

Rice University's Baker Institute for Public Policy

INTERNATIONAL ECONOMICS

México center

Rice University's Baker Institute for Public Policy



WAS NAFTA GOOD FOR THE UNITED STATES?

Russell A. Green, Ph.D.

Will Clayton Fellow in International Economics

Tony Payan, Ph.D.

Françoise and Edward Djerejian Fellow for Mexico Studies and Director, Mexico Center

June 2017

© 2017 by the James A. Baker III Institute for Public Policy of Rice University

This material may be quoted or reproduced without prior permission, provided appropriate credit is given to the author(s) and the James A. Baker III Institute for Public Policy.

Wherever feasible, papers are reviewed by outside experts before they are released. However, the research and views expressed in this paper are those of the individual researcher(s) and do not necessarily represent the views of the James A. Baker III Institute for Public Policy.

Russell A. Green, Ph.D.

Tony Payan, Ph.D.

“Was NAFTA Good for the United States?”

Executive Summary

NAFTA is among the most scrutinized trade deals ever implemented, both because of the size of the North American region it encompasses and because it was a landmark deal that set the framework for much subsequent bilateral and multilateral trade policy throughout the world. Most previous reviews of NAFTA's impact aimed to inform decisions about further liberalization, based on the assumption that NAFTA would remain intact. This study is the first to review the economic and geostrategic evidence to help from the angle of determining whether NAFTA should be preserved at all.

Since NAFTA was ratified, U.S.-Mexico trade—excluding services and petroleum, which are not addressed by NAFTA—has grown three and a half times faster than U.S. GDP. The United States ran a small trade surplus with Mexico in 1993; today, the U.S.-Mexico trade deficit is America's second largest. If NAFTA were solely responsible for all that trade, it might appear that renegotiating it to obtain more favorable terms for the United States would have big payoffs, and that repealing it might improve the U.S. deficit.

However, the economic evidence shows that the tariff reductions included in NAFTA did not cause major changes to trade. At best, 25% of current U.S.-Mexico trade is due to NAFTA tariff reductions. Of course, at \$125 billion, that is still a substantial sum. Indeed, for segments of certain industries—mostly in agriculture, electronics, and autos—or for particular localities like Texas, adjusting NAFTA tariffs could have a substantive impact. Importantly, though, every study done on the topic has found that NAFTA boosted U.S. exports more than Mexico's. Hence, as a means for the United States to raise aggregate GDP, boost manufacturing employment, or address the trade deficit, renegotiating NAFTA holds little potential.

The biggest impacts of NAFTA appear to be the hardest to measure. NAFTA locked in reforms in Mexico that had been in process since the 1980s and included tariff reductions and investment climate improvements. Once NAFTA reduced the risk of liberalization being reversed, firms were more willing to invest in order to take advantage of cross-border opportunities. As a result, Mexico has become a manufacturing hub for firms across the globe looking to sell into the U.S. market. Now that Mexico is a familiar location for many multinational firms, its attractiveness to investors no longer depends on NAFTA.

Another important impact of NAFTA derives from the trust dividend that it has produced among all three nations—Canada, the United States, and Mexico. Greater trust has enabled the U.S. to pursue its political, diplomatic, and security interests in its own neighborhood with considerably less resistance than before NAFTA. By consolidating Mexico's economic position as being complementary to that of Canada and the U.S., and by adding momentum to continue Mexico's move toward a full democracy, the treaty helped align Mexico's interests with those of the U.S. and Canada, as opposed to Latin America. Mexico has been increasingly open to collaboration with the U.S. on security issues, especially undocumented migration and organized crime.

This last impact of NAFTA is arguably the most at risk of reversal in the process of reexamining the future of NAFTA. Mexico sits on the cusp of a political turning point, and NAFTA is even more politically fraught in Mexico than in the United States. As the U.S., Mexico, and Canada enter into negotiations over revising NAFTA, the United States should tread carefully. There is room for win-win improvements in the treaty, the details of which lie outside the scope of this paper. However, the gains achievable even through a radical revision of NAFTA are not large.

Introduction

With the United States, Mexico, and Canada preparing to reenter negotiations, the door has been thrown wide open on the landmark North American Free Trade Agreement (NAFTA), the largest U.S. trade agreement by share of U.S. trade. The U.S. needs to know what is at stake when considering its bargaining positions. Yet after 23 years of free trade in North America, debate remains about NAFTA's impact on the U.S. In fact, perhaps because of its historical significance, no existing trade agreement has received more scrutiny. From its inception, NAFTA was heavily criticized as unfavorable to American workers. Others saw it as harmful to Mexico. They feared small and medium-sized businesses, especially in agriculture, could not compete, and that multinationals would abuse more lax standards in Mexico for labor, the environment, and governance.

This policy paper focuses on the impact of NAFTA in the U.S., asking whether the benefits outweigh the costs. Our assessment is that this is a very difficult question to answer with any certainty. Anyone stating that NAFTA was definitively good or bad is looking at only part of the evidence. Research on NAFTA abounds with suggestive findings, but most of it has very little power to detect the impact accurately. Just as it would be difficult to measure the propulsion of a propeller during a storm, the 1994 peso crisis, pre-NAFTA liberalization, the ascension of the Chinese export engine, post-9/11 border measures, and many other factors distort the readings we have on the impact of NAFTA.

NAFTA, for most practical purposes, only changed policy for U.S.-Mexico trade. There was not much room for NAFTA to improve on the U.S.-Canada Free Trade Agreement of 1989, and trade between Canada and Mexico remains small.¹ According to the Congressional Research Service, "at the time that NAFTA went into effect, about 40% of U.S. imports from Mexico entered duty-free and the remainder faced duties of up to 35%, with a trade-weighted average rate of about 7%. Mexico's trade-weighted tariff on U.S. agricultural products averaged about 11%" (Villareal and Fergusson 2015, 5). Most of these tariffs and most nontariff barriers were gradually eliminated by 2008. For this reason, the paper focuses on the U.S.-Mexico trade relationship.

Three important points have come to light from the trade debate that received far too little notice, and the experience of NAFTA speaks to each. First, a small net number can disguise large gross impacts. Second, cross-border supply chains make trade symbiotic rather than competitive in nature. Third, unexpected effects can and do arise that upend earlier forecasts of the treaty's impact.

We review the evidence at the macro-level on trade and investment flows, which have implications for aggregate GDP. We also examine the micro-level of specific industries and labor markets, which impacts income distribution. NAFTA further influenced Mexico in ways that feed back into the U.S., so we discuss the evidence on migration and Mexico's political system. Both have important implications for critical areas of Mexico's broader relationship with the United States.

1. Trade, Investment, and Growth

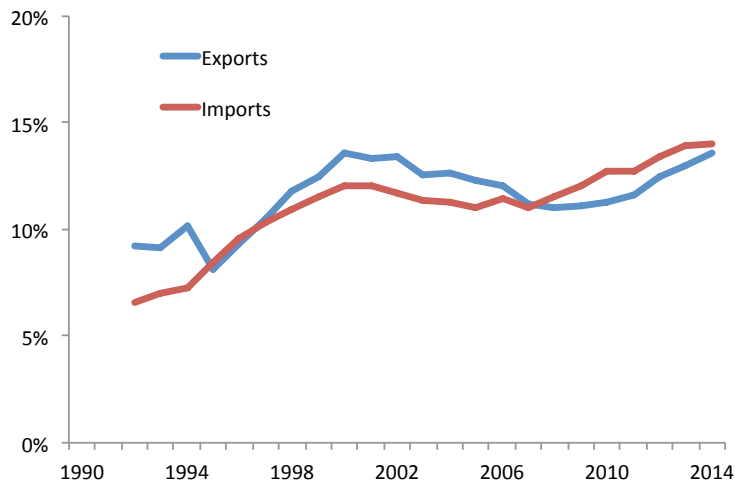
Macroeconomic implications of NAFTA typically center on the impact on trade and GDP. Investment flows are another important macroeconomic factor that trade agreements can shape both by liberalizing investment and by reducing the risk of cross-border transactions. By shaping investment flows, agreements change trade and employment patterns, so the investment impact deserves attention despite being more difficult to pin down.

Trade Volumes

Regarding impact on trade, most descriptions of NAFTA begin by citing the huge increase in bilateral trade between the United States, Canada, and Mexico since 1993. There are several problems with attributing any significance to these statistics.

First, trade volumes ballooned all around the world during that time—not just among NAFTA countries—growing much faster than GDP. Trade between NAFTA countries grew faster than the NAFTA countries’ trade with other countries (see Figure 1). Standard trade models expect that pattern, not because of NAFTA, but because its members are geographically closer to each other than any other trading partners. Trade is typically facilitated by lower transportation costs and greater familiarity (Lederman, Maloney, and Serven 2005). Interestingly, Figure 1 shows most of Mexico’s gains in U.S. trade share stalled after 2000.

Figure 1. Mexico Share of Total U.S. Exports and Imports



Note: Trade data exclude services and petroleum products.
Sources: UN Comtrade and authors’ calculations.

Adding to the rising trend in global trade has been a global upswelling of supply chain trade. North-south supply chains expanded as they became much more practical in the 1990s. Security concerns declined in low-wage countries in the post-Cold War era, transportation costs fell rapidly, and improvements in communications and information technology facilitated management of extensive cross-border supplier networks. The main point is that supply chain trade expanded in Europe, Asia, and North America in the post-NAFTA period mostly in response to factors other than trade policy changes.

That is not to say NAFTA had no effect on supply chain trade. One of the few studies on the impact of NAFTA on trade that incorporates supply chains found much higher impacts from NAFTA than previous studies (Caliendo and Parro 2015). In that study, supply chains accounted for 25% of NAFTA’s impact on Mexico’s imports and 33% of NAFTA’s impact on U.S. imports.²

Trade in intermediate goods (goods meant to feed into the production of a final good) is a commonly used measure of cross-border supply chain integration.³ Typically, advanced economies send components to emerging economies for finishing (Baldwin 2013). Indeed, 73% of U.S. exports to Mexico consist of intermediate goods (Figure 2). Adding in goods that are commonly used for both intermediate and final consumption purposes—e.g., personal computers—the share rises to 77%.

