

The Mex subscripts refer to U.S. trade with Mexico, and the T subscripts
refer to total U.S. trade in goods and services. The bracketed term
multiplied by \(X_{\text{Mex}}\) will be greater than one, which indicates that U.S. sales
to Mexico would be greater if the dollar were weak enough to eliminate the
U.S. current account deficit. Correspondingly, the bracketed term
multiplied by \(M_{\text{Mex}}\) will be less than one, which indicates that imports from
Mexico would be smaller. This calculation is not intended to be a precise
one, because surely differences in demand elasticities across products would
affect countries differently. Also, the rise in the dollar value of exports
would likely be greater than the reduction in the dollar value of imports,
because a given foreign currency price would translate into a higher dollar

\[\text{\footnotesize 4 I thank Andrew Szamosszegi for suggesting this approach and providing the data analysis that follows.}\]

\[
-- 28 --
\]
price. Nevertheless, the approximation is useful in providing a rough indication of how the difference between exports and imports with a single country would be affected if the overall current account deficit did not exist. The result from applying this procedure is shown in Exhibit 3.2.

Exhibit 3.2
Adjusted U.S.-Mexican Trade Balance

Note that, after controlling for the overall U.S. deficit, bilateral trade with Mexico deteriorates from 1994 to 1995, a sign of the Mexican peso crisis, but with Mexican recovery, the bilateral balance with Mexico rises significantly and is clearly positive in 1997 through 1999. This exercise demonstrates that simply looking at bilateral trade without any attempt to control for general U.S. macroeconomic conditions, which are determined quite independently from NAFTA-mandated changes in trade policy, gives a misleading picture of the effects of NAFTA.\(^5\)

\(^5\) If similar reasoning were applied to argue that Mexico’s current account position is driven by political events and economic policies other than NAFTA, then a further adjustment to the data in Exhibit 3.1 would be necessary, which would likely result in an even smaller residual NAFTA effect.

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Another interpretation of the data reported in Exhibit 3.1 focuses on the extent to which they demonstrate closer economic integration between the United States and Mexico. Additionally, does greater bilateral trade imply that nonmembers will experience greater difficulty in gaining access to the NAFTA market? Some economists have looked at a slightly different concept to augment trade share comparisons. In addition to noting the high and rising likelihood of Mexican exports being sent to the United States, for example, economists also take into account the rising share of U.S. imports in total world trade. If the U.S. accounts for a larger share of all trade, then the fact that it accounts for a larger share of Mexican trade is not so surprising. The second portion of Exhibit 3.1 reports trade intensity ratios, which indicate, for example, the U.S. share of Mexican exports divided by the U.S. share of imports in world trade. The values of this ratio reported in Exhibit 3.1 are consistently greater than one, which indicate that Mexico and the United States are more likely to trade with each other than with other countries. Such a result is not unexpected, given the important role that transportation costs, common borders and cultural influences, and proximity play in explaining trade patterns.

Of additional interest in the present context is the way the trade intensity index changed over the years after NAFTA came into existence. Again, NAFTA is not the principal cause of strong U.S. growth, rising U.S. investment, or a growing overall trade deficit, which explain the growing U.S. share of world imports. Therefore, the fact that there is no increase in the value of the intensity ratio for Mexican exports to the United States may suggest that NAFTA itself has not accelerated the integration of the two economies. In the case of U.S. exports to Mexico, a similar conclusion holds, because here the intensity ratio declines slightly from 5.33 to 5.03. The ratio is higher in 1995, the most severe period of the peso crisis when Mexican income and imports declined, and U.S. trade with Mexico held up much better than Mexico’s trade with nonmembers. By 1998, however, Mexico’s share of world trade had expanded considerably, perhaps due to financial crises in Asia and Russia. Consequently, rising U.S. trade with Mexico was not so exceptional, and the intensity ratio declined over time. The implication of these intensity ratios is that, in spite of growing trade between Mexico and the United States, the deep integration and

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6 See Frankel (1997, p.22) and the sources cited there for a fuller discussion of the limitations of trade shares in interpreting changing trade patterns and the desirability of controlling for additional factors.
rationalization of production within North America that many predicted has not yet occurred.

Because such comparisons of ratios do not allow explicit consideration of how other factors are changing over the time period, there are definite limits to any claims that can be made regarding changes NAFTA may have caused. A more comprehensive empirical approach that explicitly controls for the importance of other factors is to see how membership in a trade bloc affects trade patterns, as estimated by a gravity model of bilateral trade flows. Four studies summarized here provide empirical indications of the role of NAFTA. Although the studies suggest that NAFTA has had a positive trade creation effect, any conclusions must be stated quite tentatively, because the empirical estimates are so imprecisely estimated that a zero effect is difficult to rule out in most cases.

Frankel (1997) provided little direct evidence on the operation of NAFTA, but he did estimate a model of bilateral trade for countries throughout the world over several different five-year intervals. The model explains trade between two countries as a function of their income, income per capita, distance, a common border and a common language between them. When Frankel included a dummy variable to indicate whether a country was a member of NAFTA, long before such a group existed, he generally found no consistent or significant effect, even as the member countries have become more integrated economically over the 1980s and 1990s. He does find that members of NAFTA are less likely to trade with nonmember countries, after controlling for all the other variables listed above, but this negative effect appears to become weaker over time as the member countries have become more open to all trade.

The U.S. International Trade Commission (1997) reported an estimated aggregate effect on U.S.-Mexican bilateral trade, based on monthly data from 1989 to 1996. Estimates of import and export demand equations controlled for changes in income and two additional factors particularly relevant in the short run: prices and exchange rates. The effect of NAFTA was represented by dummy variables for 1994, 1995 and 1996. The estimates yielded significant exchange rate effects and yearly dummies, which the ITC interpreted as being responsible for an increase in U.S. exports to Mexico of 1.3 percent in 1994, 3.9 percent in 1995, and 2.0 percent in 1996. Corresponding increases in U.S. imports from Mexico were 1.0 percent in 1994, 5.7 percent in 1995 and 6.4 percent in 1996.

Gould (1998) also looked at U.S.-Mexican bilateral trade based on quarterly data, with a single NAFTA dummy variable to represent the years in which the agreement was in effect. His estimates of U.S. exports to Mexico suggested that NAFTA did have a statistically significant, positive
effect. In 1995, for example, U.S. exports to Mexico fell, but after controlling for the fall in Mexican income and the depreciation of the peso, the level of exports was higher than would have been predicted on the basis of past experience. That result was suggested by the intensity ratio analysis above, and it was also consistent with the fact that Mexico raised tariffs applied to nonmembers in 1995. Gould calculated that the cumulative increase in U.S. exports over the first three years of NAFTA’s existence was $21.3 billion above the level they otherwise would have been. With respect to Mexican exports to the United States, which clearly rose, any effect of NAFTA cannot be determined with much precision.

Krueger (1999) provided the most recent gravity model analysis of the way NAFTA has affected U.S.-Mexican trade in the aggregate. She found a positive, but insignificant, NAFTA effect on trade between members, and a significant, negative effect on trade with nonmembers. There does not appear to be a reduction in the importance of this indication of trade diversion over time, such as Frankel reported. Whether this effect is attributable to NAFTA or to other unmeasured events and policy changes that occurred over the years NAFTA has been in existence cannot be distinguished in the gravity model formulation. Therefore, the mixed picture that emerges from these very aggregate measures warrants closer attention to possible industry effects.

Another perspective on trade diversion was provided by the World Trade Organization’s Trade Policy Review of Mexico in 1997. The report noted that Mexico’s bound tariff rate for manufactures was reduced from 50 percent to 35 percent in the Uruguay Round, a benefit to trade from all sources. With respect to the lower tariff rates actually applied, the gap had increased between the simple average most-favored-nation (MFN) rate of 13.2 percent applied to nonmembers and the preferential rate of 4.2 percent faced by NAFTA partners, a source of concern from the perspective of potential trade diversion. In reply, the Mexican government pointed out that the weighted average MFN tariff rate had fallen significantly, from 7.8 percent in 1993 to 2.7 percent in 1997. In addition, the number of duty-free products increased from 414 in 1993 to 1,658 in 1997. In sectors where tariff elimination occurred (primarily intermediate inputs and machinery used in the agricultural, chemical, electrical, electronic, textile, and publishing industries), any preferential benefit of NAFTA to U.S. producers was less significant.

Nevertheless, the WTO report cited the situation in sensitive industries, such as beef, clothing, and footwear, where the tariff rate increased substantially. The 1995 peso crisis led to Mexican tariffs on clothing and shoes rising from 20 percent to 35 percent, and in 1997,
increased tariffs on textiles were adopted (European Commission, 1999). The report also criticized “the special regime for the motor vehicle and parts industry, which has become a major export activity, competing from behind a heavily protected domestic market. More recently, industry-specific schemes have emerged for textiles, clothing and footwear. … The rationale for intervention in, and preferred treatment for, these industries appears weak.” (WTO, 1997)

These statements may reflect concern by the European Union over the reduction in its share of Mexican imports from 15 percent in 1990 to 9 percent in 1996, a figure that still applied in 1999, in contrast to the rising U.S. share of Mexico’s market since NAFTA came into effect. Major EU exports to Mexico are machinery, chemicals, and transportation equipment, and therefore, a special agreement in automobiles was an important part of the free trade agreement that the two parties concluded in November 1999.

### Industry Analysis

The USITC report cited above also provided considerable detail regarding industry-specific effects observed over the first three years of NAFTA’s existence. Analyzing over 200 industries, the USITC judged that a clear NAFTA effect existed in its estimates of export and import demand equations only if dummy variables for the years 1994, 1995, and 1996 all were significant. By this standard, NAFTA caused U.S. exports to Mexico to increase in 13 industries, which represent 9 percent of bilateral trade, and caused imports from Mexico to increase in 16 industries, which represent 15 percent of bilateral trade. As noted earlier, such limited effects may be due to the phased reductions of trade barriers in some industries, and to the small existing barriers in others, especially those where producers already could take advantage of production sharing agreements or special preferences for developing countries.

The following industry groups were identified by the ITC as most directly affected by NAFTA: greater U.S. exports of grains and oilseeds, raw cotton, textile mill products, leather tanning and finishing, and motor vehicles, and greater U.S. imports of apparel, women’s non-athletic

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7 Is this decline necessarily attributable to NAFTA, with EU losses occurring as a result of U.S. gains? If the U.S. share of exports worldwide had grown at the same rate as its share of the Mexican market, then preferential access created by NAFTA would not seem to be the key factor explaining the change in the EU share. In fact, the U.S. share of the Mexican market did grow faster than its share of world exports, a case that substantiates EU concerns.
footwear, home appliances and motor vehicle parts. Given this initial indication of industries where large effects were observed, this present study examines whether that pattern emerges even more strongly in more recent years. Presumably, a longer period of observation would reflect additional liberalization and allow more time for rationalization of North American production to have occurred.

Krueger also presented a more disaggregated analysis to complement her gravity model of total trade. She assessed the extent of potential trade diversion at the 1-digit SITC level by comparing actual trade patterns with those that would have arisen given constant trade shares. She observed that, after 1994, the Mexican share of U.S. and world exports both rose in response to peso depreciation. The most substantial increase in exports occurred in the machinery and transportation equipment sectors, where Mexican exports to the United States were projected to be $46 million greater than would have been the case with constant shares, and its exports to the rest of the world were projected to rise by $6 million.

Krueger also examined 2-digit industries where the Mexican share of U.S. imports rose by at least 3 percentage points. She found that those industries were not particularly ones where a larger tariff gap between Mexican and Asian suppliers had arisen. Rather, a tariff gap in favor of Mexican producers already existed due to production sharing provisions, etc., and the gap did not appear to have widened for most of these industries. Although she did not consider changes in other trade and investment barriers, Krueger concluded that trade diversion that might be attributable to NAFTA had been minimal.

Exhibit 3.3 presents still another perspective on U.S. and Mexican trade, based on U.S. exports reported under the 2-digit harmonized system (HS) industry categories. The table includes all industries where export growth was above average over the 1993-1998 period, with the condition that the industry be large enough to account for $100 million of exports by 1996. All U.S. commodity trade with Mexico nearly doubled between 1993 and 1998, as shown by the ratio of 1.96 reported in the third column of the first line of the exhibit. The industries included in the exhibit grew at a faster rate, as shown by the higher ratios reported. Although only 20 of the 98 HS industries fall in this category, they account for over half of total U.S. exports to Mexico. Large increases in trade occur in many of the industries identified by the USITC in their third year review or projected by the ex ante studies cited in Chapter 2. For some sectors that do not appear in Exhibit 3.3, such as cereals and oilseeds, the initial expansion of U.S. exports to the Mexican market has moderated and the growth rate no longer exceeds the
average for all other exports. Nevertheless, exports of those products to Mexico have grown more rapidly than they have to other markets.

To the extent that such trade expansion occurs in industries where U.S. producers have a comparative advantage, the world gains from a more efficient allocation of resources with trade creation. Does that situation accurately describe the changes in trade that have occurred? Any simple measure intended to show where a country has a comparative advantage will necessarily be imprecise, because information on initial trade shares may not reflect how easily different countries can expand output to meet additional demand. Trade shares also may be distorted by government policy. Nevertheless, one measure economists have used to reflect comparative advantage is a country’s position as a net exporter in an industry (Maskus, 2000). If exports to other countries exceed imports from them, that situation suggests national firms are able to produce more efficiently than foreigners. While not much significance should be attached to small differences in this measure, large differences across industries in this ratio more reasonably allow inferences about comparative advantage.

The final column of Exhibit 3.3 reports this position for the U.S. industries in 1993. To the extent that an industry’s export-import ratio exceeds the value observed for all commodities, 0.73, it demonstrates a comparative advantage.

In the case of U.S. exports to Mexico, most of the fast growing industries are those where the United States appears to have a comparative advantage, although there clearly are exceptions, such as apparel, products of iron and steel, and electrical machinery. Reporting these results for 2-digit HS sectors may hide particular industries where U.S. producers have a comparative advantage. In the case of electrical machinery and electronics, for example, production sharing arrangements have allowed rapid growth in the exportation of more capital or skill-intensive components from the United States. Generally, net export industries are benefitting from NAFTA, as demonstrated by their rapid growth in exports to Mexico. In addition, the fourth and fifth columns of Exhibit 3.3 show that Mexico now accounts for a larger share of U.S. exports in these industries. Hence, greater sales to Mexico are not just the result of greater use of plastics, say, in all countries, but of a particular incentive to increase sales of plastics in the Mexican market.

Of course, there is no guarantee that the industries where the United States holds a comparative advantage are necessarily those where Mexico imposed the most substantial trade barriers or where NAFTA-induced changes in the general business climate in Mexico will lead to an expansion of U.S. sales. General macroeconomic conditions also may affect this comparison. For example, U.S. producers have a comparative advantage in capital equipment that requires skilled workers in its production. Nevertheless, the 1995 peso crisis and economic downturn resulted in Mexican gross domestic investment
falling from 23.2 percent of GDP in 1992 to 19.8 percent in 1995. By 1997, this figure had recovered to 26.4 percent, which helps explain the fact that industrial machinery (HS 84) shows up on the list of rapidly growing exports.

Is such growth in export sales attributable to the implementation of NAFTA? Young and Romero (1994) pointed to Mexican trade barriers in capital goods industries as a reason for slow growth in the economy and suggested that NAFTA’s liberalization in those sectors would contribute to faster economic growth. Has the United States, in particular, benefited from this liberalization? Exhibit 3.4 addresses such possibilities by indicating whether the industries with rapidly growing U.S. exports are also those where the U.S. share of Mexican imports grew substantially.

Exhibit 3.3

U.S. Exports to Mexico

<table>
<thead>
<tr>
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<tr>
<td>All commodities</td>
<td>40,254</td>
<td>1.36</td>
<td>1.96</td>
<td>0.09</td>
<td>0.12</td>
<td>0.73</td>
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<tr>
<td>Edible Vegetables</td>
<td>65</td>
<td>1.88</td>
<td>2.77</td>
<td>0.04</td>
<td>0.10</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Animal/Vegetable Fats</td>
<td>230</td>
<td>1.55</td>
<td>1.99</td>
<td>0.15</td>
<td>0.16</td>
<td>1.39</td>
<td></td>
</tr>
<tr>
<td>Tanning/Dyeing Extracts</td>
<td>168</td>
<td>1.56</td>
<td>2.52</td>
<td>0.08</td>
<td>0.12</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Photographic/Cinematographic Goods</td>
<td>98</td>
<td>1.74</td>
<td>3.04</td>
<td>0.05</td>
<td>0.11</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>Misc. Chemical Products</td>
<td>307</td>
<td>1.61</td>
<td>2.35</td>
<td>0.05</td>
<td>0.08</td>
<td>2.88</td>
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</tr>
<tr>
<td>Plastics And Articles</td>
<td>2,078</td>
<td>1.68</td>
<td>2.39</td>
<td>0.15</td>
<td>0.22</td>
<td>1.46</td>
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<tr>
<td>Rubber And Articles</td>
<td>427</td>
<td>1.67</td>
<td>2.82</td>
<td>0.12</td>
<td>0.20</td>
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<tr>
<td>Raw Hides And Skins</td>
<td>173</td>
<td>1.55</td>
<td>2.19</td>
<td>0.09</td>
<td>0.19</td>
<td>2.19</td>
<td></td>
</tr>
<tr>
<td>Cotton, Yarns, And Fabrics</td>
<td>237</td>
<td>1.96</td>
<td>3.96</td>
<td>0.11</td>
<td>0.24</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>Manmade Filaments, Yarns, Fabric</td>
<td>190</td>
<td>1.70</td>
<td>2.36</td>
<td>0.15</td>
<td>0.22</td>
<td>0.87</td>
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</tr>
<tr>
<td>Manmade Staple Fibers, Yarns, Fabric</td>
<td>74</td>
<td>1.61</td>
<td>2.95</td>
<td>0.07</td>
<td>0.15</td>
<td>0.92</td>
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<tr>
<td>Special Woven Fabrics</td>
<td>73</td>
<td>1.93</td>
<td>2.95</td>
<td>0.19</td>
<td>0.35</td>
<td>1.07</td>
<td></td>
</tr>
<tr>
<td>Apparel And Clothing, Knit</td>
<td>237</td>
<td>2.96</td>
<td>5.17</td>
<td>0.13</td>
<td>0.33</td>
<td>0.16</td>
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</tr>
<tr>
<td>Apparel And Clothing</td>
<td>541</td>
<td>1.74</td>
<td>2.50</td>
<td>0.21</td>
<td>0.29</td>
<td>0.12</td>
<td></td>
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<tr>
<td>Iron/Steel Articles</td>
<td>706</td>
<td>2.40</td>
<td>2.54</td>
<td>0.15</td>
<td>0.21</td>
<td>0.63</td>
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</tr>
<tr>
<td>Aluminum And Articles</td>
<td>475</td>
<td>1.56</td>
<td>2.15</td>
<td>0.15</td>
<td>0.19</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Industrial Machinery</td>
<td>5,679</td>
<td>1.22</td>
<td>1.97</td>
<td>0.07</td>
<td>0.08</td>
<td>0.93</td>
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</tr>
<tr>
<td>Electrical Machinery</td>
<td>8,111</td>
<td>1.59</td>
<td>2.31</td>
<td>0.15</td>
<td>0.17</td>
<td>0.69</td>
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<tr>
<td>Misc. Manufactured Articles</td>
<td>122</td>
<td>1.06</td>
<td>1.98</td>
<td>0.16</td>
<td>0.20</td>
<td>0.43</td>
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<tr>
<td>Special Classification</td>
<td>1,691</td>
<td>1.31</td>
<td>2.00</td>
<td>0.12</td>
<td>0.16</td>
<td>0.77</td>
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<tr>
<td>Total, items shown</td>
<td>21,680</td>
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<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Exhibit 3.4
**Mexican Imports from the United States**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All Commodities</td>
<td>45,624</td>
<td>2.044</td>
<td>0.699</td>
<td>0.818</td>
<td>0.745</td>
</tr>
<tr>
<td>Tanning/Dyeing Extract</td>
<td>234</td>
<td>2.28</td>
<td>0.615</td>
<td>0.693</td>
<td>0.659</td>
</tr>
<tr>
<td>Glues</td>
<td>95</td>
<td>2.11</td>
<td>0.567</td>
<td>0.744</td>
<td>0.690</td>
</tr>
<tr>
<td>Photographic/ Cinematographic Goods</td>
<td>131</td>
<td>2.40</td>
<td>0.528</td>
<td>0.732</td>
<td>0.709</td>
</tr>
<tr>
<td>Misc Chemical Products</td>
<td>400</td>
<td>2.25</td>
<td>0.685</td>
<td>0.726</td>
<td>0.740</td>
</tr>
<tr>
<td>Plastics And Articles</td>
<td>3,310</td>
<td>2.15</td>
<td>0.906</td>
<td>0.934</td>
<td>0.902</td>
</tr>
<tr>
<td>Rubber And Articles</td>
<td>510</td>
<td>2.79</td>
<td>0.667</td>
<td>0.800</td>
<td>0.755</td>
</tr>
<tr>
<td>Raw Hides And Skins</td>
<td>204</td>
<td>2.58</td>
<td>0.793</td>
<td>0.853</td>
<td>0.781</td>
</tr>
<tr>
<td>Leather; Saddlery; Travel Goods, Etc</td>
<td>89</td>
<td>2.73</td>
<td>0.715</td>
<td>0.931</td>
<td>0.733</td>
</tr>
<tr>
<td>Cotton, Yarn and Fabric</td>
<td>349</td>
<td>2.89</td>
<td>0.793</td>
<td>0.881</td>
<td>0.902</td>
</tr>
<tr>
<td>Special Woven Fabrics</td>
<td>156</td>
<td>3.02</td>
<td>0.871</td>
<td>0.963</td>
<td>0.929</td>
</tr>
<tr>
<td>Plastic/Rubber Coated Textile Fabric</td>
<td>138</td>
<td>2.16</td>
<td>0.782</td>
<td>0.810</td>
<td>0.801</td>
</tr>
<tr>
<td>Apparel And Clothing, Knitted</td>
<td>195</td>
<td>7.38</td>
<td>0.646</td>
<td>0.945</td>
<td>0.929</td>
</tr>
<tr>
<td>Apparel &amp; Clothing</td>
<td>626</td>
<td>3.01</td>
<td>0.706</td>
<td>0.945</td>
<td>0.905</td>
</tr>
<tr>
<td>Gold and Jewelry</td>
<td>96</td>
<td>6.05</td>
<td>0.517</td>
<td>0.908</td>
<td>0.920</td>
</tr>
<tr>
<td>Copper And Articles</td>
<td>325</td>
<td>2.71</td>
<td>0.787</td>
<td>0.909</td>
<td>0.723</td>
</tr>
<tr>
<td>Aluminum And Articles</td>
<td>602</td>
<td>2.22</td>
<td>0.803</td>
<td>0.878</td>
<td>0.828</td>
</tr>
<tr>
<td>Misc Base Metal</td>
<td>345</td>
<td>2.22</td>
<td>0.851</td>
<td>0.851</td>
<td>0.811</td>
</tr>
<tr>
<td>Industrial Machinery</td>
<td>5,788</td>
<td>2.15</td>
<td>0.612</td>
<td>0.733</td>
<td>0.653</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>9,518</td>
<td>2.53</td>
<td>0.748</td>
<td>0.891</td>
<td>0.805</td>
</tr>
<tr>
<td>Motor Vehicles And Parts</td>
<td>1,294</td>
<td>6.13</td>
<td>0.676</td>
<td>0.845</td>
<td>0.788</td>
</tr>
<tr>
<td>Total, items shown</td>
<td>24,405</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exhibit 3.4 is based on Mexican statistics reporting imports from the United States. As noted by Kehoe (1995), Mexican trade statistics have substantially differed from partner trade statistics in recording the same set of transactions. Prior to 1993, that difference could often be attributed to the exclusion of maquiladora activity from the reported trade figures, but that source of discrepancy has now been addressed. Nevertheless, the list of industries reported in Exhibit 3.4 differs somewhat from that reported in Exhibit 3.3, even though the criteria for selection are the same. A particularly significant addition is HS 87, the motor vehicle industry, where 1998 imports from the United States are six times their 1993 level.

The more important perspective that Exhibit 3.4 provides, however, is the changing U.S. share of the Mexican market. Substantial increases in the U.S. share of Mexican imports occurred for nearly all industries shown. The increase is particularly large between 1993 and 1996, a year when the U.S. dollar was relatively weak compared to the yen or the mark. Even in 1998, the majority of the industries had experienced a four percentage point increase in their share of the Mexican market. With respect to capital goods, the U.S. share of industrial machinery rose from 61 percent to 65 percent; for electrical machinery (HS 85), the corresponding figures are 75 percent to 80 percent; and for motor vehicles, the U.S. share rose from 68 percent to 79 percent. Thus, the threatened displacement of U.S. capital goods by those from nonmember countries, perhaps due to a rising share of investment controlled by Asian or European firms, has not occurred.

Exhibit 3.5 documents U.S. imports from Mexico, and Exhibit 3.6 shows Mexican exports to the United States. Industries that are common to both exhibits, among those where above-average growth has occurred, are as follows: sugar, beverages, apparel, iron and steel, industrial machinery, motor vehicles and parts, instruments, furniture, and toys. Based on U.S. figures, additional industries with rapid import growth are plastics, paper, printed materials, manmade filaments and fibers, and articles of iron and steel. The Mexican export list includes miscellaneous chemicals, tools, electrical machinery, and aircraft. In both exhibits, imports more than doubled between 1993 and 1998. The increase in the U.S. statistics appears larger (136% versus 117%), and it may more accurately control for sales in the United States alone rather than transshipments elsewhere.
### Exhibit 3.5

**U.S. Imports from Mexico**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>All commodities</td>
<td>40,721</td>
<td>1.82</td>
<td>2.36</td>
<td>0.07</td>
<td>0.11</td>
<td>0.73</td>
</tr>
<tr>
<td>Bread and Pastry</td>
<td>60</td>
<td>2.05</td>
<td>2.54</td>
<td>0.07</td>
<td>0.10</td>
<td>1.09</td>
</tr>
<tr>
<td>Beverages, Spirits And Vinegar</td>
<td>308</td>
<td>1.76</td>
<td>2.83</td>
<td>0.07</td>
<td>0.13</td>
<td>0.24</td>
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<td>Washing and Cleaning Preparations</td>
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<td>0.12</td>
<td>0.18</td>
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<tr>
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<td>0.04</td>
<td>0.06</td>
<td>1.46</td>
</tr>
<tr>
<td>Rubber And Articles</td>
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<td>0.02</td>
<td>0.44</td>
<td>0.57</td>
</tr>
<tr>
<td>Paper And Paperboard</td>
<td>129</td>
<td>2.41</td>
<td>3.41</td>
<td>0.01</td>
<td>0.03</td>
<td>0.72</td>
</tr>
<tr>
<td>Books and Newspapers</td>
<td>55</td>
<td>2.14</td>
<td>2.75</td>
<td>0.03</td>
<td>0.05</td>
<td>1.87</td>
</tr>
<tr>
<td>Mmnnade Filaments, Yarns, Fabrics</td>
<td>56</td>
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<td>2.47</td>
<td>0.04</td>
<td>0.07</td>
<td>0.87</td>
</tr>
<tr>
<td>Mmnnade Staple Fibers, Yarns</td>
<td>42</td>
<td>2.93</td>
<td>2.50</td>
<td>0.04</td>
<td>0.09</td>
<td>0.92</td>
</tr>
<tr>
<td>Apparel And Clothing, Knit</td>
<td>306</td>
<td>4.82</td>
<td>9.27</td>
<td>0.03</td>
<td>0.13</td>
<td>0.16</td>
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<td>Apparel And Clothing</td>
<td>1,024</td>
<td>2.25</td>
<td>3.82</td>
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<td>0.14</td>
<td>0.12</td>
</tr>
<tr>
<td>Gold And Jewelry</td>
<td>238</td>
<td>2.10</td>
<td>2.44</td>
<td>0.02</td>
<td>0.03</td>
<td>0.79</td>
</tr>
<tr>
<td>Iron And Steel</td>
<td>346</td>
<td>3.00</td>
<td>3.19</td>
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<td>0.07</td>
<td>0.39</td>
</tr>
<tr>
<td>Iron Or Steel Articles</td>
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<td>2.47</td>
<td>0.07</td>
<td>0.10</td>
<td>0.63</td>
</tr>
<tr>
<td>Copper And Articles</td>
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<td>0.18</td>
<td>0.68</td>
</tr>
<tr>
<td>Aluminium And Articles</td>
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<td>2.63</td>
<td>0.03</td>
<td>0.04</td>
<td>0.73</td>
</tr>
<tr>
<td>Misc. Base Metal</td>
<td>195</td>
<td>1.85</td>
<td>2.50</td>
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<td>0.13</td>
<td>0.73</td>
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<td>Industrial Machinery</td>
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<td>3.21</td>
<td>0.04</td>
<td>0.08</td>
<td>0.93</td>
</tr>
<tr>
<td>Cargo Containers</td>
<td>72</td>
<td>1.83</td>
<td>4.40</td>
<td>0.10</td>
<td>0.15</td>
<td>0.77</td>
</tr>
<tr>
<td>Motor Vehicles and Parts</td>
<td>6,189</td>
<td>2.30</td>
<td>2.74</td>
<td>0.07</td>
<td>0.14</td>
<td>0.48</td>
</tr>
<tr>
<td>Instruments, Measuring and Medical</td>
<td>1,358</td>
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<td>2.47</td>
<td>0.08</td>
<td>0.12</td>
<td>1.19</td>
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<tr>
<td>Furniture</td>
<td>1,050</td>
<td>1.71</td>
<td>2.59</td>
<td>0.12</td>
<td>0.16</td>
<td>0.43</td>
</tr>
<tr>
<td>Toys and Games</td>
<td>355</td>
<td>2.03</td>
<td>2.40</td>
<td>0.03</td>
<td>0.05</td>
<td>0.23</td>
</tr>
</tbody>
</table>

**Exports/Imports, All US Trade, 1993**

**Total items shown:** 16,909

Exhibit 3.6
Mexican Exports to the United States

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All Commodities</td>
<td>47,085</td>
<td>1.704</td>
<td>2.165</td>
<td>0.827</td>
<td>0.848</td>
<td>0.869</td>
</tr>
<tr>
<td>Sugars And Sugar Confectionery</td>
<td>48</td>
<td>5.043</td>
<td>3.491</td>
<td>0.839</td>
<td>0.593</td>
<td>0.346</td>
</tr>
<tr>
<td>Bread And Pastry</td>
<td>64</td>
<td>1.970</td>
<td>2.359</td>
<td>0.929</td>
<td>0.795</td>
<td>0.747</td>
</tr>
<tr>
<td>Beverages, Spirits And Vinegar</td>
<td>258</td>
<td>1.909</td>
<td>3.125</td>
<td>0.875</td>
<td>0.776</td>
<td>0.820</td>
</tr>
<tr>
<td>Washing And Cleaning Preparations</td>
<td>74</td>
<td>1.637</td>
<td>2.768</td>
<td>0.829</td>
<td>0.760</td>
<td>0.680</td>
</tr>
<tr>
<td>Misc Chemical Products</td>
<td>112</td>
<td>1.445</td>
<td>2.225</td>
<td>0.799</td>
<td>0.721</td>
<td>0.686</td>
</tr>
<tr>
<td>Rubber And Articles</td>
<td>211</td>
<td>1.870</td>
<td>2.349</td>
<td>0.929</td>
<td>0.870</td>
<td>0.849</td>
</tr>
<tr>
<td>Raw Hides And Skins</td>
<td>60</td>
<td>2.490</td>
<td>2.896</td>
<td>0.944</td>
<td>0.767</td>
<td>0.757</td>
</tr>
<tr>
<td>Cotton, Yarns And Fabrics</td>
<td>48</td>
<td>5.830</td>
<td>6.665</td>
<td>0.805</td>
<td>0.722</td>
<td>0.795</td>
</tr>
<tr>
<td>Apparel &amp; Clothing, Knitted</td>
<td>203</td>
<td>6.061</td>
<td>11.296</td>
<td>0.953</td>
<td>0.970</td>
<td>0.944</td>
</tr>
<tr>
<td>Apparel &amp; Clothing</td>
<td>773</td>
<td>2.875</td>
<td>5.046</td>
<td>0.986</td>
<td>0.976</td>
<td>0.983</td>
</tr>
<tr>
<td>Gold And Jewelry</td>
<td>247</td>
<td>2.661</td>
<td>2.788</td>
<td>0.796</td>
<td>0.839</td>
<td>0.747</td>
</tr>
<tr>
<td>Iron And Steel</td>
<td>563</td>
<td>1.576</td>
<td>2.256</td>
<td>0.832</td>
<td>0.500</td>
<td>0.741</td>
</tr>
<tr>
<td>Aluminum And Articles</td>
<td>137</td>
<td>2.356</td>
<td>2.896</td>
<td>0.971</td>
<td>0.909</td>
<td>0.833</td>
</tr>
<tr>
<td>Tools</td>
<td>71</td>
<td>2.377</td>
<td>3.337</td>
<td>0.930</td>
<td>0.804</td>
<td>0.815</td>
</tr>
<tr>
<td>Industrial Machinery</td>
<td>4,410</td>
<td>1.950</td>
<td>2.880</td>
<td>0.870</td>
<td>0.813</td>
<td>0.828</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>13,591</td>
<td>1.689</td>
<td>2.250</td>
<td>0.987</td>
<td>0.964</td>
<td>0.961</td>
</tr>
<tr>
<td>Cargo Containers</td>
<td>76</td>
<td>1.714</td>
<td>4.171</td>
<td>0.984</td>
<td>0.908</td>
<td>0.910</td>
</tr>
<tr>
<td>Motor Vehicles And Parts</td>
<td>6,224</td>
<td>2.247</td>
<td>2.829</td>
<td>0.889</td>
<td>0.850</td>
<td>0.904</td>
</tr>
<tr>
<td>Aircraft, Spacecraft, And Parts</td>
<td>124</td>
<td>1.488</td>
<td>7.380</td>
<td>0.908</td>
<td>0.941</td>
<td>0.979</td>
</tr>
<tr>
<td>Instruments, Measuring And Medical</td>
<td>1,122</td>
<td>1.603</td>
<td>2.774</td>
<td>0.977</td>
<td>0.927</td>
<td>0.931</td>
</tr>
<tr>
<td>Furniture</td>
<td>912</td>
<td>1.743</td>
<td>2.436</td>
<td>0.985</td>
<td>0.962</td>
<td>0.941</td>
</tr>
<tr>
<td>Toys And Games</td>
<td>391</td>
<td>1.910</td>
<td>2.578</td>
<td>0.937</td>
<td>0.852</td>
<td>0.941</td>
</tr>
<tr>
<td>Total, items shown</td>
<td>29,720</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In many cases, growth in imports occurs in sectors where the United States appears to have a comparative disadvantage, a result consistent with a more efficient use of U.S. resources. Imports grew in labor-intensive industries (furniture and toys), and in industries where production sharing arrangements often outsourced the most labor-intensive operations (apparel, textiles, electrical machinery and motor vehicles). The latter industries are those where two-way trade is occurring, with simultaneously rapid growth in U.S. exports and imports. That pattern also holds for rubber and plastic products, iron and steel articles and industrial machinery. Such two-way trade may be a sign of closer economic integration and industry rationalization, with greater specialization in particular items or processes where Mexican producers can achieve economies of scale or benefit from moving down a learning curve.