Figure 2. Intermediate Goods as a Share of U.S. Exports to Mexico, 1991–2016

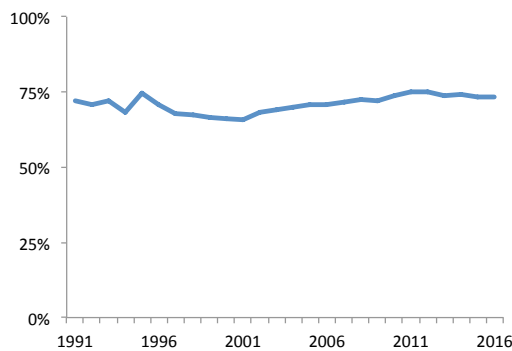
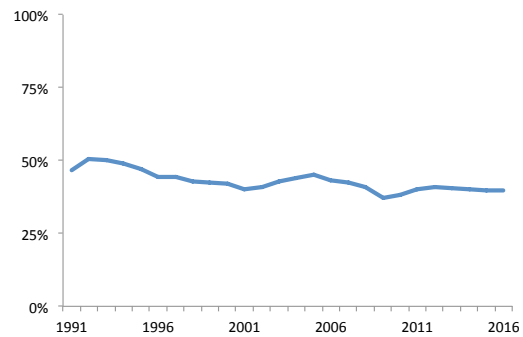


Figure 3. Intermediate Goods as a Share of Mexico Exports to the U.S., 1991–2016



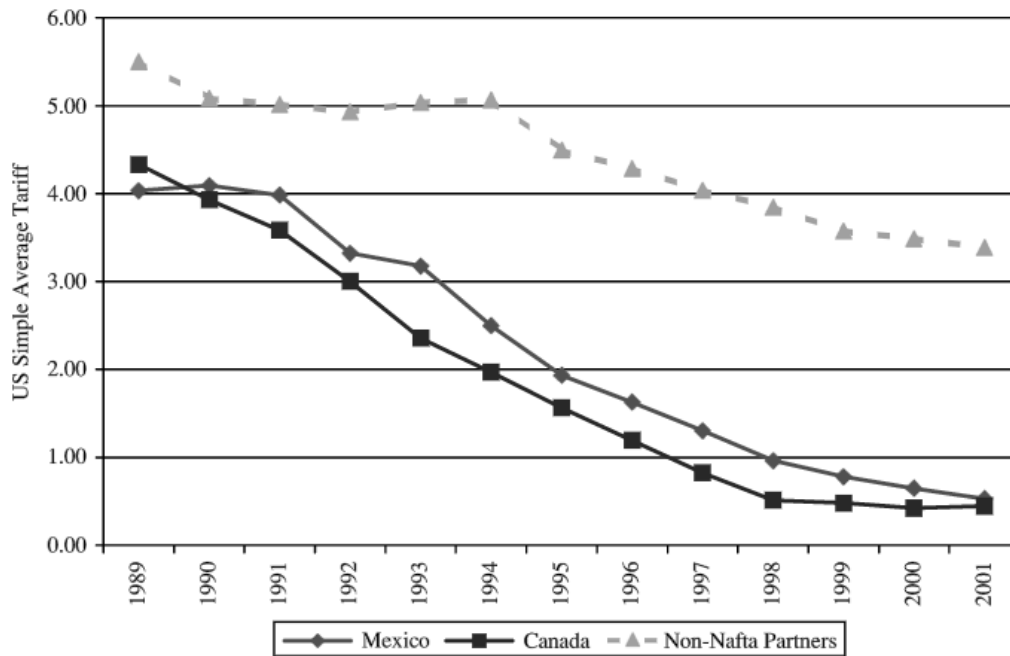
Note: Trade data exclude services and petroleum products. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS92 codes, applied to UN Comtrade data. Sources: OECD Bilateral Trade Database, UN Comtrade.

The share of intermediate goods imported from Mexico is lower, at 40% (Figure 3). Combining that with mixed-use goods raises the share to 55%. This is a remarkably high share given the typical pattern of north-south trade mentioned above. Indeed, using different measures, the share of intermediate good trade has equalized between the U.S. and Mexico (López González 2012).

While supply chain trade may be an important channel for NAFTA’s impact on the trade and the economy, it would be hard to argue that NAFTA disproportionately enabled the development of supply chain trade itself. The supply chain measure displayed in Figure 2 and Figure 3—the share of intermediate goods in total trade—shows no increase in the share of supply chain trade after NAFTA’s enactment. If anything, non-supply chain trade grew faster.

Second, Mexico had undergone significant liberalization prior to NAFTA, and both countries had been lowering tariffs (McDaniel and Agama 2003). Indeed, the trend in U.S. tariffs indicates that Mexico experienced a faster decline in tariff preference in the U.S. before NAFTA than after (Figure 4). The largest drops in Mexican tariff preference—preferential treatment for Mexican goods relative to goods from other economies—occurred from 1991 to 1995. While NAFTA tariff reductions continued to be phased in until 2009, reductions in tariffs for non-NAFTA countries beginning in 1995 approximately matched NAFTA reductions.⁴

Figure 4. U.S. Tariffs for Mexico, Canada, and Non-NAFTA Partners



Source: McDaniel and Agama 2003.

Complementing the tariff evidence, Zylkin (2016) finds that including the general trend of U.S.-Mexico trade from 1990 in their econometric study greatly diminishes the measurable impact of NAFTA on trade. Zylkin’s interpretation is that reforms in Mexico were already propelling the bilateral trade relationship forward, which NAFTA mostly served to lock in and supplement.

Third, trade statistics involve double counting whenever trade involves significant amounts of intermediate goods.⁵ Trade statistics capture the full value of the traded good, not just the value added by the exporting country. If production took place in more than one country, double counting occurs (Koopman et al. 2010). Hence, supply chain trade inflates trade volumes without inherently changing the amount of final goods consumed.

Fourth, trade agreements may simply shift trade away from other countries toward member countries that now have lower barriers. This is not a net creation of trade, but rather what economists call trade diversion. The econometric evidence on NAFTA is mixed, with the strongest evidence of diversion occurring in the apparel sector discussed in Section 2 (Lederman, Maloney, and Serven 2005). It is possible that growing trade among NAFTA members did not imply total trade growth across all U.S. trade partners.

To measure the impact of NAFTA, we need a way to disentangle these other trends. Many studies have tried to do this—and many counterintuitively found no NAFTA effect on trade. The three most recent studies represent advances in methodology that stand out above the rest, and they find a modest positive impact of NAFTA on trade.⁶

The first two studies apply modern general equilibrium models. Romalis (2007) looks at data through 1999 and finds 10% of U.S.-Mexico trade in that year can be attributed to NAFTA. Caliendo and Parro (2015) find stronger effects looking at data through 2005. They attribute 41% of U.S. exports to Mexico to NAFTA, and 26% of U.S. imports from Mexico. The big increase in their results derives from a model that fully incorporates intermediate goods in supply chains. With supply chains, a tariff applied to an early-stage import cascades through further production stages. Finally, a working paper by Zylkin (2016) applies the workhorse gravity model, but with recently developed improvements. His results attribute 19% of U.S. exports to Mexico through 2002 to NAFTA, and 4% of trade in the other direction.

To summarize across a range of estimates, it is reasonable to say that NAFTA may be responsible for roughly 25% of U.S.-Mexico trade. This is substantial, but far less than most casual discussions of NAFTA would imply.

Notably, for the studies reported here and other studies, if the researchers found an effect of NAFTA, universally the effect was much larger for U.S. exports than for Mexico's exports. These results suggest that other factors like the exchange rate, economic growth, and pressure on firms to establish cross-border supply chains deserve the preponderance of credit for U.S.-Mexico trade growth, but especially for the growth of Mexico's exports. This has important implications for the next section on trade deficits.

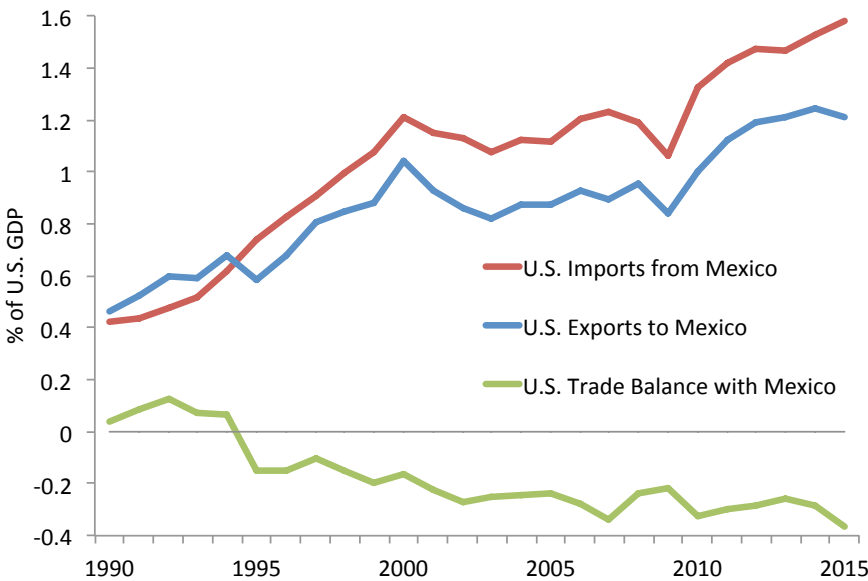
Trade Deficits

Related to a discussion of trade volumes is a discussion of trade deficits. Critics rightly point to the shift in competitiveness in favor of Mexico following NAFTA. Prices of U.S. imports from Mexico fell significantly more after NAFTA than prices of U.S. imports of similar goods from non-NAFTA countries—much more, in fact, than the fall in tariffs. This suggests closer

economic integration with the U.S. allowed Mexico’s exporters “to achieve cost-reducing economies of scale by improving the suitability of their products for the U.S. market, thereby increasing export volumes” (Rimmer and Dixon 2015, 4). The bottom line is that NAFTA improved Mexico’s competitiveness beyond the direct impact of tariff reductions. It also impacted Mexico beneficially on other scores, which will be discussed below.

Another key element of a bilateral trade deficit, however, is demand. During the NAFTA period, Mexican demand for U.S. goods was decimated from the start by the peso crisis in December 1994, while U.S. demand for Mexican goods remained strong. This can be seen in Figure 5 in the one-time large drop in the trade balance in 1995.⁷ The dollar has since appreciated further, going from MX\$13 to a dollar in 2014 to MX\$22 to a dollar in early 2017, fueling greater demand for Mexican goods in the U.S. and depressing demand for U.S. goods in Mexico. The peso has since strengthened, but it remains around MX\$18.50 to a dollar. Moreover, for various reasons, including the deepening linkages between the two economies, the Mexican economy has not grown much faster than the U.S. economy, and consequently, there has been no opportunity to re-equilibrate relative demand. As a result, the U.S. trade deficit with Mexico has remained fairly constant and close to zero, dropping by only 0.2% of GDP across the next 20 years. Studies have been able to identify virtually no impact of NAFTA on the bilateral trade deficit (Congressional Budget Office 2016).

Figure 5. U.S.-Mexico Trade as a Share of U.S. GDP

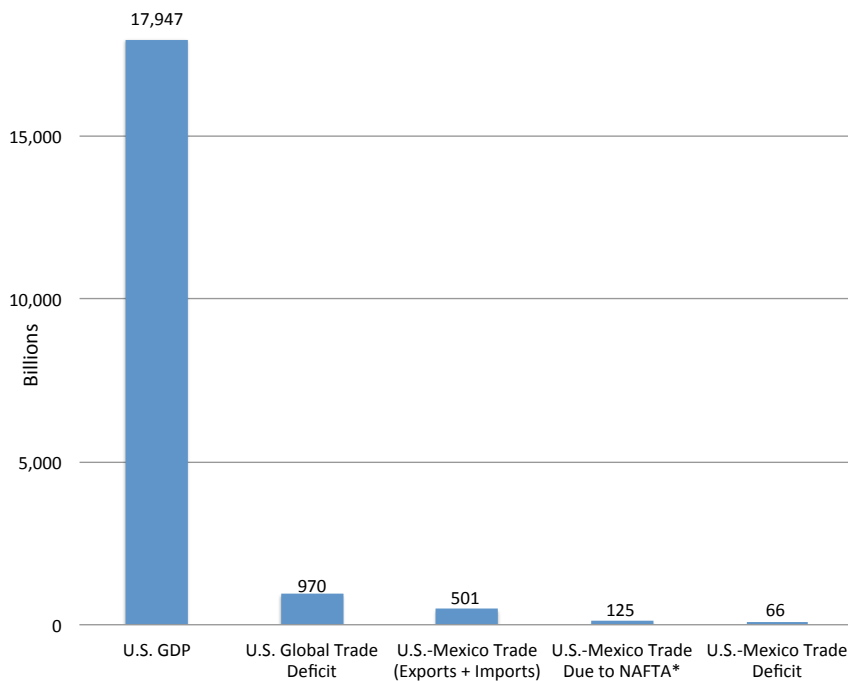


Note: Trade data exclude services and petroleum products.
Sources: UN Comtrade and U.S. Bureau of Economic Analysis.

Overall, the econometric evidence in the previous section indicates the forces on the trade deficit that are attributable to NAFTA pushed more in favor of the U.S. This makes sense, considering Mexico made bigger tariff reductions than the U.S. The shift of the trade deficit against the U.S. after NAFTA appears to be driven by coincident non-NAFTA factors like the peso crisis, relative economic growth, and competitive pressure to develop north-south supply chains.

If NAFTA is responsible for roughly 25% of total U.S.-Mexico trade, that amounts to \$133 billion or 0.7% of GDP. The evidence discussed above suggests that NAFTA boosted U.S. exports more than Mexico's—but, ignoring that, a back-of-the-envelope scenario demonstrates that if NAFTA reduced the U.S.-Mexico trade deficit by 25%, that would be \$15 billion, or a reduction of the total U.S. trade deficit by 0.1% of GDP. Therefore, even assuming NAFTA could reduce the bilateral deficit proportionally to its rough impact on bilateral trade, it would make almost no difference on the aggregate U.S. trade deficit.

Figure 6. NAFTA Trade Volumes in Context, 2015



*Assumes NAFTA is responsible for 25% of U.S.-Mexico trade.

Note: Trade data exclude services and petroleum products.

Sources: FRED, UN Comtrade, and authors' calculations.

Investment Flows

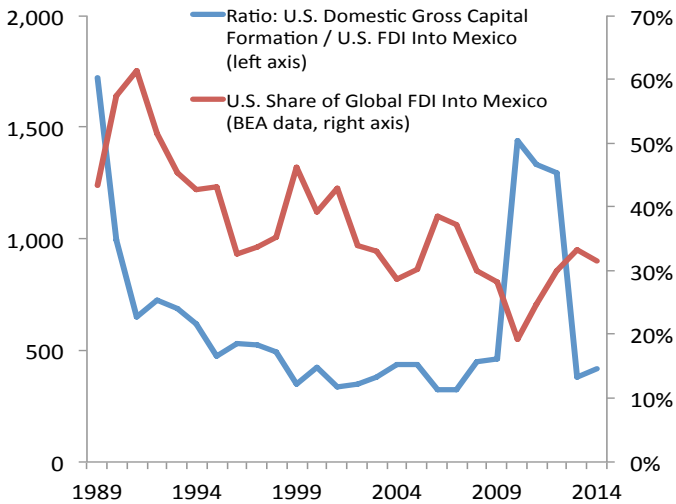
Cross-border investment benefited from NAFTA in several ways. Most directly, the Mexican government agreed to allow investment in certain fields that had previously been precluded, like banking and retail trade. By reducing tariffs on imports into the U.S., NAFTA made it more profitable to relocate to Mexico and sell to the U.S.

Perhaps most importantly, NAFTA reduced the risk of investment. It included provisions for basic protections for foreign investors, provided a mechanism for investor-state dispute settlement (ISDS), and provided for “non-discriminatory treatment” for foreign investment in certain sectors. It included protection of intellectual property, which allows a firm to develop a supply chain with affiliates without risk of theft of proprietary technology.

Also, locking in earlier Mexican liberalizations and eliminating the discretion to increase barriers to trade or investment in the future—by the U.S. or Mexico—reduced investment risk. Country risk in Mexico is rooted primarily in domestic variables, including low public revenue, weaknesses in its infrastructure and education systems, corruption, and high crime rates, while its strengths are directly derived from membership in NAFTA as well as the Organisation for Economic Co-operation and Development (OECD), the G-20, and the Pacific Alliance, all of which give foreign investment a high degree of predictability. Both of these factors—lower trade barriers and a more supportive investment environment—benefited investment in Mexico by firms from third countries just as much as by firms from the U.S. or Canada. Indeed, a good share of the competition U.S. manufacturers faced from Mexico was not from U.S. firms that moved south. Rather, the largest share of foreign direct investment (FDI) due to NAFTA reflected investment by third-party countries, whose manufacturers saw advantages to re-locating inside the NAFTA area (Adams et al. 2003). This effect has been amplified since NAFTA by Mexico signing free trade agreements with more countries. It now has agreements with 45 countries compared to 20 in the United States.

NAFTA therefore deserves credit for 25–30% of the doubling in cross-border investment into Mexico through 1999 (Cuevas, Messmacher, and Werner 2005). Nonetheless, the magnitude of cross-border flows remains much smaller than the public imagines. To put it in perspective, U.S. domestic gross capital formation remained over 300 times larger than U.S. FDI into Mexico at its peak before the global financial crisis of 2008–9 (Figure 7). From Mexico’s viewpoint, however, cross-border flows are large, representing an average of one-third of all incoming FDI in the post-NAFTA period.

Figure 7. Metrics of U.S. FDI into Mexico, Three-year Moving Average



Sources: U.S. Bureau of Economic Analysis, International Monetary Fund, and authors' calculations.

Variety

It is important to note that trade depth and economic integration are not intrinsically valuable, as exemplified by the double-counting and trade diversion discussions above. Trade growth can provide intrinsic value when it generates a greater variety of goods available. Studies have found that 6–8% of U.S. post-NAFTA export growth to Mexico represented goods never exported to Mexico before (Hillberry and McDaniel 2002; Kehoe and Ruhl 2013). Goods in the information technology field typify new U.S. exports. This compares to almost no growth of new goods among U.S. exports to non-NAFTA countries (Hillberry and McDaniel 2002).

At the same time, between 9% and 24% of Mexican post-NAFTA exports to the U.S. came from new goods, almost triple the growth rate to non-NAFTA countries (Hillberry and McDaniel 2002; Kehoe and Ruhl 2013). This is a tangible benefit. But most NAFTA trade involved greater efficiency or lower prices for largely the same goods. In this case, the relevant metric is real incomes—i.e., purchasing power.

GDP

So if real income is the best measure of the impact of a trade pact, what was the impact of NAFTA on real U.S. GDP? Close to zero. Two U.S. government studies done at the 10-year mark found the impact after 10 years to be less than a 1% increase (CBO 2003; United States International Trade Commission 2003). Another study estimates “welfare gains” (roughly equivalent to real income growth) to the U.S. of approximately the same magnitude (Caliendo and Parro 2015).

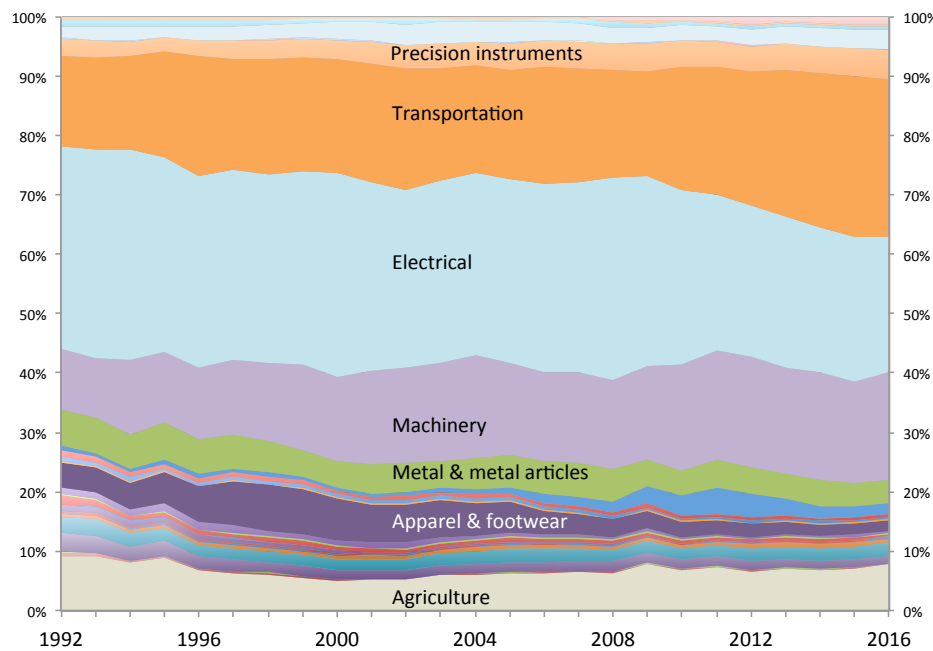
Partly, this relates to the fact that U.S.-Mexico trade was small compared to the overall U.S. economy to begin with; exports plus imports were 1.4% of GDP in 1994. By 2015, it was 3.0% of GDP (Figure 6). On the other hand, for every dollar of trade in 1993, NAFTA generated 50 cents of GDP gain. While this comparison is an awkward mix of economic concepts, it is suggestive that NAFTA delivered an impressively high return.⁸

2. Industry-level Impact

The industries with the largest presence in bilateral U.S.-Mexican trade can be seen in Figures 8 and 9. Transportation, electronics, and machinery flow in large quantities in both directions, although the U.S. imports a higher share of these goods than it exports. The U.S. dominates in chemicals and plastics, which have expanded in the NAFTA period.⁹ There are many ways to measure NAFTA’s impact on specific industries. Caliendo and Parro (2015) compare growth of exports to Mexico against U.S. exports to the entire world. They find NAFTA promoted a higher growth of U.S. electronics exports and less growth of chemicals.