For all of the industries shown in Exhibit 3.5, the Mexican share of U.S. imports has risen. For most of the industries shown in Exhibit 3.6, however, the share of Mexican exports accounted for by the U.S. market has not grown. Thus, industries where Mexico has been able to expand exports rapidly to the United States are also the industries where Mexico has been able to expand exports just as rapidly to other trading partners. In addition to the potential gains in efficiency mentioned above, such a pattern may reflect the general importance of peso depreciation and a competitive advantage relative to all countries, not just the United States. For that reason, not all of the rise in imports should be attributed to NAFTA.

Because of special NAFTA rules of origin applied in the case of textiles and apparel and motor vehicle and parts, the experience of those industries should not be regarded simply as a continuation of the trends already observed under existing production sharing arrangements. The more complex situations they represent are discussed individually below. The general incentives under production sharing agreements, and the way they will be influenced by NAFTA, are worth summarizing at the outset, however.

As mentioned in Chapter 1, the maquiladora program adopted by Mexico in 1965 allows for imported inputs to be brought into the country duty free if they are used in a product that, in turn, is exported. When those intermediate inputs are imported from the United States, and the assembled product is then exported to the United States, the U.S. tariff is levied only upon the value added in Mexico. Such provisions encourage the location of labor-intensive processes in Mexico to take advantage of the abundance of labor there. In 1996, maquiladoras accounted for 40 percent of Mexican exports and 40 percent of its imports.
Under NAFTA, the program described above will be modified by January 1, 2001. Imported intermediate inputs from NAFTA countries will not face a tariff in Mexico, and assembled products can be sold in the Mexican market under the same terms as they would be sold in the U.S. market. Goods assembled from non-NAFTA inputs will simply bear the burden of the Mexican MFN tariff on those inputs. Of course, if Mexico negotiates other free trade agreements that reduce the tariff rate faced by suppliers outside of NAFTA, the preferential benefit to NAFTA suppliers will decline, unless special North American content rules discourage such substitution. With that background in mind, we turn to specific industries where changes in trade performance seem most attributable to specific policy changes made by NAFTA.

Textiles and Apparel

The textile and apparel sector is characterized by above-average protection both in Mexico and in the United States. Producers within NAFTA will benefit from this substantial tariff differential, although production sharing arrangements that reduce the effective tariff on imported apparel from Mexico already may have created a substantial incentive for production in Mexico.

NAFTA, however, also removed any quantitative restrictions on trade in textile/apparel products of North American origin, a significant issue if sales by many competitors are constrained by quotas. In addition, NAFTA established a strict set of rules of origin, which amount to a 100 percent NAFTA content requirement for many finished products, and Mexico imposed tariff increases on a most-favored-nation basis against nonmembers of NAFTA during crisis conditions in 1995 and 1997. As reported in Exhibits 3.3 to 3.6, trade in these sectors between Mexico and the United States has grown particularly rapidly, in spite of the fact that opportunities for more integrated production already existed under the maquiladora program. In fact, before NAFTA came into being, Mexico’s share of U.S. apparel imports (HS 61 and 62) was less than five percent, a figure lower than Mexico’s share of all U.S. imports. The implementation of NAFTA has caused this share to rise to 13 percent, definitely greater than Mexico’s share of all U.S. imports.

Is such growth also a sign of trade diversion away from more efficient sources? *Ex ante* analyses certainly warned of this effect, suggesting that more efficient Asian producers would see substantial declines in their share of the North American market (Noland, 1995). How should the relative efficiency of production within NAFTA versus other
countries be assessed, though? By the standard used above, whether the sector is a net exporter or importer, 1993 trade patterns suggest that the United States has a comparative advantage in textiles and a comparative disadvantage in apparel, while Mexico has a comparative disadvantage in textiles and a comparative advantage in apparel. Those relationships are shown in the first two columns of Exhibit 3.7, which is based on the ratio of exports to imports in the given sector compared to the ratio of exports to imports for the country’s total trade.

Another common measure of comparative advantage, used in Yeats’ (1998) analysis of Mercosur trade, gives the opposite conclusion. It calculates exports of textiles as a share of total exports for Mexico, and textile exports by all countries as a share of total world exports. If the ratio of those two measures is less than one, it indicates that Mexico has a comparative disadvantage in textiles when considered relative to other producers worldwide. The corresponding values for the United States and Mexico in both the textile and apparel sectors are reported in the final two columns of Exhibit 3.7, and they indicate that neither country had a comparative advantage in either sector prior to NAFTA.

Exhibit 3.7
Measures of Comparative Advantage, 1993

<table>
<thead>
<tr>
<th>Sector</th>
<th>United States</th>
<th>Mexico</th>
<th>United States</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textiles</td>
<td>1.35</td>
<td>0.4</td>
<td>0.38</td>
<td>0.51</td>
</tr>
<tr>
<td>Apparel</td>
<td>0.21</td>
<td>1.26</td>
<td>0.28</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Sources: Calculated from OECD electronic publication, "International Trade by Commodities: Harmonized System 1988-1995."

If exports expand rapidly in an industry that has a comparative disadvantage, that outcome indicates that trade diversion occurs. Is that inference appropriate in the case of Mexican apparel exports to the United States? Applying the label of comparative disadvantage based on 1993 trade patterns does not allow for changes in efficiency that may be achieved. Membership in NAFTA and concessions made in the Uruguay Round, as well as numerous domestic economic policy changes, may remove many of the impediments to Mexican production and exports that previously existed. Also, for reasons unrelated to NAFTA, changes in
technology may alter the comparative advantage of different producers. For example, the Department of Commerce (1999) observed that textile production has become increasingly capital-intensive, a possible reason for growing U.S. exports in this industry at the expense of China. Any Chinese cost advantage in terms of unskilled labor wages is much more likely offset by U.S. advantages from a lower cost of capital and closer proximity to apparel end users.

Therefore, without placing any judgment on the efficiency implications of these changing trade patterns, consider in more detail the way textile/apparel trade has been affected. A study by James and Umemoto (1999) assessed the position of Mexico relative to East Asian producers of textiles, apparel, footwear and electrical machinery. From 1993-1996, they noted a 12 percent decrease in Mexico’s imports of textiles from East Asia, while, at the same time, imports from the United States rose by 9 percent. As a more general measure of changing competitive positions in the North American market, they noted that, from 1989 to 1993, NAFTA countries’ share of Mexican imports rose from 61 percent to 74 percent, while, from 1993 to 1996, their share rose to 82 percent. At the same time, the East Asian share fell from 19 percent to 16 percent and then to 9 percent. Some of this decline may be explained by the reduced competitiveness of state-owned enterprises in China (Department of Commerce, 1999), but the rules of origin that require NAFTA-sourced inputs in order to qualify for free trade within the North American market undoubtedly play a significant role in promoting greater usage of textiles from NAFTA producers, too.

In the case of apparel, Mexico’s imports initially were accounted for largely by its NAFTA partners, and that dominant share rose from 64 percent in 1989 to 74 percent in 1993 and to 93 percent in 1996, while imports from East Asia fell from 18 percent to 14 percent to less than 3 percent. From 1993 to 1996, East Asian exports fell 74 percent, while U.S. exports rose by 32 percent. As James and Umemoto noted, Canada had become a bigger supplier of apparel in the Mexican market than China, Indonesia, and Thailand. This pattern does not exhibit an increase in Mexican imports from Asia to meet its domestic market demands while its own industry served the more protected and profitable U.S. market, a more extreme possibility suggested by Learner.

By way of contrast, in the footwear sector, another very labor-intensive industry, Mexican imports from all sources fell. The share from NAFTA partners fell from 36 percent to 16 percent, however, while the share from East Asia rose from 48 percent to 67 percent. Thus, the role of trade diversion from discriminatory trade liberalization seems much more

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apparent in textiles and apparel than in other sectors where government intervention has been less comprehensive.

In the case of U.S. imports, the jump in NAFTA partners’ share of total textile imports was particularly large between 1993 and 1996, from 14 percent to 21 percent. The share of imports from East Asia fell from 33 percent to 30 percent, because they only grew at an annual rate of 2.6 percent. U.S. apparel trade is even more dependent upon East Asian sources, and that share fell from 59 percent in 1993 to 48 percent in 1996, due to a slight decline in imports. At the same time, a strong expansion of the import share of NAFTA partners occurred, from 6 percent to 12 percent of the market, with imports from Mexico growing at a 40 percent annual rate. By way of contrast, the East Asian share of U.S. footwear imports remained stable after NAFTA’s formation, because Mexican producers benefited from a smaller tariff advantage, and no quantitative restrictions limited sales.

The extent to which these figures represent trade diversion cannot be stated very precisely, because over this same time period other factors may have changed the relative competitiveness of NAFTA producers and those in East Asia. James and Umemoto calculated that, if trade shares had remained constant, then East Asian textile/apparel sales to NAFTA countries would have been $9.5 billion greater in 1996. They suggested that this size of shift away from East Asian producers would create an additional $1 billion cost to apparel consumers.

As demonstrated in the appendix, reduced demand for goods that are constrained by a quota, as in the case of imports from many East Asian producers, will result in a reduction in the tariff-equivalent premium received by foreign producers. In that case, the cost of trade diversion is not borne by consumers in the form of higher prices, or by governments in the form of less tariff revenue collected, but rather by the exporting country. What has recent experience been? Exhibit 3.8 shows that 1996, the final year of James and Umemoto’s study, was not unusually unfavorable to East Asian producers. Rather, sales by East Asian producers have continued to stagnate, while there has been substantial growth in imports from NAFTA partners and from the Caribbean Basin Initiative (CBI) countries. The CBI countries do not appear to have suffered from trade diversion to Mexico, one of the fears at the time of NAFTA’s adoption. Although imports from CBI countries were not constrained by quotas, the production sharing arrangements under which they produced still required those countries to pay the U.S. tariff on the value that they added in apparel production. Critics had warned that such countries would be turned into havens for drug running and other illegal activity as
apparel production fell. The strong growth in imports from the CBI countries suggests that they remained an attractive source compared to quota-constrained producers. Legislation adopted in May 2000 grants these countries treatment comparable to NAFTA partners.

**Exhibit 3.8**

**Major Sources of U.S. Apparel Imports**


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8 Recent analysis by the USITC (1999) suggested that the tariff equivalent effect of quotas on apparel imports had fallen to six percent. Compared to the large gap assumed in the Peat-Marwick model cited earlier, such a small margin suggests that quota-constrained producers generally should not expect big increases in sales as trade liberalization proceeds under Uruguay Round agreements.
Both CBI and NAFTA production of apparel contributes to the growth in U.S. textile exports. It also results in less demand for apparel from East Asian suppliers. Exhibit 3.9 suggests the extent to which this declining demand left the volume of sales unaffected and the foreign producer simply received a lower price for the same quantity of imports, compared to the situation where the quantity of imports fell. When quotas continue to be largely filled, there is little change in import quantity, which is the case where more of the burden is borne by the foreign country. When quotas are left unfilled, presumably the producer has found more attractive markets or uses for inputs elsewhere. In the case of Taiwan and Korea, that latter adjustment seems more likely, while in the case of China, the former result applies.

Exhibit 3.9
Textile Apparel Import Quotas for China & Korea, 1997-1999

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>Group IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1997</td>
<td>85.2%</td>
<td>95.2%</td>
<td>94.8%</td>
<td>90.2%</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>81.4%</td>
<td>92.3%</td>
<td>93.5%</td>
<td>86.9%</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>83.5%</td>
<td>95.8%</td>
<td>89.7%</td>
<td>95.4%</td>
</tr>
<tr>
<td>Korea</td>
<td>1997</td>
<td>91.8%</td>
<td>62.8%</td>
<td>9.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>91.4%</td>
<td>83.6%</td>
<td>14.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>94.5%</td>
<td>81.5%</td>
<td>21.3%</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>1997</td>
<td>95.1%</td>
<td>73.2%</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>87.1%</td>
<td>77.5%</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>91.0%</td>
<td>78.6%</td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1997</td>
<td>48.1%</td>
<td>72.4%</td>
<td>33.7%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>60.8%</td>
<td>80.8%</td>
<td>52.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>66.8%</td>
<td>80.3%</td>
<td>59.8%</td>
<td></td>
</tr>
</tbody>
</table>

Group I - Most yarn, fabric and garments  
Group II - Hosiery, brassieres, down-filled coats  
Group III - Special fabrics and man-made materials  
Group IV - Silk hosiery, underwear, knit blouses  
Source: Data taken from U.S. Customs web site:  

In summary, greater imports from NAFTA and CBI countries reduce the demand for imports from China and thereby reduce the price received by Chinese exporters. U.S. prices also decline, and U.S. output falls, a result that creates more trade. Indeed, apparel output has fallen in
the United States, particularly in 1997 and 1998. Textile production has grown slightly since 1993. The adjustment issues raised domestically will be discussed in Chapter 5.

Motor Vehicles and Parts

In its five-year review of the effects of NAFTA on automotive trade, the Department of Commerce (1999) observed that bilateral trade had increased sharply, from $18.6 billion in 1993 to $39.5 billion in 1998. Over that time period, the auto trade deficit with Mexico rose from $3.6 billion to $15.8 billion, in part a reflection of the strong growth in sales in the U.S. market. With respect to Mexico's position within the U.S. market, Exhibit 3.5 reveals that Mexico's share of U.S. motor vehicle and parts imports (HS 87) rose from 7 percent to 14 percent between 1993 and 1998. That rise in market share suggests that producers in Mexico were gaining at the expense of countries outside of NAFTA. This marked effect is consistent with the International Trade Commission's three-year review, which identified Mexican motor vehicle parts exports to the United States as one of the sectors affected by NAFTA.

The Department of Commerce noted, however, that the open U.S. import market means imports from Mexico could have risen even in the absence of NAFTA. Perhaps that characterization understates the importance of NAFTA in encouraging North American producers to view location in Mexico as more viable and secure than it would have been in the absence of an agreement. Also, some of the growth in Mexican exports may be attributed to the fact that Mexican trade balance requirements imposed on firms that produce in Mexico have been phased out only gradually, causing firms to continue to export in order to serve the protected Mexican market.

Nevertheless, Mexican exports to other destinations have grown. Between 1993 and 1996, exports to the United States as a share of total exports declined, from 89 percent to 85 percent. Strong U.S. demand was particularly important in this sector and resulted in the U.S. share rising to 90 percent in 1998. While Mexican parts producers have been successful in expanding sales at a rapid rate beyond the U.S. market, in the relative terms reported in Exhibit 3.6, the effect does not appear so clearly.

NAFTA did create the opportunity for U.S. producers and products to compete with fewer restrictions in the Mexican market. As a general indication of the benefit from that change, the U.S. share of Mexican imports of vehicles and parts (HS 87) rose from 68 percent in 1993 and was 79 percent in 1998. The Department of Commerce's
broader definition of the sector shows that U.S. vehicle exports to Mexico, for the same period, rose from a miniscule amount to reach $2.4 billion in 1998, while parts exports grew from $7.3 billion to $9.5 billion. This rate of increase is smaller than the overall rate of increase in U.S. exports to Mexico, according to U.S. figures, but it appears to be larger than average based on Mexican figures.

The effect of NAFTA concessions on trade in assembled vehicles is particularly significant, because foreign firms producing in Mexico now have the option of concentrating their production in fewer product lines and complementing that production with imports from outside of Mexico. That response clearly has occurred. With respect to trade in parts, the \textit{ex ante} predictions cited in Chapter 2 suggested that U.S. producers would benefit as the Mexican domestic content requirement was phased out and NAFTA rules of origin were phased in. The NAFTA content requirement rose from 50 percent to 56 percent in 1998 and will rise to 62.5 percent in 2002; the Mexican content requirement was still 29 percent in 1998 and will fall to zero in 2004 (Hufbauer and Schott, 1993). Although those factors may help explain why a substantial shift toward U.S.-based parts production has not occurred, strong demand in the U.S. market also reduces the amount of U.S. production destined for export. Among parts categories, U.S. imports of engines have exceeded U.S. exports of engines, a contrast to the predictions of Lopez-de-Silanes.

Is this a sector of comparative advantage in trade for Mexico or for the United States? Based on the ratio of exports to imports in the sector, or to the share of auto exports in total trade, the United States does not appear to have a comparative advantage in producing vehicles in the United States and shipping them into European or Asian markets. The Commerce Department pointed to the limited appeal to most foreign customers of large, well-equipped, fuel-using models produced in the United States. The proximity of the Mexican market makes it much more accessible to U.S. producers, however, and U.S. adoption of Japanese lean-production techniques is seen by some observers as making U.S.-based production increasingly attractive, at least to serve the home market (Womack et al., 1990). The high degree of protection of the Mexican market would seem to suggest a lack of competitiveness, although Mexico’s position clearly has changed as new investment has shifted away from the small-scale production lines established to serve a limited local market in the days of import substitution.