Agriculture represents a surprisingly small share of Mexican exports in the graphs below, lower than before NAFTA. This does not indicate that Mexico’s agricultural exports have declined, but rather that other export categories grew faster. U.S. agricultural exports to Mexico have increased across the NAFTA period, and Mexico is now the third-largest export market for U.S. agricultural goods. Apparel and textiles is a shrinking share of both countries’ exports.

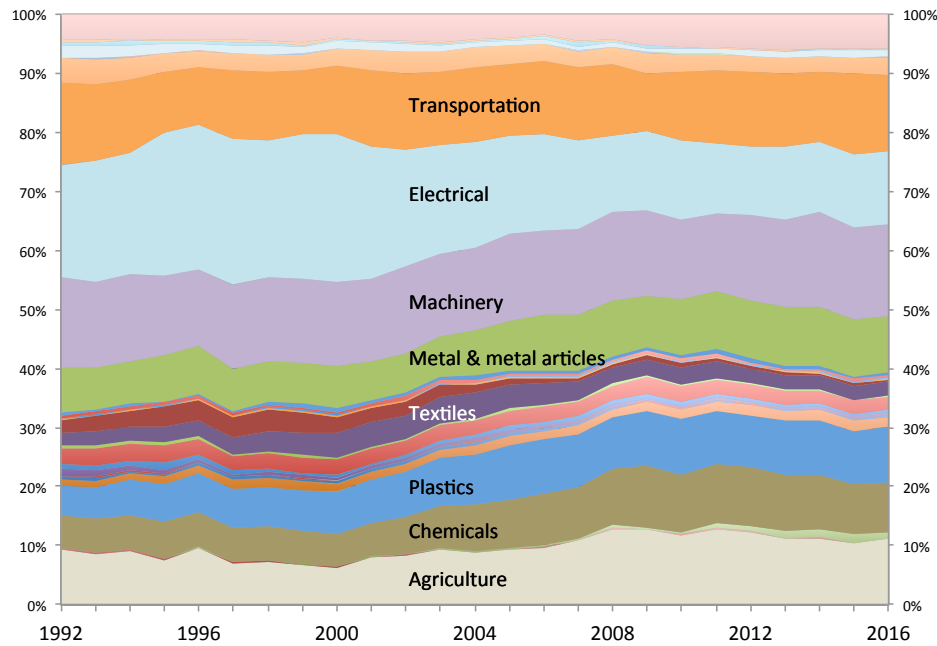
Figure 8. Share of Mexico Exports to the U.S. by Product, 1992–2016



Note: Trade data exclude services and petroleum products.

Source: UN Comtrade, HS92.

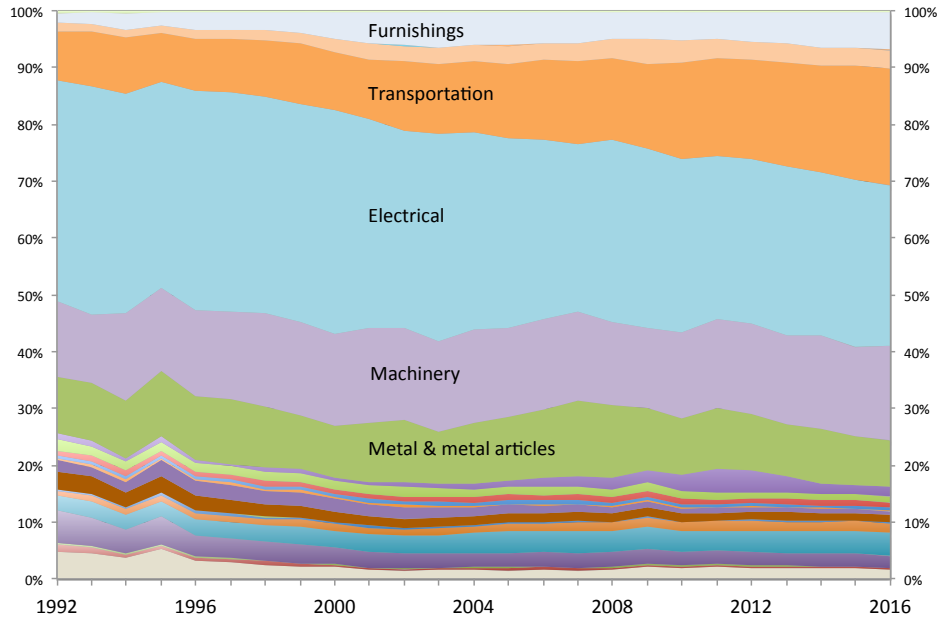
Figure 9. Share of U.S. Exports to Mexico by Product, 1992–2016



Note: Trade data exclude services and petroleum products.
 Source: UN Comtrade, HS92.

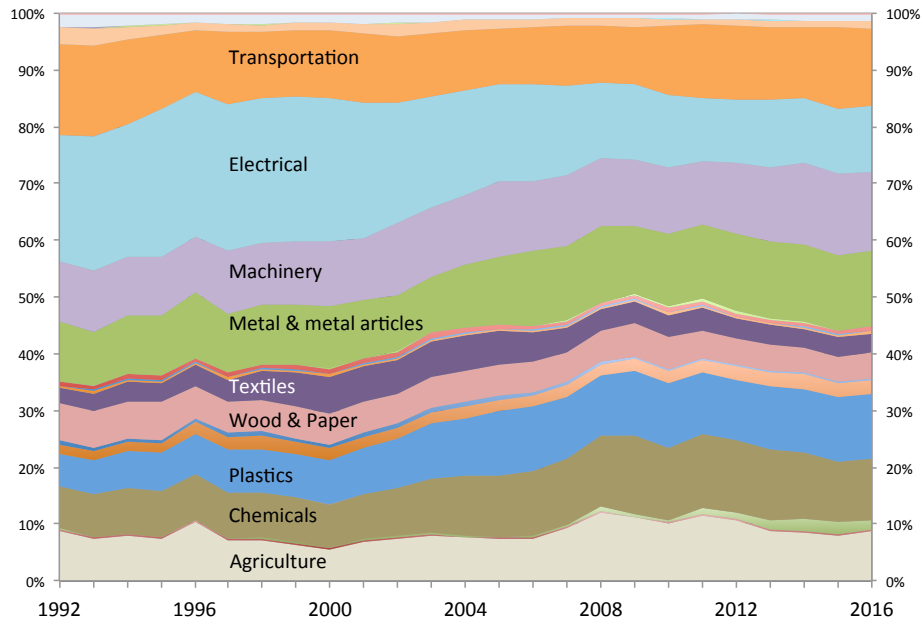
Cross-border supply chain development plays a large role in the narrative of NAFTA’s industry-level impact. Commentators spotlight automotive and electronics producers, in particular, as intensive users of cross-border supply chain linkages. This bears out in the data on intermediate goods trade, a proxy for supply chain trade. Those two sectors amount to 48% of Mexico’s exports of intermediate goods to the U.S., though only 25% of trade in the other direction (Figures 10 and 11).¹⁰

Figure 10. Share of Mexico Intermediate Goods Exports to the U.S. by Product, 1992–2016



Note: Trade data exclude services and petroleum products. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS92 codes, applied to UN Comtrade data. Sources: OECD Bilateral Trade Database, UN Comtrade.

Figure 11. Share of U.S. Intermediate Goods Exports to Mexico by Product, 1992–2016



Note: Trade data exclude services and petroleum products. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS92 codes, applied to UN Comtrade data. Sources: OECD Bilateral Trade Database, UN Comtrade.

However, electronics has fallen as a share of intermediate goods trade in both directions since NAFTA (the auto sector is discussed in more detail below). Industries like chemicals and machinery that typically supply parts for other industries have grown faster than electronics. Because intermediate goods may be used in a number of other industries, this data only describes the upstream industries participating in supply chains, not downstream final-goods industries in the chain.

Trade liberalization under NAFTA disproportionately impacted three industries: autos, agriculture, and textiles/apparel (USITC 2003).¹¹ Autos and textiles/apparel faced higher than average tariffs before NAFTA; the U.S. imposed quantitative restrictions on textiles and apparel; and agriculture faced restrictive non-tariff barriers like import license requirements by Mexico. As a result, these three industries deserve special focus. Each section below tells a different story about how NAFTA played out for the U.S., and as such they serve as vignettes documenting the complexity of such broad economic relationships.

Autos

The auto industry experience with NAFTA epitomizes the gains available from lowering trade barriers. This stems from the fact that transportation equipment is second only to electronics as the most trade-intensive industry in the world (Baldwin 2013).

This sector is often described as seamlessly integrated across North America. Producing a car is much more likely to involve trading parts across borders now than before the treaty (Burfisher, Robinson, and Thierfelder 2001). This is illustrated in Figures 8 through 11, which show that transportation's share of U.S.-Mexico trade in both directions has grown since NAFTA began. Vehicles and auto parts dominate the transportation category.

Of course, attributing causality to NAFTA for any of these trends—especially more recent ones—risks misreading the evidence, but they are at least consistent with the possibility of causality.

From 1993 to 2014, U.S. exports of vehicles and auto parts to the world have increased by 166%, keeping its share of global exports close to constant.¹² Growth in U.S. auto part exports to the rest of the world greatly exceeded the growth of exports to Mexico and Canada (Rimmer and Dixon 2015). Hence, the United States appears to have preserved its global competitiveness, even if it has lost some market share in the NAFTA region. On the other hand, exports of truck and bus bodies and metal-forming machinery saw greater growth in NAFTA countries than the rest of the world.