Producers from non-NAFTA countries, not surprisingly, are interested in being able to serve the Mexican market, one that is predicted to grow rapidly over the coming decades. The rising share of U.S. sales in
the Mexican market and the declining share for the rest of the world is one of the reasons that the EU negotiated a free trade agreement with Mexico, to overcome a U.S. head start of five years. North American content rules, however, will influence the strategy these producers pursue. For example, VW’s only North American production facility is in Puebla, Mexico, and its output is largely exported to the United States and Canada; only 26 percent of its output was sold in Mexico in 1997. VW will come under greater pressure to use U.S. and Canadian parts, rather than import them from Germany, if it is to meet the higher NAFTA content rules and export duty-free to the U.S. market; however, low U.S. tariffs on auto imports makes this aspect of the rules of origin less onerous. Nissan shifted its production of the Sentra to Mexico from the United States, and looks upon its Mexican location as the way to serve the small car market throughout the Americas. The fact that Mexico has preferential access to markets in Chile and several Central American countries demonstrates the attraction of this policy, which will be reinforced if negotiations begun in early 2000 between Mexico and Brazil and Argentina are successful. Nevertheless, Nissan still was operating at 70 percent of capacity in 2000, and hoped to produce Renault models as well, in order to utilize its facilities better.9

Because access to the Mexican market is still in a transition period, and strong U.S. growth provides an incentive to produce for the U.S. market, the long-run effects of NAFTA on bilateral motor vehicle trade cannot be inferred very precisely from current experience. When NAFTA was being negotiated, the Mexican domestic parts industry was perceived as inefficient, and Mexican negotiators sought phased reductions in the protection provided by domestic content requirements and foreign ownership limitations (Johnson, 1993). The rapid expansion of Mexican parts producers suggests that major cost reductions were achieved even before a 1999 change in regulations to confer national treatment on wholly owned foreign producers of parts. Examples of this success by locally owned producers are Cifunsa, in steel and aluminum mono blocks; San Luis Rassini, in suspensions and brakes; Unik, in manual transmissions; and Nemak, in aluminum cylinder heads.10 These producers seem well suited to survive the elimination of domestic content requirements in 2004.

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exports of assembled cars to Mexico will continue to grow but are unlikely to play a large role in the small car portion of the market, which will expand most rapidly in the future. Choices made by firms that do not currently produce in Mexico will also influence U.S. prospects in the Mexican market, but U.S. producers clearly have benefited from their head start in this market.

Recapitulation

Since the implementation of NAFTA, Mexican-U.S. trade has increased rapidly, as has the U.S. bilateral trade deficit with Mexico. In neither case is NAFTA the primary cause of those changes. The value of bilateral trade has increased substantially, but the greater role of U.S. and Mexican trade in the world as a whole means that this growth is not so surprising. The United States and Mexico each account for a larger share of world production, income and imports. Because NAFTA can be expected to lead to closer economic integration of the two economies, it eventually will have an even larger effect on the volume of bilateral trade. With respect to the bilateral trade balance, it is important first to separate the role played by the overall U.S. trade deficit. Because the United States has increasingly relied on foreigners to finance U.S. investment, it has run a large current account deficit and, consequently, bilateral deficits with most countries of the world. The shortfall in U.S. saving has little to do with NAFTA, and removing the effect of that macroeconomic trend even suggests that U.S.-Mexican trade over the years of NAFTA’s existence has contributed toward a U.S. surplus.

At an industry level, the expansion of U.S. exports is in areas where U.S. industries have a comparative advantage internationally, especially capital goods and intermediate inputs that are skill-and capital-intensive. U.S. imports from Mexico have grown most rapidly in labor-intensive industries and in industries where assembly operations, and the production of parts that require intensive labor, can be located in Mexico. In most of those industries, Mexican exports to the rest of the world have grown just as rapidly, a sign of greater efficiency within Mexico and of the influence of peso depreciation. NAFTA has been one of several influences on these trade patterns, which have promoted efficiency between partner countries and in the world as a whole.

Specific NAFTA rules of origin are particularly relevant in explaining rising U.S. textile exports to Mexico and apparel imports from Mexico, and NAFTA provisions have allowed the expansion of U.S. motor vehicle exports to Mexico. In the case of U.S. apparel imports, the
potential costs of trade diversion are borne, in part, by foreign suppliers through a reduction in the price they receive. In the case of the Mexican motor vehicle market, the small initial amount of trade allowed suggests that the observed growth in imports represents trade creation that benefits Mexican consumers; liberalization with respect to all sources of supply could have allowed an even larger benefit. While those arrangements were important concessions for gaining the political acceptance of NAFTA, because they ensured that more of any output expansion would be made by producers of member countries, they have reduced the overall benefits of NAFTA’s creation.

Critics that still regard NAFTA as a poor choice for the United States ignore the response of other countries that have seen their market share fall in Mexico under the implementation of NAFTA. To those countries, the U.S. advantage in the Mexican market is a competitive fact, not just a theoretical possibility and, therefore, they have vigorously negotiated to gain that same favored position for their producers. While that development eventually may moderate U.S. export growth in the Mexican market, U.S. firms clearly benefit from being market leaders, rather than followers trying to catch up.
Chapter 4

Investment Provisions and Practice

As suggested in Chapter 2, changes in the pattern of production and trade between Mexico and the United States will be rather limited in the absence of capital flows that allow a more rapid shift in economic structure and the relocation of production facilities. The purpose of this chapter is to examine the nature of capital flows fostered by NAFTA, focusing most attention on the NAFTA provisions that affect foreign direct investment (FDI) and the consequent response of companies to those changes. Although the inflow of FDI from 1993 to 1998 has not risen as rapidly as exports from Mexico (52 percent versus 140 percent), it has grown as a share of Mexican investment, output and employment.

In the discussion of capital flows and spending on capital goods in Chapter 3, attention focused on the Mexican current account deficit as an indication of the shift of resources into the Mexican economy. Foreign investment allowed Mexican expenditures to exceed Mexican production. One form of such capital flows is portfolio capital, where the foreign investor has no direct management control over the use of the capital provided. Bank deposits, bonds, or shares of stock are examples of financial instruments that foreigners may acquire when increasing their holdings of portfolio capital in a country. Traditionally, Latin American countries wary of economic and political dependence on the United States encouraged this type of inflow in preference to foreign direct investment, where management control passed to foreigners. Even after Mexico’s 1985 policy of economic liberalization was adopted, restrictions on foreign direct investment were modified only gradually. Less stringent regulations on FDI were announced in 1989, and a new law governing foreign investment was passed in 1993. Both undoubtedly contributed to larger inflows of FDI. Nevertheless, the growth of Mexican financial markets led to a more substantial increase in portfolio investment during those years than in FDI.

In the wake of the 1995 peso crisis, however, many observers came to view such short-term inflows of funds as potentially destabilizing. Shares of stock or bonds could be easily sold and funds repatriated when investor sentiment became less optimistic. If the central bank had to hold many more foreign exchange reserves to deal with such a contingency, the benefit to the economy from this short-run inflow was not so great. In fact, during the early 1990s, when these large portfolio inflows occurred, a significant
portion was devoted to increasing reserve holdings at the Bank of Mexico, but even those large holdings were not sufficient to avoid a subsequent crisis. Decisions by foreign corporations to build factories and office buildings in Mexico might be regarded as a more desirable indication of commitment to the Mexican economy, because those long-lived, fixed assets would not as readily be sold in times of financial crises.

This chapter first traces the recent liberalization of Mexico’s foreign investment regime prior to, and after, the implementation of NAFTA. Important benefits uniquely provided to NAFTA partners were in the finance and banking sectors. The chapter then briefly presents a conceptual framework to apply in predicting how patterns of foreign investment by members and nonmembers might be affected by NAFTA.

The major discussion of the chapter centers on the empirical record of FDI in Mexico and how it might be interpreted. Over the 1990s, FDI has grown in importance relative to Mexican GDP, from 9.2 percent to 12.5 percent, and as a source of financing capital formation, from less than 10 percent to greater than 15 percent. Mexico’s share of FDI inflows among all countries has increased slightly during NAFTA’s existence.

From a U.S. perspective, the share of total FDI allocated to Mexico has risen, a sign of closer economic integration, even though it is still far lower than between the United States and Canada. From a Mexican perspective, the U.S. share of incoming FDI has fallen somewhat but still retains a strong position, exceeding 60 percent. U.S. investment is less oriented toward manufacturing than previously, because that share has fallen from over 70 percent to 55 percent, but the manufacturing share of FDI from all sources has risen. U.S. investment has shifted to the service sector, particularly finance. These data indicate that FDI has not been a vehicle to accelerate a relocation of American manufacturing capacity into Mexico.

### Mexican Investment Provisions and NAFTA

During the last quarter of the 19th century, Mexico was quite open to foreign investment during the presidency of Porfirio Diaz (Kehoe 1995). The Mexican Revolution of 1910, however, rejected that political system and economic philosophy. Restrictions on foreign investment became part of the Mexican constitution of 1917. A later rallying point for those skeptical of foreign control was President Cardenas’ nationalization of the oil industry in 1938. A 1973 law to regulate foreign investment explicitly limited nonresident ownership of Mexican companies to 40 percent in petrochemicals and motor vehicles, and more generally to 49 percent,
unless a special exemption was granted by the Comisión Nacional para la Inversión Extranjera (CNIE). This standard reinforced an industrial policy aimed at import substitution and the development of domestically owned firms. Even following the 1982 debt crisis, during the 1983-85 period, the government maintained an active industrial policy targeted at a smaller number of priority sectors: motor vehicles, pharmaceuticals, and capital equipment (Lustig, 1998). Domestic content requirements, government procurement practices, and trade balance requirements complemented restrictions on foreign ownership.

The CNIE did have discretion to waive restrictions when a proposal was viewed as being in the national interest. The less restrictive regulations adopted in 1989 took advantage of that flexibility to clarify conditions for automatic approval of projects that met national goals regarding foreign trade and job creation. Ownership limits on maquiladora operations also were eliminated (Ortiz, 1993). Further examples of liberalization occurred in 1990, when foreigners were allowed to participate in insurance companies and newly privatized banks.

The 1993 Foreign Investment Law allowed investment in all sectors unless explicitly limited in the law. Of 704 sectors identified by the law, 606 were free of restrictions. Thirty-seven sectors allow up to 100 percent foreign ownership with prior authorization from CNIE, 35 allow a minority foreign ownership position, 16 are reserved for Mexican nationals, and 10 are reserved for the Mexican state. Those activities reserved for the state include basic petrochemical industries, petroleum and other hydrocarbons, and the distribution of electricity. Activities reserved for Mexican nationals include domestic land passenger transportation, retailing of gasoline, and broadcasting and other television services. A 49 percent minority foreign investment share applies, among others, to holding companies for financial groups, commercial banking institutions, securities brokerage companies, printing and publication of domestic newspapers, and port administration (European Commission, 1999).

Given this general policy applicable to investment from all sources, were particular preferences created by NAFTA? Provisions for the right to establish a business within Mexico and to be treated no less favorably than domestic firms applied only to NAFTA members. Limitations on performance requirements for FDI were more ambitious than under the Uruguay Round agreement; practices such as export performance requirements were outlawed, and several new items not covered in the Canada-United States Free Trade Agreement were added. Rights to compensation in the case of expropriation were established, as well as access to foreign exchange to remit profits and royalties. Stronger
intellectual property protection was granted. Opportunities for deeper integration of the financial sector of the partner economies were created, with U.S. banks and securities firms able to establish wholly owned subsidiaries. NAFTA members were granted the right to enter the petrochemical industry and electricity generation, areas reserved for the state in the 1993 law (Graham, 1994). While these distinctions are important in individual industries, it is more difficult to demonstrate in general terms how much of a preferential advantage is created for investment from NAFTA partners.

A Conceptual Framework for Predicting Changes in the Pattern of FDI

Although the preferential reduction in trade barriers under NAFTA is expected to increase trade between the partners, the effect on foreign direct investment from partners is ambiguous. For U.S. firms that invested in Mexico in order to serve the protected home market, this justification no longer exists. With the opportunity to serve the Mexican market by exporting from the United States now more viable, the firm may be less likely to invest in Mexico. On the other hand, the reduction of trade barriers may make it feasible to take greater advantage of Mexico’s comparative advantage in particular products or assembly processes. Or, the fact that Mexico gains more secure access to a larger export market may now justify an investment that was not warranted to serve only the local market. Under those circumstances, investment by partners may rise in Mexico. Also, Mexican economic growth may accelerate due to spillovers from the entry of foreign producers who bring new production techniques to the country, which, in turn, would warrant additional foreign investment (Blomstrom and Kokko, 1997).

From the perspective of nonmembers, if high barriers are retained against imports from non-NAFTA sources, then production within NAFTA may remain the most attractive way to serve the market. Although U.S. barriers generally are not high, and substantial reductions in Mexican restrictions have occurred, in certain sectors the attraction of producing in NAFTA continues to motivate foreign investment in the region. The role of U.S. tariffs, quotas, and rules of origin in the apparel industry has already been discussed. Another example is the requirement that television sets larger than fourteen inches must use picture tubes made in North America in order to be eligible for preferential tariff treatment under NAFTA.
(USITC 1997, p. 4-10). As a result, Daewoo, Inc began producing television picture tubes in Tijuana, which replaced those coming from Asia.

On the other hand, the high NAFTA content requirement in the auto sector may cause foreign producers to decide that producing in Mexico by assembling largely foreign parts is no longer an attractive strategy to serve the U.S. and Canadian markets. Such a requirement is less likely to affect well established producers who already buy from North American suppliers, but a new entrant from outside the region will have greater difficulty in meeting that standard. While the policy may be viewed as a reward to firms that accepted the high costs of building plants to serve the limited Mexican market during the era of industrial targeting, the NAFTA content requirement will not be phased out in the future. Thus, new entry into the Mexican market that does not meet this requirement must be warranted by the potential expansion of sales in Mexico alone or by export to non-NAFTA markets. To the extent that NAFTA promises a growing market and a more stable investment environment, however, greater investment from nonmember as well as member countries will be warranted, because the reforms initially carried out by decree are now bound by treaty.

Few a priori statements can be made about the relative strength of these different influences in determining the actual response to the establishment of a preferential trade agreement. Blomstrom and Kokko cite evidence from the Canada-United States FTA that suggests less investment between partner countries occurred, while nonmembers increased their investment in Canada. The next section of this study examines the response between the United States and Mexico and finds that a similar pattern characterizes developments in the manufacturing sector.

**Empirical Patterns of Investment**

The rising importance of FDI in the Mexican economy occurred prior to NAFTA, but it certainly continued and accelerated after NAFTA. United Nations figures summarized in Exhibit 4.1 show that FDI was much greater in the years after Mexico adopted its apertura policy than before. When the stock of FDI is expressed as a share of GDP, the ratio rose from 4.2 percent in 1980 to 12.5 percent in 1997. If the annual flow of FDI is expressed as a share of gross fixed capital formation in Mexico, the figure rises from an average value of 9.4 percent in the five years before NAFTA to a value of 16.3 percent in 1997. The actual ratios are influenced by changes in the numerator as well as the denominator, and the particularly high values observed in 1995 can be attributed to the recession of that year.
Both income and capital formation by domestic firms fell at that time. Given the high real interest rates that have continued to limit a broad-based recovery among borrowers in Mexico, foreign firms that have access to other sources of funds may be particularly well positioned to expand operations. Even though real interest rates have fallen in Mexico, from 15 percent in 1995 to less than 5 percent in 1997, as reported by the World Bank, the role of FDI has remained high.

**Exhibit 4.1**
**The Role of FDI in Mexico (percent)**

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock of FDI as a share of GDP</td>
<td>4.2</td>
</tr>
<tr>
<td>Annual flow of FDI as a share of investment*</td>
<td>9.4</td>
</tr>
</tbody>
</table>

*Investment refers to gross fixed domestic investment.