These figures include the many other factors impacting competitiveness across this period, such as the shift in U.S. production to less unionized states, improved production techniques, or lower relative energy costs. However, the degree of industry reorganization to take advantage of regional networks—which continues to the present—suggests that integration benefited the competitiveness of the U.S. auto industry (Klein, Schuh, and Triest 2002; Hufbauer and Schott 2005).

The impact of NAFTA on autoworkers is harder to determine. Researchers at the Peterson Institute for International Economics observe that at the same time U.S. auto production was rising, employment levels in the auto industry fell by one-third from 1994 to 2013. Mexican autoworker employment levels quadrupled (Hufbauer, Cimino, and Moran 2014). On top of this, U.S. autoworker wages did not climb with the obvious increase in their productivity, as economic theory suggests it should, all else equal.

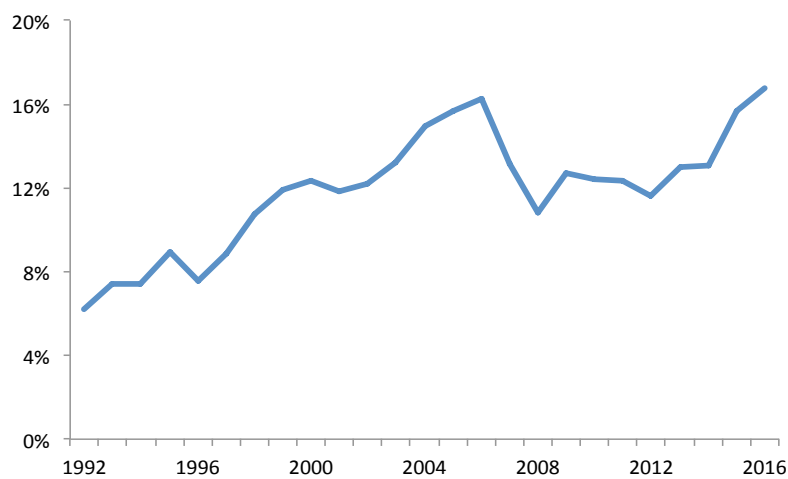
Again, it is difficult to isolate NAFTA from other forces at work. Hufbauer, Cimino, and Moran note the decline in union membership as U.S. production volumes shifted to factories in the southern U.S., as well as the impact of the subprime mortgage crisis on U.S. auto manufacturers. Auto exports from South Korea, where wages are also lower than in the United States, grew twice as fast as Mexico's during this period.¹³ After controlling for some of these factors, Klein, Schuh, and Triest (2002) do not find a difference between employment trends before and after NAFTA. To the extent that NAFTA mattered for the U.S. auto sector, rather than accelerating job loss, it probably helped keep wages down.

In sum, NAFTA's effect on the U.S. auto industry is complex. Many argue that the efficiencies achieved through greater integration helped sustain the North American auto industry, which might have otherwise succumbed to competitors.

Agriculture

The U.S., in using more efficient production methods, has been a clear winner from NAFTA's lower barriers to agricultural goods (Zylkin 2016). While agriculture's share of exports to Mexico declined in the NAFTA period (Figure 9), it fell a bit more slowly than agriculture's share of exports to the rest of the world. Slicing the data in a slightly different way, Mexico's share of all U.S. agricultural exports rose 9% in the NAFTA period (Figure 12). A review of econometric studies indicates a significant portion of that increase is due to the reduction in tariffs and nontariff barriers embodied in NAFTA (Zahniser et al. 2015).

Figure 12. Share of Total U.S. Agricultural Exports Going to Mexico



Note: Trade data exclude services and petroleum products. Source: UN Comtrade, HS92.

Row crops like corn exemplify the increases in U.S. exports. Bahmani-Oskooee and Hegerty (2011) find that NAFTA shifted the balance of trade in animal feed (i.e., corn) in favor of the U.S.¹⁴

U.S. agricultural success has not been lost on Mexico, where NAFTA is unpopular for the exact opposite reason—presumably wreaking havoc on Mexico’s agricultural industry. However, Susanto, Rosson, and Adcock (2007) find that NAFTA contributed to a significant increase in U.S. imports of Mexican agricultural goods as well. This benefits U.S. consumers with greater variety and seasonal availability of food.

With only 2% of the U.S. workforce in agriculture, and agricultural workers not typically earning high wages, any job losses due to NAFTA have largely not been painful. Zahniser et al. (2015) estimate that the number of U.S. jobs supported by U.S. agricultural exports to Canada and Mexico has increased during the NAFTA period, but the net job impact is negligible. Hence, it can be said that NAFTA had almost entirely beneficial outcomes for U.S. agriculture. Again, the picture in Mexico is much more complex, a topic well covered in other papers.¹⁵

Textiles and Apparel

The textile and apparel industry tells another type of story, one of an unexpected development that takes over the plot. To set the context, NAFTA gradually eliminated duties on textiles and apparel over 10 years. It mildly accentuated the long-term decline of the U.S. apparel industry, but the U.S. was still the lowest-cost producer of textiles, which are more easily automated than apparel (Lederman, Maloney, and Serven 2005). U.S. exports of cotton and textiles to Mexico grew, as shown in Figure 9, quadrupling the U.S. trade surplus in textiles through 2001 (USITC 2003). Mexican textile and apparel exports to the U.S.—especially apparel exports, as shown in Figure 8—also grew faster than other products, aided by removal by the U.S. of quantitative restrictions in addition to lower tariffs (USITC 2003; Zahniser et al. 2015). However, Mexican apparel export gains likely came at the expense of Asian producers, not U.S. producers, so the impact on total U.S. imports was muted (Burfisher, Robinson, and Thierfelder 2001; Klein, Schuh, and Triest 2002; Fukao, Okubo, and Stern 2003). This netted a shift in the textiles trade balance in favor of the U.S., which Bahmani-Oskooee and Hegerty (2011) attribute directly to NAFTA.

NAFTA was subsequently rendered meaningless to the textile and apparel sector by the surprise entry of other competitors. China, Vietnam, and other countries gained access to the World Trade Organization’s (WTO) Agreement on Textiles and Clothing in 2000, the same year the United States granted duty- and quota-free access to U.S. markets for the Caribbean Basin Initiative countries via the Caribbean Basin Trade Partnership Act (CBTPA). Mexican apparel and textile producers could no longer dominate the relationship with the U.S. As a result, the share of textiles in bilateral U.S.-Mexico trade began to fall in 2000 (Zahniser et al. 2015). Nonetheless, in 2015, Mexico and the CBTPA countries remain the largest export markets for the U.S. textiles industry, accounting for 74% of total U.S. textile exports (USITC 2016, 58).

3. Labor Markets and Inequality

Without a doubt, the impact of NAFTA on U.S. labor markets is the number one concern of American policymakers. Opponents tout large job losses (e.g., Scott 2011), and supporters point to large job gains (e.g., Hufbauer, Cimino, and Moran 2014). Both sides attribute all changes in bilateral trade since NAFTA began to the agreement. As described in Section 1, this is a mistake.

Numerous studies have more carefully measured the impact of NAFTA on U.S. labor markets after controlling for other potential influences. Some find negative net impacts (Hornbeck 2004; Autor, Dorn, and Hanson 2013; Hakobyan and McLaren 2016) and some find positive net impacts (Francis and Zheng 2011; De La Cruz and Riker 2014; Caliendo and Parro 2015). All find that the impact was probably quite small, commensurate with the small net impact on GDP.

However, as the industry-level analysis in Section 2 indicates, aggregate numbers can disguise large and meaningful offsetting gains and losses, which deserve careful consideration. For instance, Klein, Schuh, and Triest (2002) document that U.S. employment in textiles fell after NAFTA despite the fact that the industry's exports did not decrease. The producers that succeeded in the more competitive environment were the more productive ones that required fewer workers. On the other hand, Klein, Schuh, and Triest see little impact on employment in the chemical and auto sectors.

The most careful work isolating the impact of NAFTA on local labor markets and specific industries in the United States is Hakobyan and McLaren (2016). The study identified the U.S. regions most vulnerable to competition from Mexico: Pennsylvania and the Deep South, especially Alabama, the Carolinas, Georgia, and Tennessee. Their conclusion is worth quoting:

For the most heavily NAFTA-vulnerable locations, a high school dropout would have up to 8 percentage points slower wage growth from 1990 to 2000...There is, however, an even larger industry effect, with wage growth in the most protected industries that lose their protection quickly falling 17 percentage points relative to industries that were unprotected to begin with. (Hakobyan and McLaren 2016, 729)

Wage growth for the median American worker grew 40% (3.4% per year) from 1990 to 2000, according to data from the Bureau of Labor Statistics' Current Population Survey. Knocking 8 to 17 percentage points off that growth—or a combined 25 percentage points for a high school dropout in the most protected industry—represents a meaningful impact of NAFTA. Hakobyan and McLaren found no impact on college-educated workers.¹⁶

The disproportionate impact on low-skilled workers provides the strongest counter-argument to the substantial evidence that the jobs created through trade pay better wages than the jobs that are lost. *The workers who gain jobs due to NAFTA are not the same workers that lose jobs due to NAFTA.* The better-paying jobs often are in different locations with insuperable moving costs, or they require higher skill sets. Further, while De La Cruz and

Riker (2014) find a small positive impact from NAFTA on the real wages of both skilled and unskilled workers, the impact on skilled workers was greater. This all suggests that NAFTA had a small negative impact on income inequality.

Dani Rodrik has often made the point that trade deals have much greater (five times or more) negative redistributive effects than the positive gains attained through greater output (e.g., Rodrik 1992). For NAFTA, the magnitude of any impact on income inequality is difficult to measure. In the case of the Hakobyan and McLaren (2016) study, income growth for the median worker who did not finish high school slowed by 4% over a decade due to NAFTA, but workers with a high school diploma or better saw no effect. In 1996, about 11% of the labor force had not completed high school. If the net increase in GDP was just under 1%, this places the redistributive impact in the same range as the positive gains.¹⁷

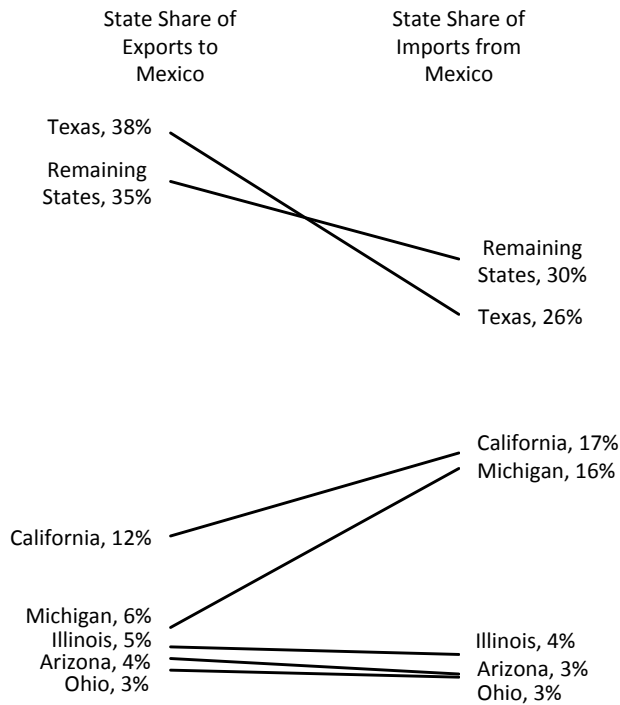
The dramatic rise in China's share of global exports played a role in reducing the beneficial impact of NAFTA on U.S. labor markets. One anticipated source of wage and employment growth for the United States was the convergence of labor markets in Mexico toward the U.S. Rising productivity in Mexico and the tightening of Mexican labor markets due to trade-linked labor demand both should have put upward pressure on Mexican wages. In response, U.S. workers should have gained bargaining power and exporters should have gained a larger market for their products.

As it happened, Mexican wage levels have not risen. Instead, after China obtained WTO membership, Mexico found itself struggling against imports of many of the same goods it produces. This limited the growth of Mexican exports to the U.S., with collateral impacts on Mexican labor markets (Hanson 2010). The China effect diminished the potential benefits of NAFTA, but not due to any problem inherent in the treaty itself.

4. Regional Economic Impacts

The trade relationship with Mexico is not uniform across all parts of the United States. In fact, it is concentrated in six states—the three biggest border states and three major Midwestern manufacturing states (Figure 13). Any changes to U.S.-Mexico trade would impact these states more than any other part of the country.

Figure 13. State Shares of U.S. Trade with Mexico, 2016



Note: Trade data exclude services and petroleum products.

Source: Authors' calculation using U.S. Census origin of movement data.

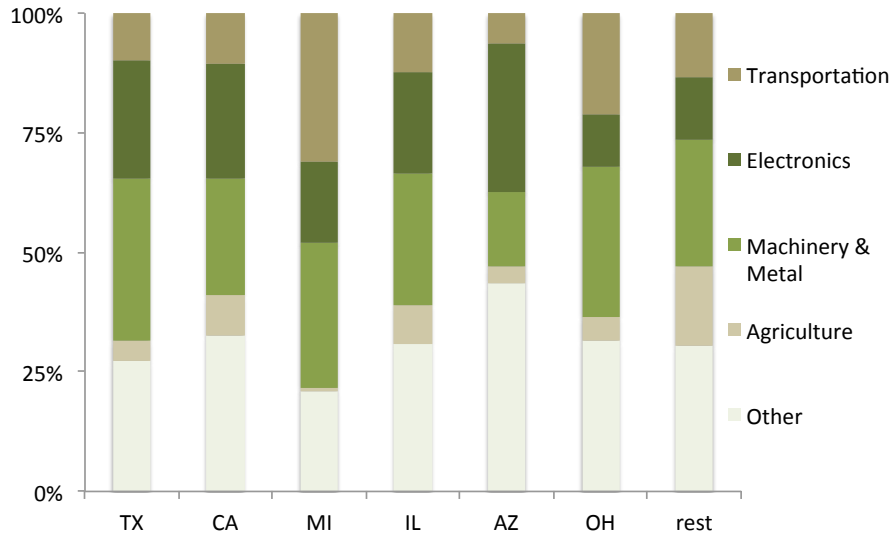
Texas stands out as having by far the deepest economic relationship with Mexico. Texas exports to Mexico amounted to more than \$92 billion in 2016, of which \$14 billion was petroleum products. Non-petroleum goods exports to Mexico constitute 43% of global non-petroleum goods exports from Texas. It also represents 38% of all U.S. non-petroleum goods exports to Mexico. To put that in context, Texas has less than 10% of the U.S. population and about 10% of U.S. GDP, so Mexico trade is highly concentrated in that one state. Although Arizona is a smaller state, it has almost the same exposure to Mexico as Texas, as exports to Mexico represent 38% of its global exports.

The same six states dominate imports from Mexico, but Texas is less of an outlier with 27% of the national total, while Michigan and California have 17% and 16%, respectively.

Not surprisingly, the industry breakdown of trade from Mexico varies by state. In fact, what may be more surprising is how similar the export industry pattern is across states. The import pattern exhibits more variation.

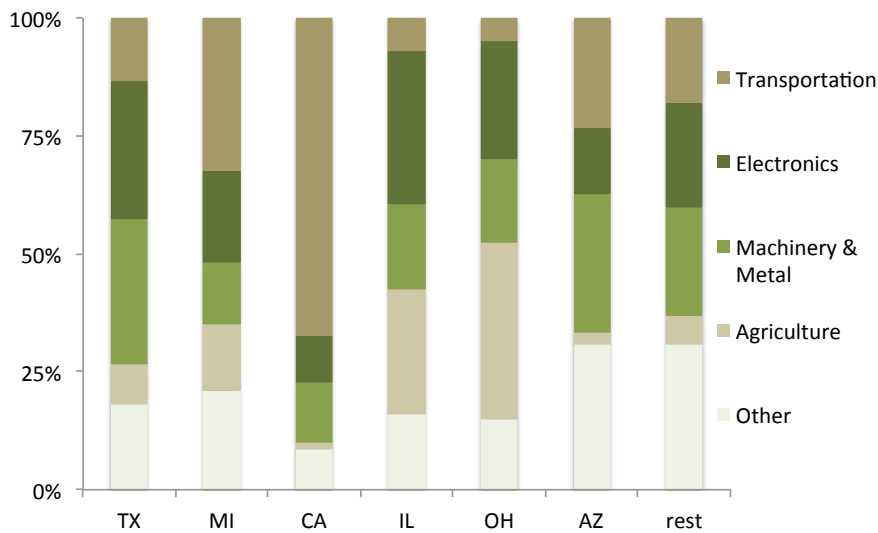
Focusing on the leading six states in Figures 14 and 15, the importance of auto manufacturing for Michigan and Ohio stands out. Texas, California, and Arizona specialize more heavily in electronics (on the import side, California's massive imports of finished vehicles squeeze out the other sectors). Agricultural exports are a smaller share of the leading six states than the rest of the country.

Figure 14. State Exports to Mexico by Industry, 2016



Note: Trade data exclude services and petroleum products. States are listed in descending order of their share of total U.S. exports to Mexico. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS codes, applied to U.S. Census Bureau origin of movement data. Source: OECD Bilateral Trade Database by Industry and U.S. Census Bureau.

Figure 15. State Imports from Mexico by Industry, 2016

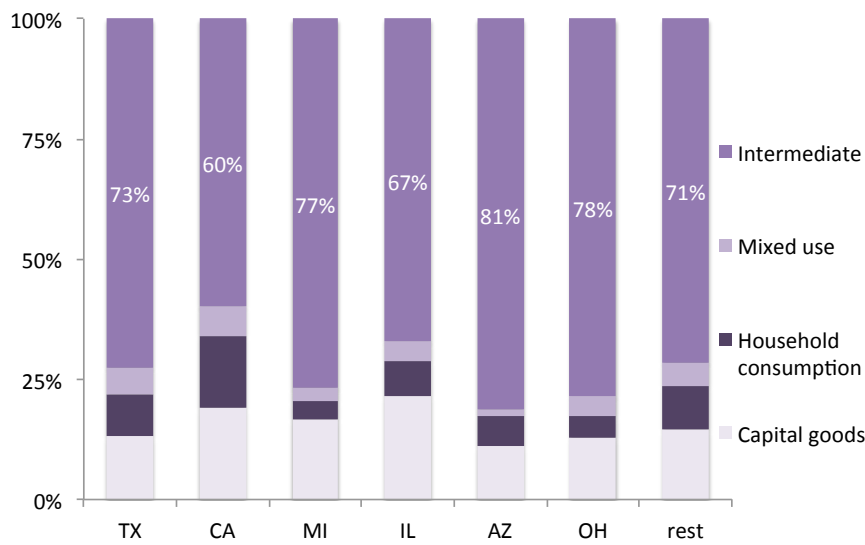


Note: Trade data exclude services and petroleum products. States are listed in descending order of their share of total U.S. exports to Mexico. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS codes, applied to U.S. Census Bureau state of destination data. Source: OECD Bilateral Trade Database by Industry and U.S. Census Bureau.

Trade can also be parsed by end use, divided between capital goods used to produce other goods, intermediate goods serving as inputs to production, and final goods for household consumption. To avoid ambiguity, the OECD also identifies mixed-use goods that commonly fall in more than one category.

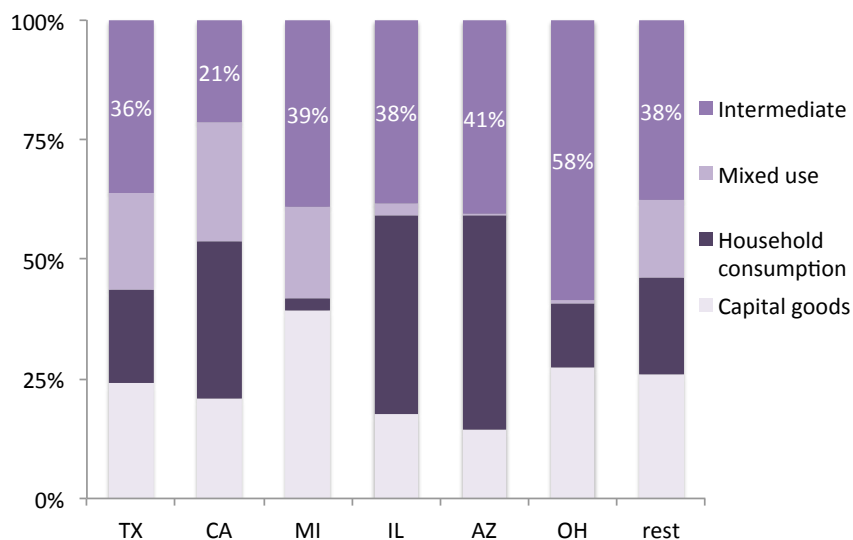
Intermediate goods can serve as a proxy for supply chain trade, as discussed in Section 2. Overall, this category dominates U.S. exports to Mexico (Figure 16). Supply chains tend to be clustered close to the border, though the effect in the United States is not great (Hanson 1998). This may mean border states like Texas host a disproportionate amount of supply chain linkages to Mexico.