These figures clearly indicate an important role for FDI in transforming the Mexican economy. Whether they are attributable to NAFTA, however, or whether they could be expected for other reasons, warrants attention. As in the case of trade, FDI may have been growing in all countries, and assigning any special role to NAFTA would be less warranted in interpreting the Mexican experience. In Exhibits 4.2 and 4.3, figures for the ten largest recipients of FDI in the developing world are presented. At the bottom of the table, Mexico’s share of FDI entering developing countries is reported, as well as its share of total FDI. Although Mexico clearly faces competition from other developing countries as a site for FDI, and it may have lost ground relative to some of them, its share of the world stock of FDI has risen slightly over the 1990s. Based on annual FDI inflows reported in Exhibit 4.3, Mexico’s share has been erratic but generally higher than in the pre-NAFTA years.
### Exhibit 4.2
Stock of Foreign Direct Investment, 1980-1998 ($ billion)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>World total</td>
<td>506.6</td>
<td>782.3</td>
<td>1,768.5</td>
<td>2,789.6</td>
<td>3,436.7</td>
<td>4,088.1</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>132.9</td>
<td>237.2</td>
<td>370.6</td>
<td>769.3</td>
<td>1,055.7</td>
<td>1,219.3</td>
</tr>
<tr>
<td>Argentina</td>
<td>5.3</td>
<td>6.6</td>
<td>7.4</td>
<td>27.7</td>
<td>40.0</td>
<td>45.5</td>
</tr>
<tr>
<td>Brazil</td>
<td>17.5</td>
<td>25.7</td>
<td>37.1</td>
<td>98.8</td>
<td>128.1</td>
<td>156.8</td>
</tr>
<tr>
<td>Chile</td>
<td>0.9</td>
<td>2.3</td>
<td>10.1</td>
<td>15.5</td>
<td>25.7</td>
<td>30.5</td>
</tr>
<tr>
<td>Mexico</td>
<td>8.1</td>
<td>18.8</td>
<td>22.4</td>
<td>41.1</td>
<td>50.5</td>
<td>60.8</td>
</tr>
<tr>
<td>China</td>
<td>0.1</td>
<td>4.3</td>
<td>18.6</td>
<td>131.2</td>
<td>215.7</td>
<td>261.1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>43.5</td>
<td>46.4</td>
<td>56.1</td>
<td>71.0</td>
<td>94.6</td>
<td>96.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>10.3</td>
<td>25.0</td>
<td>38.9</td>
<td>50.6</td>
<td>61.5</td>
<td>61.1</td>
</tr>
<tr>
<td>Korea</td>
<td>1.1</td>
<td>2.2</td>
<td>5.9</td>
<td>10.5</td>
<td>15.3</td>
<td>20.5</td>
</tr>
<tr>
<td>Malaysia</td>
<td>5.2</td>
<td>7.4</td>
<td>10.3</td>
<td>27.1</td>
<td>37.3</td>
<td>41.0</td>
</tr>
<tr>
<td>Singapore</td>
<td>6.2</td>
<td>13.0</td>
<td>28.6</td>
<td>59.6</td>
<td>78.6</td>
<td>85.9</td>
</tr>
<tr>
<td>Mexican Share of LDC</td>
<td>0.061</td>
<td>0.079</td>
<td>0.061</td>
<td>0.053</td>
<td>0.048</td>
<td>0.050</td>
</tr>
<tr>
<td>Total</td>
<td>0.016</td>
<td>0.024</td>
<td>0.013</td>
<td>0.015</td>
<td>0.015</td>
<td>0.015</td>
</tr>
<tr>
<td>Mexican Share of World Direct Inv. Abroad</td>
<td>0.024</td>
<td>0.024</td>
<td>0.025</td>
<td>0.029</td>
<td>0.027</td>
<td></td>
</tr>
<tr>
<td>Intensity Ratio, U.S. investment in Mexico</td>
<td>0.99</td>
<td>1.92</td>
<td>1.68</td>
<td>1.96</td>
<td>1.83</td>
<td></td>
</tr>
</tbody>
</table>

Exhibit 4.3
Flows of Foreign Direct Investment, 1987-1998 ($ billion)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>World Total</td>
<td>173.5</td>
<td>219.4</td>
<td>253.5</td>
<td>328.9</td>
<td>358.9</td>
<td>464.3</td>
<td>643.9</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>35.3</td>
<td>78.8</td>
<td>101.2</td>
<td>106.2</td>
<td>135.3</td>
<td>172.5</td>
<td>165.9</td>
</tr>
<tr>
<td>Argentina</td>
<td>1.8</td>
<td>1.8</td>
<td>3.4</td>
<td>5.3</td>
<td>6.5</td>
<td>8.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.5</td>
<td>1.3</td>
<td>2.6</td>
<td>5.5</td>
<td>10.5</td>
<td>18.7</td>
<td>28.7</td>
</tr>
<tr>
<td>Chile</td>
<td>0.9</td>
<td>1.0</td>
<td>2.6</td>
<td>3.0</td>
<td>4.7</td>
<td>5.4</td>
<td>4.8</td>
</tr>
<tr>
<td>Mexico</td>
<td>4.3</td>
<td>6.7</td>
<td>12.4</td>
<td>9.5</td>
<td>9.2</td>
<td>12.8</td>
<td>10.2</td>
</tr>
<tr>
<td>China</td>
<td>4.7</td>
<td>27.5</td>
<td>33.8</td>
<td>35.8</td>
<td>40.2</td>
<td>44.2</td>
<td>45.5</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1.9</td>
<td>3.7</td>
<td>4.1</td>
<td>3.3</td>
<td>5.5</td>
<td>6.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.0</td>
<td>2.0</td>
<td>2.1</td>
<td>4.3</td>
<td>6.2</td>
<td>4.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Korea</td>
<td>0.9</td>
<td>0.6</td>
<td>0.8</td>
<td>1.8</td>
<td>2.3</td>
<td>2.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2.4</td>
<td>5.0</td>
<td>4.3</td>
<td>4.2</td>
<td>5.1</td>
<td>5.1</td>
<td>3.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.7</td>
<td>4.7</td>
<td>8.6</td>
<td>7.2</td>
<td>7.9</td>
<td>9.7</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Mexico's share of flows into LDCs 0.122 0.085 0.122 0.090 0.068 0.074 0.062
Mexico's share of world total flows 0.025 0.031 0.049 0.029 0.026 0.028 0.016
Share of U.S. flows to Mexico 0.046 0.034 0.063 0.037 0.030 0.060 0.022
Intensity ratio 1.85 1.11 1.29 1.28 1.17 2.17 1.36

This pattern also could be related to the source of FDI in Mexico. Exhibit 4.4 shows FDI in Mexico by country of origin. A break in the data series occurs after the year 1993, due to a change in the way the Mexican Secretary of Commerce and Industrial Promotion (SECOFI) tabulates such information.11 The volatility of the figures reported in Exhibits 4.4 and 4.5 also reflects the lumpiness of investments made, which means the registration of a large plant in one year versus another year can affect the measured values substantially. In general, they demonstrate a decline in the U.S. share over the 1980s and prior to NAFTA, from above 70 percent to around 60 percent. Does such a trend indicate a lack of U.S. interest in Mexican opportunities, or a surge of investment from other countries whose firms were motivated by the prospect that NAFTA would give them access to the U.S. market? Neither interpretation is persuasive when viewed from the perspective of the changing relative roles of the United States, the European Union, and Japan as sources of FDI. Consider the implications of the UN data for outward FDI flows that occurred in the 1987-92 period and in each succeeding year: the average values for the initial 5 year period show that the United States was a source of 15 percent of all FDI, the European Union 52 percent, and Japan 17 percent. This was a period of a weak U.S. dollar. A buoyant stock market in Japan made it possible to raise funds easily to finance investment abroad, and a strong yen made production abroad an attractive strategy for many Japanese firms.

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11 The SECOFI figures for the earlier period are based upon the amounts that foreign companies registered in a given year with the Registro Nacional de Inversiones Extranjeras (RNEI). Problems with that system became apparent in 1995. Large amounts of FDI that companies registered in that year had, in fact, already occurred and should have been attributed to earlier years. In addition, the earlier figures included investment approved by the Comision Nacional de Inversiones Extranjeras (CNIE), in spite of the fact that approval did not necessarily mean that the projects would be carried out. The earlier figures did not effectively include capital equipment loaned by a parent to a Mexican subsidiary, as often occurred in the maquiladora sector. The new series addresses these various shortcomings, although it does not yet include reinvested earnings (Banco de Informacion Economica 1999).
In subsequent years, however, Japan’s share of outward FDI flows fell to six percent or less, while the U.S. share varied between 20 and 30 percent. The U.S. share of FDI flows into Mexico roughly appears to have maintained its pre-NAFTA level. At the aggregate level, then, the role of U.S. firms operating in Mexico has not been characterized by a retreat in the face of surging Japanese and European investment.

From a U.S. perspective, FDI in Mexico has grown as a share of the stock of total U.S. direct investment abroad, from less than 2 percent in the late 1980s to nearly 3 percent in 1997-98, as reported at the bottom of Exhibit 4.2. As in the case of all FDI inflows into Mexico, annual U.S. investment shows a much more volatile record. In some years, Mexico has accounted for over 6 percent of U.S. direct investment abroad (1991, 1994, 1997), but in other years, Mexico accounts for three percent or less (1996, 1998). In both Exhibits 4.2 and 4.3, the bottom row shows an intensity ratio based on the share of U.S. investment that occurs in Mexico divided by Mexico’s share of all inward FDI. As in the case of trade statistics, the ratio indicates whether U.S. investment abroad focuses disproportionately on Mexico and whether that focus has increased over time. The value of the ratio is greater than one, which shows that the United States is more likely to invest in Mexico, controlling for Mexico’s attractiveness as a site for investment from all sources.

Such a value is not surprising, given the advantage of proximity in attracting foreign investment. However, the establishment of NAFTA does not seem to have increased this ratio, as might have been expected if NAFTA created major benefits for U.S. firms in the form of a more integrated North American production structure. Years of high U.S. investment in Mexico, such as 1991 and 1994, also were years when firms of nonmembers decided to invest more in Mexico. Relative to those potential competitors, U.S. producers only gained ground in 1997.

As a point of comparison, Mexico’s GDP is roughly 60 percent of Canada’s, but U.S. direct investment in Mexico is only 25 percent of what it has invested in Canada. The greater focus of U.S. investment in Canada

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12 Definitive conclusions are difficult to draw because of mixed evidence from other sources. For example, the OECD’s International Direct Investment Statistics Yearbook for 1998 shows a steady decline in the U.S. share from 1992 to 1996. Also, interpreting the large jump in FDI that occurs between 1993 (the old series) and 1994 (the new series) is problematic. While the UN figures show an increase of $5.6 billion, U.S. investment in Mexico only increased that year by $1.9 billion, which implies a particularly small U.S. share of the total. OECD figures indicate that the U.S. share of FDI in Mexico was 75 percent in 1993 and 62 percent in 1994.
than in Mexico suggests that a potentially higher degree of economic integration among neighboring countries would call for much additional investment.

The sectoral allocation of this investment is also of interest, as illustrated in Exhibits 4.6 and 4.7. During the years that NAFTA was being negotiated, a shift in the sectoral distribution of investment occurred, with the share distributed to services rising at the expense of manufacturing. Ortiz cited that trend as a reason to expect less direct competition between U.S. workers and Mexican workers in trying to attract investment, if the investment in Mexico is to support the production of nontraded goods and services. The rise in service-sector investment is also linked to the privatization of state enterprises in the utility sector, such as the telephone monopoly. While such privatization cannot be projected to occur at the same rate forever into the future, other opportunities for expansion in the service sector exist. In the post-NAFTA years, however, the share of manufacturing has again risen.

Exhibit 4.6
Foreign Direct Investment in Mexico, Historical Sum by Economic Sector ($ billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Agriculture</th>
<th>Mining</th>
<th>Industrial</th>
<th>Commerce</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>8,459</td>
<td>8</td>
<td>420</td>
<td>6,560</td>
<td>755</td>
<td>717</td>
</tr>
<tr>
<td>1981</td>
<td>10,160</td>
<td>3</td>
<td>231</td>
<td>7,965</td>
<td>925</td>
<td>1,036</td>
</tr>
<tr>
<td>1982</td>
<td>10,786</td>
<td>5</td>
<td>237</td>
<td>8,347</td>
<td>926</td>
<td>1,272</td>
</tr>
<tr>
<td>1983</td>
<td>11,470</td>
<td>5</td>
<td>252</td>
<td>8,944</td>
<td>984</td>
<td>1,285</td>
</tr>
<tr>
<td>1984</td>
<td>12,900</td>
<td>6</td>
<td>258</td>
<td>10,213</td>
<td>1,016</td>
<td>1,407</td>
</tr>
<tr>
<td>1985</td>
<td>14,629</td>
<td>6</td>
<td>276</td>
<td>11,379</td>
<td>1,125</td>
<td>1,842</td>
</tr>
<tr>
<td>1986</td>
<td>17,053</td>
<td>6</td>
<td>307</td>
<td>13,298</td>
<td>1,277</td>
<td>2,165</td>
</tr>
<tr>
<td>1987</td>
<td>20,930</td>
<td>22</td>
<td>356</td>
<td>15,699</td>
<td>1,255</td>
<td>3,599</td>
</tr>
<tr>
<td>1988</td>
<td>24,087</td>
<td>10</td>
<td>381</td>
<td>16,719</td>
<td>1,502</td>
<td>5,477</td>
</tr>
<tr>
<td>1989</td>
<td>26,587</td>
<td>29</td>
<td>390</td>
<td>17,701</td>
<td>1,889</td>
<td>6,579</td>
</tr>
<tr>
<td>1990</td>
<td>30,310</td>
<td>90</td>
<td>484</td>
<td>18,894</td>
<td>2,060</td>
<td>8,782</td>
</tr>
<tr>
<td>1991</td>
<td>33,875</td>
<td>135</td>
<td>515</td>
<td>19,857</td>
<td>2,447</td>
<td>10,920</td>
</tr>
<tr>
<td>1992</td>
<td>37,474</td>
<td>174</td>
<td>524</td>
<td>20,958</td>
<td>3,198</td>
<td>12,620</td>
</tr>
<tr>
<td>1993</td>
<td>42,375</td>
<td>209</td>
<td>579</td>
<td>23,279</td>
<td>3,958</td>
<td>14,351</td>
</tr>
</tbody>
</table>

Source: Data reported at the Banco de Informacion Economica web site, http://dgermesbp.imij.upc.edu/cpi-win/bde.exe
A disadvantage of most national measures of FDI is that few
countries are able to break down the figures by country of origin and by
sector, in order to determine, say, what UK investment is in the Mexican
manufacturing sector. Such disaggregation runs into the problem of
violating the confidentiality of individual companies when very detailed
industry sectors are chosen and only one or two companies operate in such
a sector. Information from the United States generally does not suffer
from that drawback, given the large number of multinational corporations
reporting. Therefore, a more detailed examination of U.S. measures of its
investment in Mexico is appropriate, even if it must be considered in
isolation from other competing sources of FDI.

Given the general trends regarding the source of FDI in Mexico,
and the sectors in which it is concentrated, what additional perspective can
be gained by looking at figures reported by the United States? Based on the
activity of U.S. majority-owned affiliates in Mexico, the breakdown by
sector given in Exhibit 4.8 shows that manufacturing declined from over 70
percent of the stock of U.S. investment in the country at the start of the
decade to 60 percent in 1993 and further to 55 percent in 1998.
Correspondingly, a large increase in services occurred prior to NAFTA in
the 1990-1993 period, with the subsequent share in that sector gradually
increasing from 20 to 25 percent of the total. Thus, Mexican service
industries have been more attractive to U.S. firms than have manufacturing
in the post-NAFTA years.

With regard to the operations of U.S. affiliates in Mexico,
employment often is a more useful indicator of the scope of activity within
the country than are total assets held. As shown in Exhibit 4.9,
employment has grown slightly faster in the period With regard to the
operations of U.S. affiliates in Mexico, employment often is a more useful
indicator of the scope of activity within the country than are total assets
held. As shown in Exhibit 4.9, employment has grown slightly faster in the
period after NAFTA than in the liberalization period from 1985-93. While
manufacturing represents roughly 60 percent of the stock of assets, it
represents over 85 percent of employment. Electrical equipment and
electronics is the largest single sector reported, a result that is quite
consistent with that sector’s role as one of the three major areas of
maquiladora activity. The fluctuation in the manufacturing share of total
employment may be related to the attractiveness of maquiladora
production. An overvalued peso will reduce the attraction of this sector,
while undervaluation, as occurred with the 1995 peso crisis, will increase its
attractiveness. Growth in major markets for Mexican exports remains
critical in explaining the strength of that sector, however.
This employment perspective can be supplemented by the measure of property, plant and equipment of affiliates in Mexico, shown in Exhibit 4.10. Again, these fixed assets are more important in manufacturing than in the service sector, and manufacturing’s share of the total is 85 percent. Note, however, that while manufacturing accounts for comparable shares of employment and fixed assets, the distribution within manufacturing is quite different. More capital-intensive sectors are chemicals, transportation equipment, and industrial machinery, while more labor-intensive activities are electronics and other manufacturing. Over the 1993-97 period, the most rapid growth in employment occurred in electronics and industrial machinery, sectors that did not receive a particularly strong growth impetus from specific NAFTA provisions.

With respect to the textile/apparel and motor vehicle industries, considered separately in previous chapters, only a few inferences regarding FDI can be drawn because of limitations in the data. Historically, only a small amount of investment occurred in the labor-intensive textile/apparel sector and, therefore, the U.S. Department of Commerce did not break it out as a separate category before 1994. Based on the stock of net property, plant and equipment of majority-owned affiliates in 1994, textiles and apparel accounted for $165 million, or 2.5 percent of the U.S. manufacturing total in Mexico. Although employment rose from 10,400 in 1994 to 24,800 in 1997, capital expenditures fell from $78 million to $27 million. To put these figures in perspective, domestic new capital expenditures in textiles and apparel were $4.1 billion in 1994. Imports from Mexican affiliates rose more than twice as fast as exports to those affiliates. No distinction between textiles and apparel is possible, although press reports do indicate that major U.S. producers have found it advantageous to invest in Mexico to produce certain fabrics. For example, Burlington Mills announced a three-year plan to invest $200 million in Mexican yarn and fabric facilities, at the same time that it would increase its domestic investment by $300 million. CEO George Henderson noted that, overall, NAFTA has been very good in bringing sewing operations back to this continent (McCurry, 1998). More recent observations suggest that U.S. and foreign investment in textile production within Mexico may be accelerating, a possible caution against projecting that strong U.S. exports of textiles will be maintained in future years (Milliman, 2000).

In the case of motor vehicles and parts, Exhibit 4.8 provides some guidance, because the transportation equipment sector is almost exclusively accounted for by motor vehicles in Mexico. The direct investment position is smaller in 1998 than it was in 1991, a somewhat surprising result in light of announced expansions by U.S. producers in Mexico. Of course, greater
capital spending need not involve greater equity ownership, and U.S.
parents may have repatriated profits from their Mexican subsidiaries.
Employment increased sharply when the New Auto Decree was issued in
1989, but the peak employment level reached in 1991 quickly faded when
the United States was hit by recession. The 1998 figure is higher than
1991, but again, the growth is smaller than would be expected on the basis
of the rapid rise in Mexican exports to the United States. That difference
suggests that output per worker is rising in Mexico and that many of the
exports are accounted for by firms that are not controlled by U.S. parents.