Figure 16. State Exports to Mexico by End Use, 2016



Note: Trade data exclude services and petroleum products. States are listed in descending order of their share of total U.S. exports to Mexico. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS codes, applied to U.S. Census Bureau origin of movement data. Sources: OECD Bilateral Trade Database by Industry and U.S. Census Bureau.

Figure 17. State Imports from Mexico by End Use, 2016



Note: Trade data exclude services and petroleum products. States are listed in descending order of their share of total U.S. exports to Mexico. Intermediate goods are identified using the OECD Bilateral Trade Database by Industry and End-Use classification of 6-digit HS codes, applied to U.S. Census Bureau state of destination data. Sources: OECD Bilateral Trade Database by Industry and U.S. Census Bureau.

In the data, however, the pattern for Texas looks about average. It should be no surprise that the figure for Texas approximates the national average, given its overwhelming share of U.S.-Mexico trade, but in fact, the national average hardly changes when removing Texas.

The share of intermediate goods trade for the manufacturing states of Michigan and Ohio unsurprisingly suggests higher than average linkages. More surprisingly, so does Arizona. Illustrative of supply chain linkages, much of Ohio's intermediate goods imports supply its automotive industry with items like engine parts and wiring sets.¹⁸ It is worth noting that soybeans and corn also rank highly among intermediate goods exports from Illinois and Ohio.

California stands as an outlier from the national pattern, with a significantly lower share of intermediate goods exports and imports (Figure 17). This implies less reliance on Mexico supply chains, perhaps because of the strength of the relationships between California's industries and Asia.

How much did NAFTA contribute to the state-level patterns of overall and supply chain trade with Mexico described above? Coughlin and Wall (2003) find that after controlling for state-level economic growth rates, among the six leading states NAFTA only boosted exports to Mexico from the border states of Arizona, California, and Texas. However, Texas saw a surprisingly small impact; NAFTA boosted exports, but less than for the average state in the Southeast U.S. (Funk et al. 2006).

Some states lost business due to NAFTA, and some of the gains represented shifts between states. New York and Minnesota were found to have experienced substantial export declines due to NAFTA (Coughlin and Wall 2003). The electrical equipment and automotive industries saw export activity move from states like Louisiana to Texas and Tennessee (Funk et al. 2006). Electrical equipment and automotive are the two industries that most strongly developed cross-border supply chains, both around the world and within NAFTA. Relatedly, Coughlin and Wall show that Texas received a disproportionate lift in exports to Canada, perhaps because of Texas' role in the integration of the auto industry.

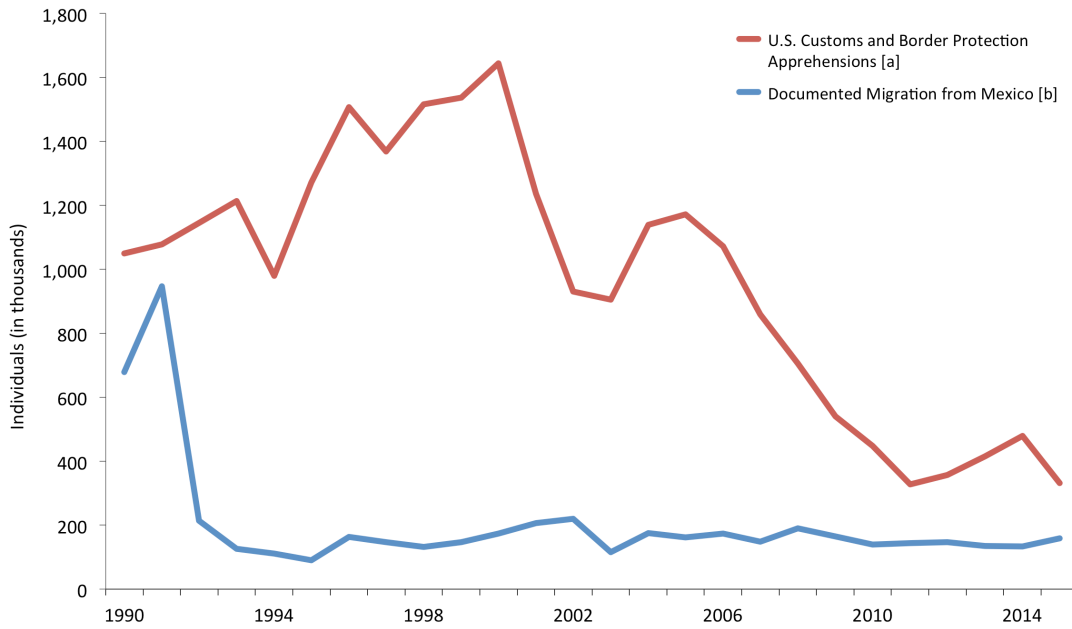
One interpretation of this evidence might be that if studies cannot identify a clear, strong impact of NAFTA on Texas, it is no surprise that few of the early studies on national trade found an impact. However, the two studies cited above and many of the early studies use simple gravity models and small samples. It appears most likely that the auto and electrical industries in Texas, other border states, and Tennessee saw the most concentrated gains from NAFTA. These gains were not enormous, however, accounting for no more than a small fraction of overall trade growth during the NAFTA period.

5. Immigration from Mexico to the United States

A substantive discussion has taken place over the last two decades on the impact of NAFTA on Mexican migration to the United States. This discussion is merited. One of the original promises behind the agreement was that it would help promote Mexico's economic development—by attracting foreign direct investment, creating jobs, increasing wage rates, and reducing poverty and inequality—and thereby stem the tide of migration, especially undocumented migration, to the United States (Villarreal 2010). Almost 25 years later, the empirical evidence related to this promise is mixed, and the relationship between NAFTA and undocumented migration is difficult to disentangle from other variables.

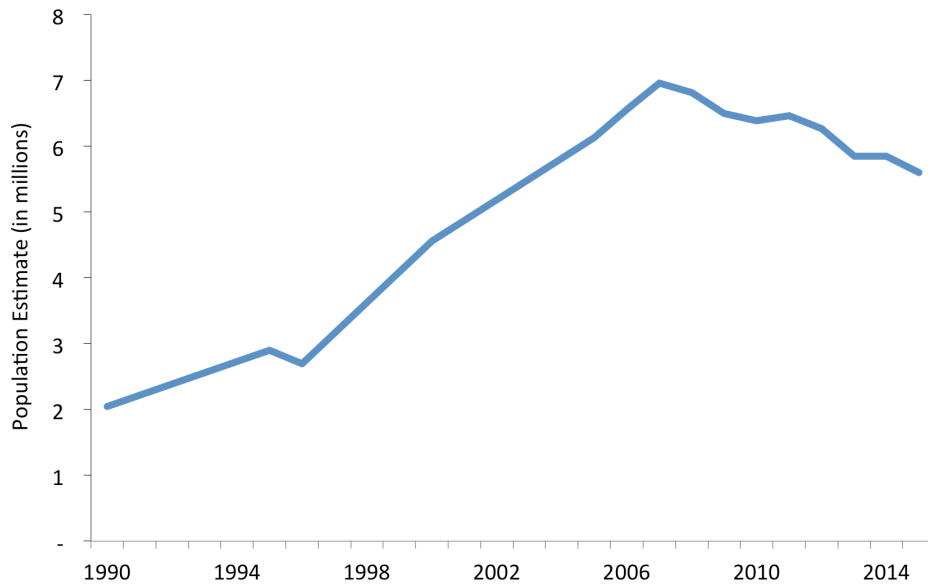
There is a broad consensus that NAFTA, for example, had an initial impact on undocumented migration through a negative impact on Mexico's agricultural industry—particularly small farmers, many of whom moved to the United States without the necessary documents (Burfisher, Robison, and Thierfelder 2017). The statistics show that unauthorized migration from Mexico rose during the first six years of the agreement, dropped sharply in the early 2000s, spiked again in the mid-2000s, and then began dropping dramatically, even as NAFTA-induced economic growth in Mexico continued to rise steadily throughout these same years (NAFTA's growth impact is covered in Section 1). Over the last 10 years, in fact, Mexican unauthorized migration has fallen to a trickle, and some argue that Mexican migration to the United States is now at net zero or even negative (González-Barrera 2015) as NAFTA continues to stimulate Mexican economic growth (Figure 18).¹⁹ The number of unauthorized Mexican immigrants in the U.S. has also dropped steadily over the last 10 years (Figure 19). But it is difficult to attribute this to NAFTA, given other key variables that may have decreased unauthorized migration to the United States, which include demographic changes in Mexico and beefed up border security, in addition to increased foreign investment in Mexican industry spurred by NAFTA.

Figure 18. U.S. Customs and Border Protection Apprehensions and Documented Migration from Mexico, 1990-2015



Sources: Data from U.S. Customs and Border Protection [a] and U.S. Department of Homeland Security [b].

Figure 19. Undocumented U.S. Residents of Mexican Origin, 1990-2015



Note: Data are an estimate and average measurements from Pew Research Center for Hispanic Studies and U.S. Department of Homeland Security.

Source: Pew Research Center for Hispanic Studies and U.S. Department of Homeland Security.

At the aggregate level, undocumented Mexican migration patterns to the United States, as shown in Figure 18, appear to bear no correlation with Mexico's economic growth, foreign direct investment, unemployment, or wages, according to OECD data. This suggests that the effect of NAFTA on push forces in Mexico and pull forces in the United States is complex. The agreement may have had some effect on Mexican migration to the U.S., but not exactly what or when it was expected. In any event, Mexican migration to the United States is also not easily disentangled from powerful pull forces in the U.S., which tended to attract many migrants in the 1990s primarily because of strong economic growth and job creation.

To understand the complex relationship between undocumented Mexican migration and NAFTA, it is probably best to zoom in on specific industries. Indeed, a report published in 2004 showed that while Mexico gained 500,000 manufacturing jobs between 1994 and 2002, it lost 1.5 million jobs in agriculture due to increasing American imports (Audley et al. 2017). If this is the case, NAFTA had in fact the opposite effect of what was expected, initially fueling Mexican migration to the U.S. through a collapse of the Mexican agricultural sector. By extension, it can be hypothesized that NAFTA-induced migration had a negative impact on wage growth at the bottom of the U.S. labor market as migrants competed with lower-skilled Americans for the same jobs, although the evidence is mixed (Ottaviano and Peri 2012; Clemens, Lewis, and Postel 2017).