Recapitulation

FDI has become a more important part of the Mexican economy
over the years that NAFTA has been in existence. While part of this may
be attributable to cyclical restrictions on the ability of domestic companies
to raise capital, part is certainly due to the attraction of producing in an
economy where the ground rules for FDI are much clearer. Fewer
performance requirements are imposed, the approval process is more
straightforward, and the opportunities for majority-controlled operations
are greater. Nevertheless, new opportunities are available in many other
developing countries and Mexico’s share of total FDI has only risen slightly
in the post-NAFTA years. The United States has become relatively less
important as a source of FDI worldwide, and the share of investment
entering Mexico from the United States has declined somewhat, although it
still remains greater than 60 percent. The U.S. investment that has occurred
has become more oriented toward the service sector, an area where
NAFTA provisions did create a special incentive for U.S. investment in
various financial institutions and where direct competition with U.S.
workers is less. U.S. investment in the manufacturing sector has not been
disproportionately centered on sectors where strict rules of origin or other
trade barriers might have encouraged such activity. In particular, textile and
apparel activity is increasing in terms of employment, but the dollar
amounts of investment still are a small fraction of total investment. FDI in
motor vehicles and parts production has grown very moderately. Although
the manufacturing share of U.S. FDI has fallen, firms from nonmember
countries account for an increase in manufacturing for all FDI in Mexico.
That pattern appears similar to Canada’s post-FTA experience.
Chapter 5

Changing Economic Structures and the Adjustment Process

Compared to 1980, when the structure of the Mexican economy was strongly influenced by government policies to promote particular industries and reinforced by trade policies to encourage import substitution, the current structure has changed substantially. These changes have been part of a long-run process in which the adoption of NAFTA has been only one of several significant steps taken. Therefore, the overview provided in the first section of this chapter is not intended to identify only those changes attributable to NAFTA, but instead to summarize general trends that have occurred in the Mexican and U.S. economies. Those trends, in turn, often influence the way NAFTA is perceived in both countries.

A few observations at a very aggregate level provide a useful starting point. Contraction of the Mexican agricultural sector as a share of the economy has continued, from 8.2 percent in 1980 to 5.3 percent in 1997. The industrial sector also has declined in importance, from a peak of 35.7 percent of GDP in 1987 to 24.7 percent in 1994, with some reversal to 26.0 percent in 1997. While some of that decline reflects a smaller share for the mining sector, manufacturing has declined from 25.7 percent of GDP in 1987 to 19.9 percent in 1997. The sector that has clearly grown is the service sector, from 55.5 percent in 1987 to 68.7 percent in 1997 (World Bank, 1999). Thus, NAFTA has not reshaped the Mexican economy into one where manufacturing for the North American market has accounted for an ever larger portion of activity.

At the same time, the U.S. economy has undergone significant change, with a similar shift away from manufacturing toward a service economy. Over the past two decades, the manufacturing share of value-added hit a trough of 19.7 percent in 1986, recovered to a peak of 20.0 percent in 1988, fell to another trough of 17.6 percent in 1993, and rose to 18.5 percent in 1995. Swings in manufacturing activity within the U.S. economy reflect the role of durable goods production, for which demand is more cyclical than nondurable goods. Although the relative importance of industrial production has fallen over time, it grew during the economic expansion of the 1990s, rising 39 percent from its past peak in 1989. By way of comparison, industrial production grew by 21 percent between the
peak in 1979 and the peak in 1989. Thus, the post-NAFTA years have been characterized by rising industrial production, not an acceleration in the trend to deindustrialize.

With respect to the number of workers employed in the manufacturing sector, 1979 marked a post-World War II peak in the United States. At the 1989 peak, manufacturing employment had fallen by 7.5 percent, and by 1998, it had fallen another 3.0 percent. The general trend toward contraction in industrial employment appears to have slowed down in the most recent period. Also, average weekly earnings, expressed in 1982 dollars, increased by 6 percent from the 1992 trough to 1999, reversing a steady decline from 1973 (Council of Economic Advisers, 2000).

Given these changes that are occurring for reasons quite independent of NAFTA, to what extent has adjustment to the changes fostered by NAFTA been made more difficult? This chapter elaborates both the general adjustment patterns and the more specific areas of concern raised by NAFTA. Strong economic expansion in the United States and steady recovery in Mexico from the 1995 peso crisis appear to have muted claims to reverse the liberalization that has occurred thus far. Reliance on trade adjustment assistance, antidumping actions, or trade safeguards to slow down industry declines or promote adjustment to other industries has been rather limited. However, to the extent that either country faces particularly large industry contractions, pressures are likely to rise for governments to slow down that process.

**Changes in the Mexican Economic Structure**

The decline in the Mexican agricultural sector, noted above, has been one of the key adjustment issues faced in the NAFTA negotiations and in subsequent performance of the economy, in spite of the fact that it accounts for a relatively small share (five percent) of GDP. Mexican negotiators sought a long phase-in period for the liberalization of imports of cereals, in order to protect domestic producers of corn. An immediate move to free trade would result in a serious contraction of employment in the agricultural sector, which, in turn, would drive down wages for unskilled workers in manufacturing and create pressure for migration to the United States (Levy and van Wijnbergen, 1994). Mexico does hold a comparative advantage in the production of many fruits and vegetables in the winter season, due to a milder climate and abundant labor, and for that reason, U.S. producers of competing goods sought slower liberalization of trade in that area.
Even if there were a coordinated liberalization of trade in those two sectors, and Mexican output shifted from production of corn and beans for the domestic market to production of fruits and vegetables for export markets, such a reallocation would be unlikely to avoid an outflow of labor from Mexican agriculture. Changing market conditions have had the greatest adverse effect on small-scale producers with little access to credit. As those producers give up farming, the consequent contraction in employment and outflow of labor from agriculture acts as a check on the tendency for Mexican wages to rise.

Although the Mexican industrial sector has grown, that growth has been slower than the overall growth rate of the economy. Within the manufacturing sector, other significant changes have occurred. Exhibit 5.1 shows the growth in industrial production across several disaggregated sectors. Between 1993 and 1999, manufacturing production rose by 34 percent. Sectors in which real output grew more rapidly are the basic metal industry (51 percent) and machinery and products of metal (64 percent). The latter category includes motor vehicles and parts, a significant part of the Mexican manufacturing sector and one where export growth was above average after NAFTA’s adoption. As noted by the U.S. Department of Commerce (1999), Mexican employment in vehicle assembly was 60,000 in 1993, fell to 41,800 during the 1995 recession, and recovered to 47,700 by 1998. Employment in auto parts was 258,000 in 1993, fell by 5,000 in 1995, and rose to 311,000 in 1998. Because trade in this sector is strongly influenced by NAFTA provisions regarding domestic content and rules of origin, these changes in production patterns likely would have been different in the absence of NAFTA.

The growth of basic metal production has been promoted, in part, by domestic content requirements in the production of motor vehicle and parts. It also raises the question whether NAFTA has encouraged particularly pollution-intensive industries in Mexico to grow faster than others. Based on expenditures necessary to clean up and abate pollution in the United States to meet clean air and clean water standards, the most pollution-intensive industries are chemicals, petroleum refining, paper, and basic metals (Jaffe, et al, 1995). From 1993 to 1998, the U.S. bilateral trade surplus with Mexico actually increased in the case of paper, chemicals and petroleum products. Meanwhile, Mexican exports of basic metals to the United States grew at an above-average rate, although the United States still is a net exporter to Mexico in this sector. More importantly, Mexican exports of these same goods to other countries grew at an even faster rate, an indication that NAFTA incentives are not the dominant reason for its expansion. In short, Mexico has not become a pollution haven as a result

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of NAFTA, and the intensity of trade with the United States in pollution-intensive goods has fallen in the post-NAFTA period. Environmental complaints have been much more specific, focusing on water quality along the Rio Grande and air pollution along the border, due to greater truck traffic.

Geographically, there has been a major shift in industrial production within Mexico. Hanson (1998) noted that the process of moving away from Mexico City began even before the liberalization initiatives of the mid-1980s were adopted. From 1980 to 1993, the share of manufacturing employment accounted for by Mexico City fell from 44 percent to 29 percent, while the border region share rose from 21 percent to 30 percent. One factor contributing to that shift was the change in trade policy from import substitution, which favors locating near the major market of Mexico City, to export-led growth, which favors regions located near the foreign market to be served.

The maquiladora program promoted expansion in the region bordering the United States, and NAFTA is projected to continue that process. Hanson’s formal analysis attributed this shift to the importance of transportation costs in serving the U.S. market and to the lack of major agglomeration effects within an industry, which would penalize firms that moved away from the Mexico City industrial core. Linkages to related upstream and downstream industries do appear to be important, which favors new locations that also are able to attract important input suppliers or component purchasers. Hanson found that faster growth in employment occurred in new plants that were smaller than those of the old industrial base.

Rapid growth in the border region has led employers to consider locations in other states where wages may be lower and turnover of workers a less significant problem. Just as an initial attraction of the border region was its lower congestion, less unionization, and fewer environmental problems, these new intermediate locations offer some of the same potential advantages. As firms locate in states between Mexico City and the border, the distribution of industrial activity is becoming less concentrated.

Many economists predicted that the liberalization of the Mexican economy would result in a more equal distribution of income. Wages of unskilled workers would rise because of greater demand for those workers in export-oriented industries that would face fewer barriers in the U.S. market. Correspondingly, reduced Mexican protection for industries that required more capital and skilled labor would result in lower returns to those factors. Nevertheless, from the various multilateral, bilateral and unilateral policy changes that have occurred over the past two decades of
apertura, the expected tendency toward greater equality in the distribution of income has not been observed for the nation as a whole. Within the manufacturing sector, Feenstra and Hanson (1997) examined the growth of maquiladora output in the 1980s and reported that the wage gap between non-production and production workers rose in regions where maquiladora activity increased.

Lustig (1998) found that the ratio of incomes of salaried workers in manufacturing to wage earners in manufacturing rose 30 percent from 1985 to 1994. Also, she noted that returns to education had risen. What explains that result? Some economists point to the simultaneous contraction of the agricultural sector, which meant that trade liberalization occurred when an important source of domestic demand for unskilled labor was falling. Other economists suggest that the general liberalization of Mexico’s trade regime prior to NAFTA reduced protection for many sectors, not just those that were capital-intensive. Consequently, imports of goods from countries with even lower wages than Mexico could rise, having a negative effect on low-wage manufactures.

With respect to broader measures of income distribution, the shifts in regional economic activity reported by Hanson did contribute to greater equality in the northern states. That influence was not felt in states to the south of Mexico City, however. Falling coffee and cocoa prices, particularly, led to greater poverty in those regions. Also, subsidies paid to agriculture were reduced at that time. Real appreciation of the peso led to a fall in poverty in urban areas and a rise in poverty in rural areas over the 1989-94 period examined by Lustig. The subsequent depreciation of the peso in 1995 caused real wages to fall by nearly 40 percent through 1997, a shock that undoubtedly raised the incidence of poverty, although it presumably reduced some of the relative bias against rural areas and promoted more maquiladora activity.

Given the large wage reduction in Mexico, particularly among unskilled workers, what implications were there for migration to the United States? That issue was addressed by Hanson and Spilimbergo (1999), who examined INS apprehensions of illegal immigrants over the 1963-1996 period. Because 99 percent of apprehensions occur along the Mexican border and 96 percent of those apprehended are Mexican nationals, the relevance of economic conditions in Mexico is central to the patterns they observed. After controlling for the amount of enforcement efforts by the INS, they found that the push factor of lower real wages in Mexico is more important statistically than the pull factor of higher real wages in the United States. A ten percent drop in real wages in Mexico results in a 6.4 percent to 8.7 percent increase in border apprehensions. The effect is an immediate
one, with lower wages resulting in higher apprehensions within one month. Higher real U.S. wages, expressed either in U.S. dollars or converted into pesos, also result in higher apprehensions, but the effects cannot be estimated as precisely as in the case of real Mexican wages. Their evidence supports the inference of a close linkage between the two labor markets, in spite of the existence of the border between them. It also suggests that greater U.S. imports of labor-intensive goods from Mexico will reduce the incentive for Mexican workers to migrate to the United States.

Changes in the U.S. Economic Structure

The introductory overview noted that within the U.S. economy the share of output accounted for by the manufacturing sector has fallen over time. The health of an economy does not rest on the size of any single sector, however. Consider the consequences of rising agricultural productivity, which has allowed agricultural output to rise impressively. Yet, the demand for additional agricultural output has not been sufficiently elastic to warrant expanding output as fast as productivity has increased. Instead, a major consequence of the productivity improvements has been a reduction in the relative price of agricultural goods, a benefit to consumers even though the expansion in output has been smaller and employment in the sector has fallen.

Some of those same principles are relevant in explaining trends in U.S. manufacturing production and output. A key difference, however, has been the large increase in demand for durable goods as their relative price has fallen. As a consequence, the secular decline in manufacturing employment has been much smaller than in the case of agriculture.

For nondurable goods, the expansion of demand has not been so pronounced, so that rising productivity has resulted in a larger fall in employment. Those distinctions are particularly relevant over the 1993-1998 period. The nominal value of consumer spending rose by 34 percent on services, by 24 percent on nondurable goods, and by 36 percent on durable goods. When deflated by price changes over the period, however, the corresponding changes in spending were 18 percent on services, 18 percent on nondurable goods, and 41 percent on durable goods (Council of Economic Advisers, 2000). This pattern implies that Americans increased the quantities of services and nondurable goods they consumed by the same percentage. Because services rose in price relative to nondurable goods, however, the income spent on services increased relative to that spent on nondurables. Consumer spending on durables rose, because the very large increase in the quantity bought more than offset the decline in price relative
NAFTA: the Economic Consequences for Mexico and the United States

to services. Whether consumers continue to make large expenditures on consumer durables, such as cars, trucks, home appliances, and computers, will be an important determinant of employment in these industries, too.

Changes in demand for domestic production depend significantly on changes in total consumption, but also on changes in net foreign demand. An important determinant of international trade, in turn, is the value of the real exchange rate. Compared to the previous cyclical peak in 1989, the U.S. dollar appreciated by 7 percent in real terms by 1999, not a surprising result when a large inflow of foreign funds bids up the value of the dollar. Consequently, foreign goods likely appear more competitive in the U.S. market.

Before assessing the influence of these various factors on U.S. production, first consider the industrial production series reported in Exhibit 5.2. They show that the total index rose significantly from the trough of the 1991 recession. With respect to specific industries included in the table, above-average growth occurred particularly in industrial machinery and electrical machinery, two areas that are significantly affected by the way output of semiconductors, telecommunications equipment, and computers are measured. Excluding those industries still leaves significant growth in real output for manufacturing as a whole, but the corresponding 1999 value would be 119 rather than 143. Therefore, the growth in manufacturing production should not be regarded as uniformly strong across all industries, when compared to the earlier 1979-89 cycle.

The experience of the textile and apparel sectors also warrants attention. Output in textiles rose, a result consistent with the growing capital-intensity of the industry discussed in Chapter 3. Apparel output also rose, and by 1995, it exceeded the previous peak in 1987, but output has sharply fallen since then. Thus, even before taking into account the effects of rising productivity, demand for labor can be predicted to fall in that industry.

Manufacturing employment rose roughly four percent over the 1993-98 period that covers the introduction of NAFTA. Because 1993 also represents a cyclical low point in employment, this recovery is a macroeconomic trend largely independent of NAFTA. Exhibit 5.3 shows that employment fell in most nondurable goods industries and rose in most durable good industries. Even if employment in manufacturing had fallen during the period, economists still would regard a benefit of trade liberalization to be the creation of jobs in sectors where labor was more efficient and the reduction of jobs in sectors where it was less efficient. There is no guarantee that the new jobs created will be in manufacturing, particularly with the growing number of service sectors that export.

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**Exhibit 5.3**

**Trade & Employment by SIC Industry**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Food And Kindred Products</td>
<td>-235</td>
<td>0.053</td>
<td>0.079</td>
<td>0.042</td>
<td>0.053</td>
<td>1.165</td>
<td>1.010</td>
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<td>Tobacco Products</td>
<td>-17</td>
<td>0.006</td>
<td>0.022</td>
<td>0.025</td>
<td>0.013</td>
<td>1.507</td>
<td>0.889</td>
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<tr>
<td>Textile Mill Products</td>
<td>420</td>
<td>0.019</td>
<td>0.080</td>
<td>0.087</td>
<td>0.112</td>
<td>1.090</td>
<td>0.881</td>
</tr>
<tr>
<td>Apparel And Other Products</td>
<td>-3,498</td>
<td>0.066</td>
<td>0.134</td>
<td>0.354</td>
<td>0.453</td>
<td>1.207</td>
<td>0.772</td>
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<tr>
<td>Textile Products</td>
<td>-203</td>
<td>0.034</td>
<td>0.028</td>
<td>0.099</td>
<td>0.123</td>
<td>1.252</td>
<td>1.148</td>
</tr>
<tr>
<td>Lumber &amp; Wood Products</td>
<td>2,197</td>
<td>0.028</td>
<td>0.030</td>
<td>0.097</td>
<td>0.140</td>
<td>1.264</td>
<td>0.790</td>
</tr>
<tr>
<td>Furniture And Fixtures</td>
<td>990</td>
<td>0.056</td>
<td>0.028</td>
<td>0.075</td>
<td>0.078</td>
<td>1.013</td>
<td>0.913</td>
</tr>
<tr>
<td>Paper And Allied Products</td>
<td>1,495</td>
<td>0.026</td>
<td>0.051</td>
<td>0.109</td>
<td>0.127</td>
<td>1.280</td>
<td>1.114</td>
</tr>
<tr>
<td>Printing And Publishing</td>
<td>-440</td>
<td>0.010</td>
<td>0.019</td>
<td>0.085</td>
<td>0.099</td>
<td>1.243</td>
<td>0.981</td>
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<tr>
<td>Chemicals And Allied Products</td>
<td>-372</td>
<td>0.054</td>
<td>0.078</td>
<td>0.163</td>
<td>0.222</td>
<td>1.375</td>
<td>1.050</td>
</tr>
<tr>
<td>Petroleum And Coal Products</td>
<td>-469</td>
<td>0.068</td>
<td>0.115</td>
<td>0.080</td>
<td>0.092</td>
<td>1.378</td>
<td>1.128</td>
</tr>
<tr>
<td>Rock &amp; Plastic Products</td>
<td>-1,968</td>
<td>0.027</td>
<td>0.063</td>
<td>0.274</td>
<td>0.298</td>
<td>1.655</td>
<td>1.143</td>
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<tr>
<td>Leather And Leather Products</td>
<td>-6,115</td>
<td>0.139</td>
<td>0.196</td>
<td>0.319</td>
<td>0.325</td>
<td>1.576</td>
<td>1.112</td>
</tr>
<tr>
<td>Stone, Clay, And Glass Products</td>
<td>-98</td>
<td>0.028</td>
<td>0.036</td>
<td>0.598</td>
<td>0.718</td>
<td>1.102</td>
<td>0.719</td>
</tr>
<tr>
<td>Primary Metal Industries</td>
<td>-307</td>
<td>0.054</td>
<td>0.078</td>
<td>0.163</td>
<td>0.222</td>
<td>1.375</td>
<td>1.050</td>
</tr>
<tr>
<td>Fabricated Metal Products</td>
<td>-28</td>
<td>0.015</td>
<td>0.023</td>
<td>0.126</td>
<td>0.206</td>
<td>1.136</td>
<td>0.978</td>
</tr>
<tr>
<td>Industrial Machinery</td>
<td>-1,554</td>
<td>0.065</td>
<td>0.106</td>
<td>0.173</td>
<td>0.212</td>
<td>1.217</td>
<td>0.979</td>
</tr>
<tr>
<td>Electronic And Electric Equipment</td>
<td>-8,307</td>
<td>0.071</td>
<td>0.140</td>
<td>0.280</td>
<td>0.300</td>
<td>1.375</td>
<td>1.191</td>
</tr>
<tr>
<td>Motor Vehicles And Equipment</td>
<td>-28</td>
<td>0.015</td>
<td>0.023</td>
<td>0.126</td>
<td>0.206</td>
<td>1.136</td>
<td>0.978</td>
</tr>
<tr>
<td>Other Transportation Equipment</td>
<td>-1,554</td>
<td>0.065</td>
<td>0.106</td>
<td>0.173</td>
<td>0.212</td>
<td>1.217</td>
<td>0.979</td>
</tr>
<tr>
<td>Instruments And Related Products</td>
<td>-510</td>
<td>0.025</td>
<td>0.036</td>
<td>0.430</td>
<td>0.465</td>
<td>1.415</td>
<td>1.038</td>
</tr>
<tr>
<td>Miscellaneous Manufacturing</td>
<td>-19,389</td>
<td>0.062</td>
<td>0.100</td>
<td>0.159</td>
<td>0.193</td>
<td>1.318</td>
<td>1.042</td>
</tr>
</tbody>
</table>

Source: Calculated from [http://www.bea.doc.gov/bea/nipa.htm](http://www.bea.doc.gov/bea/nipa.htm) for industry shipments and employment; [http://dataweb.niaus.gov](http://dataweb.niaus.gov) for exports and imports
Furthermore, with the U.S. economy operating close to full employment in 2000, an attempt to trace the aggregate labor market effects of trade liberalization or NAFTA will more appropriately focus on changes in real wages. Although unemployment has fallen and real wages have risen over the years that NAFTA has been in existence, such effects are primarily due to factors other than NAFTA, even though NAFTA may have contributed to both of them.

A less ambitious task than deriving an overall measure of the effect of NAFTA is considering instead whether the industries where NAFTA has allowed greater import growth already were facing difficult adjustment problems. Did rising imports from Mexico simply displace imports from other sources? Or did they add to total import penetration of markets where growth in output and employment already was stagnant or declining? Exhibit 5.3 shows the change in the bilateral trade balance with Mexico between 1993 and 1998 (in millions of dollars), the Mexican share of U.S. imports in 1993 and 1998, total U.S. imports as a share of apparent consumption in those same years, and the growth in apparent consumption and employment between 1993 and 1998. Although these comparisons are at a fairly high level of aggregation, they do give an indication of where the most severe employment losses may occur. The following steps provide a useful way of interpreting changes observed across the twenty 2-digit SIC industries.

First, note that, in spite of the deterioration of the overall U.S. trade balance and the bilateral balance with Mexico, the trade balance with Mexico in some industries did improve: textiles, paper, chemicals, petroleum products, and rubber and plastic products. For those industries, the export opportunities created by NAFTA contributed to greater demand for U.S. production, enough to offset the overall trend toward more rapid growth of imports than exports. NAFTA reduced the need for employment to contract in those industries.

To isolate further the effect of NAFTA on trade, controlling for the overall U.S. trade imbalance is warranted, as presented in Chapter 3. The results of that procedure are not shown in Exhibit 5.3, but it identifies four additional industries where the adjusted bilateral trade balance with Mexico was positive: food products, primary metals, fabricated metal products, and transportation equipment other than motor vehicles. In those industries, NAFTA concessions have not created additional pressures beyond those already caused by the overall shortfall of U.S. savings and reliance on foreigners to sell more and lend more to the United States.

Also worth noting is the fact that exports to Mexico grew faster than domestic shipments in 17 of the 20 industries shown. The only
exceptions are tobacco, lumber, and furniture. An expanding foreign market mitigates domestic adjustment pressures, even in those industries where imports also are growing rapidly.

Second, with respect to imports, note that in two industries, lumber and petroleum products, the growth in imports from Mexico was smaller than the growth in total imports, and the Mexican import share fell. Slower growth in imports from Mexico suggests that any preferential advantage provided by NAFTA liberalization was not particularly large. In nine industries, the Mexican share of imports was less than three percent in 1993. In addition to industries already mentioned because of their favorable trade balance (textiles, paper, chemicals, and rubber and plastic products), this group includes tobacco, leather products, industrial machinery, transportation equipment other than motor vehicles, and miscellaneous manufactures. A three percent import share is the de minimis standard in dumping cases, established in the Uruguay Round to indicate whether such imports were likely to be a cause of serious injury to the domestic industry. While there is nothing scientific about the number, it does signify that any increase in imports starts from a very small base. Even in the few industries where a large percentage increase in imports occurs, the small starting value means it is less likely to have a major impact on the domestic market.

In four other industries, the increase in the Mexican share of total U.S. imports was rather small, less than three percentage points (food; furniture; stone, clay and glass; and primary metals). Even if these relatively small changes were attributable to NAFTA, rolling them back would not be likely to have much effect on industry output and employment, because those changes generally represent less than one half of a percent of U.S. apparent consumption in the industry.

Of the remaining six industries, the import share of the market did expand, but employment actually rose over the 1993-98 period in printing and publishing, fabricated metal products, electronics and electrical machinery, and motor vehicles. For the latter three industries, strong growth in apparent consumption resulted in employment growing by more than ten percent. In printing and publishing, the increase in employment was 2.6 percent. Employment declined two percent in instruments and related products, but the major negative effect occurred in apparel, where employment fell by 17 percent. While such a rough exercise is not intended to imply that no adjustment issues arise in other industries or that NAFTA has had no effect on them, but it does indicate which industries were particularly influenced by expanded trade with Mexico and what adjustments they faced at the same time.
The information presented in Exhibit 5.3 suggests two additional inferences. The column that is most closely related to the growth in employment is the growth in apparent consumption. That is, strong domestic demand is a key determinant of growth in employment, because such a large share of the extra demand will be met by domestic production. Although some portion of that demand spills over into imports and some portion is offset by rising productivity domestically, those effects are not large enough to overturn the significant relationship between apparent consumption and employment. A simple regression shows that every one percent increase in apparent consumption yields a 0.4 percent increase in employment. Additionally, those industries where the greatest increase in the Mexican import share occurs are also those where the greatest increases in employment occurs. Such an outcome also suggests that rising apparent consumption has been a key common factor that promotes both domestic output and imports from Mexico. Over the 1993-98 period, this effect dominates any tendency of NAFTA concessions to cause imports to substitute for domestic production; if that substitution effect had been dominant, then a rising Mexican import share would have caused a decline in domestic employment in a simple regression framework.

Trade Adjustment Mechanisms

Given the adjustment pressures that governments predicted would arise and the actual adjustments that did arise, what sort of responses have governments made? In the negotiating process, nations tried to protect vulnerable sectors by stipulating longer phase-in periods, imposing strict rules of origin, and maintaining domestic content requirements. That strategy attempted to slow down the pace of displacements or perhaps avoid them altogether. In some cases, those goals were achieved, although there may have been a lower-cost way of achieving them. In other cases, substantial job losses and plant closings still occurred. In those cases, how have governments reacted? This portion of the study briefly considers government actions and programs.

One response is to assist those forced to adjust, through a program such as Trade Adjustment Assistance. How successful such a program is judged to be may depend upon the actual goal envisioned: to promote

\[13\] The percent change in U.S. employment was the dependent variable and the percent change in U.S. apparent consumption was the independent variable, both at the two-digit industry level. The t statistic for the independent variable was 3.17 and the coefficient of determination was 0.34.
adjustment out of a declining industry or to provide compensation even when workers are not able to find jobs elsewhere. Opponents of regional trade blocs fear an alternative response – namely, that countries will raise trade restrictions against nonmembers to offset the greater imports from members. Raising tariffs, as Mexico did in 1995 and 1997, helps reduce imports from nonmember countries. Because Mexico has the largest gap between the level at which its tariffs have been bound in multilateral trade negotiations and the actual level imposed on imports, it has the greatest potential to adopt this strategy without facing demands for compensation, or retaliation, from other countries.

Member countries also may rely upon antidumping duties to reduce imports from nonmembers. Because a country may apply its own trade law inappropriately in order to satisfy domestic political interests, NAFTA includes a dispute resolution procedure to allow a member to challenge the actions taken by another member. Nonmembers may lodge a complaint with the World Trade Organization. Effective resolution of disputes is an important condition for increasing confidence in either agreement.

Trade Adjustment Assistance is a program created in 1962 to assist workers who lost jobs because of trade concessions made in the Kennedy Round of multilateral trade negotiations. Because eligibility requirements were so strict (workers had to demonstrate that they lost jobs because of greater imports caused by tariff reductions), the program did not provide much assistance until it was modified in 1974. Workers still needed to demonstrate that imports were an important cause of their displacement, but the direct link to tariff concessions was no longer necessary. Under the new provisions, considerably more assistance was provided, but some displaced workers simply left the job market while others awaited recall into the industry where they previously worked. The latter response was particularly characteristic of the motor vehicle industry. Therefore, ensuring that workers made a successful transition from one job to another often was not achieved under TAA.

Special provisions were enacted to make TAA available to workers displaced by NAFTA. A Congressional Research Service (CRS) study by Bolle (1998) noted that 192,000 workers were certified to receive TAA benefits during the first four-and-a-half years of NAFTA's existence. Forty percent of the certifications occurred in two industries, apparel and electronics and electrical equipment. As noted above, between 1993 and 1998, production fell by 5 percent and employment fell by 23 percent in the apparel industry. Therefore, NAFTA adjustments came on top of other factors in an industry that already was declining. Strict rules of origin incorporated in NAFTA can be viewed as an attempt to slow this rate of
decline and particularly to provide an offsetting incentive to domestic textile producers, another industry where employment fell. Exhibit 5.3 shows that employment also declined substantially in leather products. Although the USITC identified women’s non-athletic footwear as an industry impacted by NAFTA, the large initial foreign share of the footwear markets suggests that NAFTA is as likely to cause a shift away from nonmember suppliers as it is to reduce U.S. employment.

In the case of electronics and electrical machinery, the overall period was one of growing output and employment. The CRS study suggested that this pattern reflected contraction in some portions of the industry that relocated to Mexico or Canada, but, at the same time, other portions of the industry expanded due to rising demand and exports. As shown in Exhibit 5.3, imports from Mexico were a small enough share of total imports, which, in turn, were a small enough share of apparent consumption, that in most industries NAFTA is unlikely to have substantially altered long-term trends in output and employment. Nevertheless, when there is a concentrated impact in industries that have older workers, or that operate in local labor markets where few alternative sources of employment exist, adjustment has typically proven difficult.

Trade policy intervention is another response to rising imports. While the United States, the European Union, Canada and Australia brought the vast majority of antidumping cases in the 1980s, in the 1990s, developing countries such as Mexico, Argentina and Brazil became active users of this policy instrument. Generally, small open economies are less likely to benefit from imposing antidumping duties, because the disadvantage faced by the penalized supplier often creates a bigger benefit for suppliers from other countries than it does for domestic producers. When countries join a regional trade bloc and liberalize trade only with respect to their regional partners, then cases brought against partner suppliers are less likely to create benefits for outsiders.

A study by Miranda, Torres and Ruiz (1998) assessed the use of antidumping provisions worldwide from 1987 to 1997. Over that period, the United States initiated 18 percent of all cases, and Mexico 9 percent. A major shift in Mexican usage of antidumping occurred in 1993, as the number of cases brought rose from 26 to 70, but in 1994, only 22 cases were initiated, and in the succeeding three years, the total was fourteen. The fact that the biggest jump predates the adoption of NAFTA suggests that the overvaluation of the peso in the early 1990s and the large unilateral liberalization taken by Mexico in the 1980s created pressures for government intervention quite independent from its eventual membership in NAFTA.
The United States is the second most frequent respondent in antidumping cases, after China. Almost half of the 188 cases brought against the United States were accounted for by Mexico (53) and Canada (42). Of the 93 definitive measures taken against U.S. producers, 30 percent were accounted for by Canada and 27 percent by Mexico. Thus, the fear that antidumping actions would lead to considerable trade diversion, because they would be disproportionately directed at nonmembers, has not occurred. While Mexico accounts for 27 percent of the negative determinations against the United States, it only accounts for 12.5 percent of U.S. exports. By this crude measure, antidumping actions appear to have an inward focus.

With respect to the industries most affected, U.S. complainants typically were from basic metals (46 percent), chemicals (14 percent), and machinery and electrical equipment (13 percent). In Mexico, cases typically involved basic metals (34 percent), chemicals (22 percent), textiles (11 percent) and plastics (9 percent). Specifically in the post-NAFTA period, Mexican producers have brought several chemical cases, and also agricultural cases involving apples, cattle, fresh and frozen beef, swine, and high fructose corn syrup. U.S. cases have primarily centered on steel, but also tomatoes and cattle. Although trade among NAFTA partners in several of these industries has risen, several other industries, where imports have risen more rapidly and the value of trade is much greater, have not turned to antidumping measures.

From Canada’s perspective, a major attraction of the Canada United States Free Trade Agreement was the establishment of a dispute resolution procedure to check the perceived arbitrary use of U.S. unfair trade laws against it. Parties who felt that unfair trade measures, such as antidumping or countervailing duties, had been inappropriately imposed against them could appeal to a bi-national panel. While the panel could not issue a separate ruling to be enforced by the importing country, it could remand a case for further consideration by the relevant national authority in cases where the nation’s stated trade remedy procedures were not followed. NAFTA created a similar mechanism, under Chapter 19 of the agreement, to apply to member complaints about unfair trade practices.

A GAO study presented to Congress by Hecker (1997) indicated that this procedure had operated effectively. She cited the informal functioning of committees and working groups that avoids many formal disputes. GAO interviews with trade officials in all three countries revealed that they were pleased with the professionalism of formal rulings by the bi-national panels that had been established. Little evidence of national bias
appeared, because most panel decisions were unanimous. The United States has challenged Mexican decisions in cases involving barriers on steel products and polystyrene crystals, while Mexico has challenged U.S. rulings on Portland cement, steel cookware, cut flowers, steel pipe, and leather wearing apparel.

U.S. concerns over a surge of imports from Mexico in sensitive industries led it to push for a special escape-clause relief or snapback provision to allow tariffs to return to their prior MFN level whenever a domestic industry is seriously injured. No allegation of unfair trade is necessary in such cases, but the burden of proof in demonstrating injury to the domestic industry is greater than in a dumping case. Also, any remedy recommended by the USITC is not automatically implemented, because safeguard provisions call for a presidential review to consider the economic and diplomatic consequences of the relief to be granted. In 1996, President Clinton granted relief to the corn broom industry, which was being injured by imports from Mexico and other Latin American countries. Because this industry only employed 400 workers, its direct political influence does not appear to explain this decision. Mexico challenged the decision under Chapter 20 of the dispute resolution procedures and retaliated against U.S. exports of paper, wine, flat glass, and bourbon. The bi-national panel ruled against the United States, and in December 1998, President Clinton announced that he was terminating the temporary duties on imports from Mexico because the domestic industry was not taking adequate efforts to adjust to import competition.

Trade in goods is not the only area where potential conflicts may arise. The slow progress in implementing any liberalization of provisions for cross-border trucking illustrates the potential pitfalls in closer economic integration. Although the interests of U.S. truckers in limiting lower wage competition is clear, concerns over safety and border inspection capabilities compound the U.S. position, as do Mexican concerns over the advantages held by U.S. competitors with newer fleets and better access to capital (USITC, 2000).

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14 Within the United States, a constitutional challenge to the whole dispute settlement procedure was raised, but was dismissed in 1998 on grounds that the complainant did not have legal standing to bring such a case. In particular, a complainant must show it has been injured by a binational panel decision and file an appeal within thirty days. The substance of any argument over NAFTA’s infringement on the sovereignty of U.S. agency decisions has yet to be addressed.
Recapitulation

NAFTA is one of many influences on the Mexican and U.S. economies, and therefore, it is important to recognize what general trends are occurring independent of NAFTA. The political acceptance of changes induced by NAFTA will depend importantly upon the scope of change that will occur even in the absence of NAFTA.

Within Mexico, the transformation of the agricultural sector will be accelerated by NAFTA, but the general decline in the relative importance of manufacturing will be partially offset by the opportunities that NAFTA provides to serve a wider North American market. That outward orientation will promote the further decentralization of the Mexican economy away from Mexico City to the north. Industries such as textiles and apparel, which have grown at a below-average rate in Mexico, have benefited from NAFTA provisions, as has the automotive sector, which has grown at an above-average rate. Basic metal production has also grown at an above-average rate, spurred by greater motor vehicle parts sales to the United States but also by expansion to serve other foreign markets and domestic opportunities.

Within the United States, manufacturing’s share of value added has continued to fall, but output has continued to rise. The rate of decline in manufacturing employment recorded in the 1980s has slowed in the 1990s. Based on an overview of the twenty 2-digit manufacturing industries for the post-NAFTA period, exports to Mexico in all industries but three (tobacco, lumber and furniture) have grown more rapidly than domestic shipments. The increase in exports exceeded the increase in imports in textiles, paper, chemicals, petroleum products, and rubber and plastic products. In three-quarters of the industries, the rise in imports from Mexico started from a small enough base or occurred on a small enough scale to limit adjustment pressures, generally to a fraction of a percent of industry demand.

Given the strong macroeconomic performance of the U.S. economy over the post-NAFTA period, and substantial growth in demand for durable goods, the U.S. motor vehicle and electrical machinery industries have experienced rising employment in spite of rapid growth in imports from Mexico. In fact, growth in domestic consumption has been a key factor determining industry employment in all industries. Because rising demand provides an incentive for greater imports as well as greater domestic production, the 1993-98 period even shows that industries where the Mexican import share increased the most tend to be industries where U.S. employment also grew the most. The most substantial rates of decline
in U.S. employment have occurred in apparel, leather and textiles. Only in the case of apparel is NAFTA an important contributor to the decline. As noted above, the textile trade balance with Mexico has improved under NAFTA, while bilateral trade in leather products has remained a very small share of total demand.

There has not been a substantial resort to either unfair ( antidumping ) or fair ( escape- clause relief ) trade laws in either country as a result of NAFTA. The industries where cases have been brought are not closely correlated with the industries where the greatest number of workers have been certified for trade adjustment assistance. For sensitive agricultural commodities, additional restrictions have been invoked. Nevertheless, government actions appear to be rather piecemeal, not sector-wide or pervasive in a way that would call into question a general trend toward trade liberalization or suggest a major diversion of trade away from nonmembers.
Chapter 6

Conclusions

From its inception in 1994, NAFTA has led to greater trade and investment between Mexico and the United States. Even after five year’s experience, the full response to the policy changes it promoted is unlikely to have occurred, especially in areas where trade restrictions and vestiges of industrial policy are being phased out over fifteen years. Any observations are still largely colored by general macroeconomic conditions in each economy. Nevertheless, clearer patterns are emerging that challenge the extremes of optimism and pessimism that characterized some early predictions.

Trade between the two countries has grown rapidly. Mexico’s importance as a market for exports and a supplier of imports to the United States has grown, surpassing Japan to become the second largest U.S. trade partner after Canada. The U.S. role as Mexico’s most important source of imports and market for exports has been further accentuated. The pattern of trade has not become a one-way flow of goods from Mexico to the United States, although strong U.S. growth and an excess of U.S. domestic investment over saving have led to large trade deficits with most trade partners, Mexico included. Controlling for this overall deterioration of the U.S. trade position, the U.S. bilateral trade balance with Mexico has even improved. That is particularly so as Mexico has regained access to international capital markets after the peso crisis of 1995, and the U.S. ability to export to it has risen sharply.

However, it is somewhat misleading to interpret the rapid growth in trade as a sign of deeper economic integration between the two countries. The growing importance of the Mexican export market to the United States is not so surprising, for example, because Mexican imports from all sources are rising as a share of world trade. Nevertheless, if NAFTA continues to provide a more open and predictable economic environment for U.S. and Mexican producers, and if they continue to benefit from preferential access to each other’s markets, then the extent of integration between the two economies is likely to become significantly greater. The incentives created by NAFTA may be reduced somewhat by more general trade liberalization being implemented under the Uruguay Round agreement and by Mexico’s aggressive strategy to negotiate free trade agreements with other partners, such the European Union and
possibly Japan. While the preferential position of U.S. suppliers may become less pronounced, continued implementation of economic reforms in Mexico will still promote cross-border trade and investment.

Although bilateral trade balances will depend upon macroeconomic factors quite independent of NAFTA, patterns of trade across industries have clearly been affected by NAFTA. Based upon the trade barriers that have been reduced or eliminated since 1993, and the pattern of comparative advantage in each country, economists expect U.S. exports to Mexico to grow in industries, such as machinery, that require skilled labor and capital. U.S. imports from Mexico are expected to grow most in industries that require unskilled labor. Those patterns generally are observed, although rising imports from Mexico cover a wider range of goods. In industries where Mexican exports to the United States grew most rapidly, however, that growth has been matched by rising exports to other foreign markets. This result is due to lower costs of production in Mexico, an outcome of rising Mexican efficiency and real depreciation of the peso. The fear that U.S. exports of capital goods to Mexico might suffer if less of the investment were controlled by U.S. firms has not been realized.

The benefits to the United States and Mexico of greater trade have generally not come at the expense of more-efficient nonmember countries. Instead, NAFTA has led to a more efficient worldwide allocation of resources. Economists predicted that, in certain industries, trade would be diverted from more-efficient nonmembers, in part the result of strict rules of origin. What has been the actual record in two industries often identified in that category — textiles and apparel and motor vehicles and parts? Mexican imports of textiles from the United States, and U.S. imports of apparel from Mexico, have both increased substantially, while the share of imports from East Asia has fallen. To the extent that those Asian suppliers must now accept a lower price for exports allowed by U.S. quotas, then a portion of the potential loss from trade diversion is borne by foreign suppliers. Even under a pessimistic interpretation — that Mexican efficiency did not improve to match more closely production costs elsewhere in the world — the loss from trade diversion would apply to a relatively small share of U.S.-Mexican trade. For example, apparel represented less than five percent of total U.S. imports from Mexico in 1993.

In the case of motor vehicles, economists predicted that firms from nonmembers who sought access to the protected Mexican market or hoped to export their Mexican production to the U.S. market would be discouraged from pursuing such a strategy by NAFTA content requirements. Another important restriction is that, until 2004, firms must produce vehicles in Mexico in order to import vehicles into Mexico. With
respect to existing producers, the popularity of VW’s New Beetle, only produced in Mexico, masks any deterrent effect of NAFTA rules of origin on sales with North America. On the other hand, the other major producer in Mexico, Nissan, operated at only 70 percent capacity in 2000. Despite their political significance, strict rules of origin have not been an important source of protection in U.S. auto trade, but may have hampered non-U.S. access to Mexico’s domestic market.

Since the inception of NAFTA, foreign direct investment has become a more important part of the Mexican economy. While part of that increase may be attributable to cyclical restrictions on the ability of domestic companies to raise capital, part is certainly due to the attraction of producing in an economy where the ground rules for FDI are much clearer and more inviting. Fewer performance requirements are imposed, the approval process is more straightforward, and the opportunities for majority-controlled operations are greater. A larger share of U.S. direct investment abroad has been located in Mexico. The share of FDI entering Mexico from the United States has declined, however, due to the rising importance of other countries as a source of investment. The U.S. investment that has occurred has become more oriented toward the service sector, an area where NAFTA provisions did create a special incentive for U.S. investment in various financial institutions. Within the manufacturing sector, U.S. investment has not been disproportionately centered on the textile and apparel or motor vehicle sectors where strict rules of origin or other Mexican trade barriers might have encouraged such investment. With respect to all foreign direct investment in Mexico, manufacturing’s relative importance rose after NAFTA came into effect, which suggests that members have accounted for a growing share of the FDI in Mexican manufacturing. In this regard, Mexican experience appears similar to Canada’s post-FTA experience.

NAFTA is one of many influences on the Mexican and U.S. economies, and therefore, it is important to recognize other trends occurring independent of NAFTA. The political acceptance of changes induced by NAFTA will depend importantly upon the scope of change that occurs even in the absence of NAFTA.

Within Mexico, transformation of the agricultural sector is accelerating under NAFTA, despite the imposition of safeguards to control the pace of change. The relative importance of manufacturing has been declining in Mexico since 1987, but that trend is being partially offset by opportunities to serve a wider North American market. That outward orientation promotes a process, already underway in Mexico, of decentralizing production away from a closed market based in Mexico City.
Industries such as textiles and apparel have benefited from NAFTA provisions, but nevertheless have grown at below-average rates. In contrast, the automotive sector has grown at an above-average rate. Basic metal production also has grown at an above-average rate, benefiting, in part, from the expansion of motor vehicle parts production, but also from greater sales to other foreign markets. As Mexican manufacturing output expands, rising wages in the northern states have led to industrial development further from the border, reducing the incentive to immigrate to the United States.

Within the United States, manufacturing’s share of value added has continued to fall, but output has continued to rise. The rate of decline in manufacturing employment recorded in the 1980s has slowed in the 1990s. NAFTA has resulted in stronger growth in exports to Mexico than in domestic shipments for U.S. manufacturers. U.S. bilateral trade balances have even improved in textiles, paper, chemicals, petroleum products, and rubber and plastic products. In most industries, imports from Mexico start from a small base or the increase in imports from Mexico represent a small share of total imports. Because imports from all sources, in turn, account for a small share of U.S. consumption, the change in Mexican imports generally represents a fraction of a percent of U.S. consumption. In key industries where the increase in imports from Mexico is more significant, such as motor vehicles and electrical machinery, strong macroeconomic performance of the U.S. economy and rising demand for consumer durables has meant that U.S. employment still has risen.

Which industries might demonstrate serious injury at a broad industry level? The most substantial rates of decline in employment have occurred in apparel, leather and textiles. Only in the case of apparel have NAFTA provisions been an important cause of additional adjustment. NAFTA rules of origin have promoted U.S. textile exports and increased the U.S. bilateral trade surplus in that industry, while the Mexican role in leather products continues to be small.

There has not been a substantial resort to either unfair (antidumping) or fair (escape-clause relief) trade laws in either country as a result of NAFTA. The industries where cases have been brought are not very closely correlated with the industries where the greatest number of workers have been certified for trade adjustment assistance. Government actions appear to be rather piecemeal, not sector-wide or pervasive in a way that would call into question a general trend toward trade liberalization or suggest a major diversion of trade away from nonmembers.

NAFTA has been successful in promoting trade and investment that encourages greater efficiency in both countries and the world as a whole.
whole. Exceptions exist, but they do not represent the dominant effects of the agreement. Liberalization has not led to major displacements in most U.S. industries. Where they have occurred, strong macroeconomic growth, low unemployment, and rising real wages have generally meant that the severity of adjustment costs in declining industries was not compounded by NAFTA-induced changes.
Appendix

Ways of Assessing Preferential Trade Agreements

This appendix illustrates three different variations of a basic model to demonstrate the effects of preferential trade liberalization. The first case, shown in Exhibit A.1, is based upon the work of Jacob Viner (1950), who originated the terms “trade creation” and “trade diversion” to characterize the outcomes of such agreements. To interpret this diagram, recognize

Exhibit A.1

that the difference between the United States’ demand for a good ($D_{US}$) and its supply of the good ($S_{US}$) determines the U.S. demand for imports of that good. Because the United States levies a tariff on imports of the good, the initial level of imports is $M_1M_2$ at price $P_3$, and the source of those imports is from a nonmember country. When a preferential trade agreement is established, however, the partner country no longer is subject to the tariff, and it become the cheapest source of imports. Because price declines from $P_3$ to $P_2$, the quantity of the good demanded increases to $OM_4$ while domestic producers reduce the quantity they supply to $OM_3$. The new, higher quantity of imports is $M_3M_4$. The pattern of trade changes sharply, as imports from nonmember countries are eliminated. The partner shifts from
being able to sell nothing in the U.S. market to being the sole foreign supplier.

U.S. consumers gain from the reduction in price, which can be measured by the areas $\tilde{a} + \tilde{b} + \tilde{c} + \tilde{d}$. Profits of U.S. producers fall by area $\tilde{a}$, and the U.S. government gives up tariff revenue of $\tilde{c} + \tilde{e}$. The net effect depends upon whether the efficiency gains from trade creation, $\tilde{b} + \tilde{d}$, exceed the loss from trade diversion, $\tilde{c}$. The larger the difference in cost between partner and nonmember producers, the more likely that the loss from trade diversion will dominate. This focus on two offsetting effects in the importing country also captures the effect on the world as a whole if price equals marginal cost and both the partner and the nonmember have infinitely elastic supply curves. Under those circumstances, the profits of producers elsewhere in the world do not change when the trade bloc is formed.

Another possible representation of the consequences of a preferential trade agreement recognizes that the partner may hold some share of the import market initially, but its elasticity of supply may be finite and limit the amount it is able to supply at the world price. Papers that explain this approach are Learner (1993) and Panagariya (1999). As shown in Exhibit A.2, total imports initially are $OM_1$, with $OM_3$ coming from the partner and $M_3M_1$ coming from the nonmember. When the partner no longer must pay the U.S. tariff, imports from the partner rise to $OM_2$ and imports from the nonmember fall to $M_3M_1$. Because the price in the United States does not change, U.S. consumers gain nothing, and U.S. producers are unaffected. The U.S. government, however, loses tariff revenue of $\tilde{a} + \tilde{b} + \tilde{c}$. From the U.S. perspective, only trade diversion occurs, not trade creation. Profits of partner producers rise by $\tilde{a} + \tilde{b}$. Again, nonmembers lose sales in the United States, but the profits of those producers are not affected if the constant world price equals marginal cost.

In this setting, the United States loss in tariff revenue from imported products may be partially offset by greater profits of U.S. exporters to Mexico. If Mexico has a much higher initial tariff rate, it is more likely to lose from trade diversion. Regardless of the division of profit gains and tariff revenue losses among members of the trade bloc, the combined net effect for the two countries is a loss in efficiency, as trade is diverted away from nonmembers who are the most efficient source.
The case shown in Exhibit A.2 of a finite supply curve for member countries and an infinitely elastic curve for the rest of the world supply may be most appropriate when the countries joining together are small and face constraints in expanding output. Other conditions may be appropriate, however. If the partner country's supply is more elastic than the rest of the world's supply, then the preferential trade agreement will result in a greater reduction in price to U.S. consumers and more benefit from trade creation. Partner producers again experience a gain in profitability, whereas the shift in demand away from nonmember countries results in a loss in profit to them. In such a situation, the trade bloc may gain at the expense of nonmembers, a key example of why the loss from diverting trade away from more efficient sources may not be confined to the member country.

Countries may impose trade barriers other than tariffs. Exhibit A.3 shows the case of a quota on U.S. imports in addition to a tariff. The left panel shows the U.S. demand curve for imports from all sources and the supply curve from Mexico, both with and without a tariff imposed. The demand curve in the right panel represents a residual measure of the demand that will face nonmember suppliers after the quantity supplied by Mexico has been subtracted from the total quantity of imports demanded. Before NAFTA was formed, imports from Mexico were $OM_1$ and imports from nonmembers were $M_1 M_2$. The effect of NAFTA's creation is to shift inward the residual demand curve facing nonmembers to $D_1$. Imports from Mexico
rise from OM₁ to OM₃, and trade creation that benefits the United States occurs. Imports from nonmembers remain fixed, as shown by the vertical supply constraint in the right panel, which means that M₁M₂ equals M₃M₄ in the left panel. In contrast to the situation shown in Figure 2, the price to U.S. consumers falls from P₀ to P₁. Although the quantity sold by nonmembers is not affected, the profits of nonmembers fall in the case where they captured the tariff equivalent of the quota. Production has not been diverted from a more efficient source, but nonmembers still feel a loss from what can also be called trade diversion. If the expansion in partner supply is sufficiently large, the quota facing nonmembers may no longer be binding, and the trade effects will be similar to those shown in Exhibit 2.

**Exhibit A.3**

Note that all of these examples apply to a static world where no growth in member or nonmember economies occurs. If economies grow for reasons quite independent of the trade policy change, then the appropriate counterfactual question is to ask how observed imports after the bloc’s formation differ from what they would have been in the absence of the bloc. Simply looking for a decline in the value of trade with nonmembers would no longer be an appropriate measure of the extent of trade diversion.
Bibliography