Eventually, the negative impacts of NAFTA on Mexico's agricultural sector appear to have played themselves out, and undocumented migration of Mexican farmers dropped. A dramatic drop in Mexican fertility rates (Index Mundi 2017) as well as beefed up security along the U.S.-Mexico border (Ewing 2014), which has made it increasingly difficult to cross between ports of entry, may also be important explanations to the declining willingness of Mexicans to move to the United States. But, if we consider that at least 40% of all unauthorized residents came to the U.S. with a visa and then overstayed its duration, it is clear that Mexicans are still coming to the U.S.—entering ports of entry either without authorization, or with a visa and overstaying after it has expired.

Thus, unwittingly, NAFTA may have contributed to undocumented migration rates increasing for the first 10 years, but eventually contributed to greater economic opportunities in Mexico so that the rate of undocumented migration lost momentum. Demographic changes in Mexico and increased border security, however, also made it more difficult to cross into the United States without being detected and apprehended.

6. Broader U.S.-Mexico Relations

Not all the impacts of a trade agreement are economic. Some are complex to measure and correlate, including the diplomatic, political, and social impacts within and between trading nations. This generally stems from credible commitments to reforms, as well as dividends built through increased interaction. The literature on the effects of free trade on conflict and cooperation is crucial here. Some authors have in fact argued that free trade does drive a nation's foreign policy in the direction of peace and broader cooperation (McDonald 2017).

In this regard, NAFTA seems to have reset the U.S.-Mexico relationship after one of its lowest points in the mid-1980s, when both countries clashed over drug trafficking and the torturing of a DEA agent in Mexico (Smith 1985). By 1989, the two countries had begun to take a new approach in their relations, and by the mid-1990s NAFTA appears to have solidified Mexico's commitment to become a market democracy; transformed and strengthened the institutional, legal, and civil society capacity within the country; and set in motion new forms of political and diplomatic interaction between Mexico and the United States (Aspinwall 2009). It also seems to have made Mexico more receptive to U.S. security interests. By 2007, Mexico and the United States had achieved unprecedented cooperation on security issues through the Merida Initiative, and American law enforcement bureaucracies were given historic access to Mexico's public safety and security system between 2007 and 2012 (U.S. Department of State 2017). All of this appears to have been the direct result of trust built over time through a partnership partly framed by NAFTA.

7. Political and Social Impacts of NAFTA on Mexico

Between the 1930s and 1970s, Mexico's economy was based on an import substitution industrialization (ISI) model. During this period, the Mexican government was the primary engine of economic planning and development. By the late 1970s, however, the ISI model was reaching its structural limits (Primo Braga 2010). By 1980, the Mexican economic system was in a severe crisis. In response, the government began to implement a series of measures that dismantled the ISI model and moved Mexico toward an open economy reliant on private and foreign investment, international trade, and strict macroeconomic discipline. In 1986, Mexico joined the General Agreement on Tariffs and Trade, the predecessor of the WTO.

Mexico's economic and commercial opening through the 1980s was a relative success. By the late 1980s, the country had turned the corner, and its economy began to stabilize and grow again. In 1989, Mexico made the decision to approach the U.S. about entering a free trade agreement, with Canada joining the negotiations soon after. By the Mexican government's own recognition, a free trade agreement with the U.S. and Canada would represent the culmination of a liberalization process that started in the early 1980s (WTO 2002). The agreement consolidated Mexico's new economic model and anchored it in a North American context. By most measures, this goal was achieved by 2009, when all the provisions of NAFTA were fully implemented.

Another central question, however, is whether NAFTA had any impact on Mexico's political system, and thereby its relationship with the United States (Smith 1992). Free trade would presumably contribute to bringing the country more politically in line with Canada and the United States and add to the general stability of the NAFTA partners. In effect, Mexico redefined itself as a North American country and distanced itself from Latin America.

NAFTA may have indeed propelled the Mexican government to make concessions in terms of political openness in 1994 and 1997, although discerning the agreement's overall causal relationship to Mexico's social and political change is difficult in and of itself (Heredia

1994). But Mexico's political opening after NAFTA did accelerate—as modernization theory would predict—and its relationship with the U.S. came to be understood as one where Mexico would eventually join the industrialized democracies.

Indeed, NAFTA may have “unleashed a series of processes that clearly would not have developed on their own, and yet were not of NAFTA's creation” (Castañeda 1993) and given Mexicans new energy to pursue more liberal social and political actions (Steffan 2007). The NAFTA negotiations were in and of themselves a mechanism for the organization of Mexican civil society, although sometimes that organization was to protest the agreement (Heredia 2010).

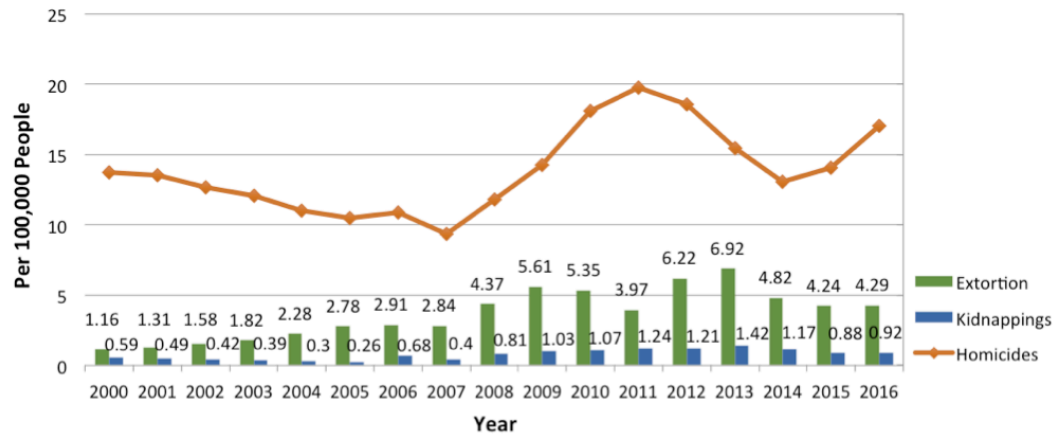
Free trade therefore emboldened the Mexican electorate, despite the existence of pockets of dissatisfaction with the treaty. The public pushed for further political opening, and the long-dominant National Revolutionary Party lost control of the Mexican Congress by 1997 and the presidency in 2000. Thus, although it is difficult to isolate the triumph of the opposition in Mexico from the economic opening that took place in the 1980s—an economic opening that was consolidated by a closer relationship with Canada and the U.S. through NAFTA—Mexicans did acquire a renewed sense of political empowerment once the agreement was in place.

Moreover, Liu and Ornelas (2014) have posited that free trade can help in the consolidation of democracy by reducing the incentives of authoritarian groups to seek power, because free trade destroys protectionist rents. This is not to say that NAFTA destroyed all rent seeking in Mexico, as there is some evidence that the Mexican government did protect some monopolies. Indeed, the World Bank has argued that certain business interests (and some labor interests) have blocked important changes to make Mexico's economy more efficient, in spite of increasing free trade (Levy and Walton 2009). The Mexican economy, however, did become more competitive, and the monopolies that remained—such as that in the telecommunications sector—became politically controversial among Mexicans and were perceived as remnants of the old economic system.

It is also important to point out what NAFTA has not done for Mexico. Corruption and crime have not decreased since the agreement was ratified. If anything, both have increased in recent years, fueling Americans' unease over a close relationship with Mexico. Petty corruption costs Mexico billions of dollars, and it has not diminished since NAFTA entered into force. Mexico continues to be labeled a largely corrupt nation on most international indices (Transparency International 2017). But corruption is an ingrained institution in Mexico, going back to colonial times (Oliver 2007). The weakening of the central government's authority after 2000 has not helped. It is unfair to expect a trade agreement to surmount the much stronger forces exerted by corruption.

Crime has been on the rise, especially that related to drug trafficking. Ordinary crime—including rape, extortion, natural resource theft, femicide, and kidnappings—has also increased, but it is not at all clear that this is linked to NAFTA. In fact, crime rates have fluctuated with no apparent relation to trade or NAFTA (see Figure 20).

Figure 20. Crime Statistics in Mexico, 2000-2016



Source: Government of Mexico National Public Security System (SNSP). There are other sources that may vary slightly from the Mexican government's official numbers, but they all show the same trends.

Thus, as Mexico opened its economic system, its political system became increasingly democratic as well. The trend was largely propelled by growing interaction with the U.S. and Canada, which caused a positive opinion of the U.S. to increase among Mexicans. In fact, by 2009, nearly 70% of Mexicans had a positive view of the U.S., a historic high (Menasce Horowitz 2013). Thus, it can be argued that Mexico's aspiration to match U.S. political norms can be attributed to its close economic relationship with the U.S., which was later further reinforced by free trade and increased economic integration. It is also likely that even if NAFTA had never been negotiated, the two economies would have grown together over time, and Mexico's political system would have begun to emulate American political norms.

Demonstrating the political and social impacts of trade on a country is a difficult task, but the rapid increase in economic interaction between neighbors seems to have enabled Mexico to bind itself to certain international standards without having to go through the standard legislative process for structural changes to be implemented—in effect, legislating itself from outside. This is to say that Mexico, sometimes unable to pass reforms within its own political and legislative framework, chose to make international commitments (such as NAFTA)—which, once signed, became Mexican law. Congress could then only give a yea or nay vote, without being able to engage in protracted and difficult domestic negotiations. In fact, until recently, a consensus in U.S. foreign policy was that the promotion of economic openness abroad generally serves American interests—and Mexico was a good example of this.

8. Institutions and International Cooperation

Free trade between nations may have added benefits, such as creating and consolidating alliances in areas like security that ultimately result in greater international cooperation. In other words, trade agreements have integration effects that reduce strategic political

behavior among the signatories and sync private sector actions with intergovernmental obligations, resulting in a greater degree of certainty—legal and otherwise—in a binational relationship (Abbott 2000). This seems to have been the case with Mexico and the United States, at least until the Trump administration began to recast the relationship in more adversarial terms. NAFTA, for example—despite its limited institutionalization—has allowed the U.S. to pursue other strategic goals in the North American region that range from the war on drugs to stemming the flow of immigration from Central America.

Through the 1990s, U.S. policy was to expand economic ties—particularly under a neoliberal consensus—and to influence political transitions to democracy in as many countries as possible. It is possible to argue that NAFTA did increase the viability of neoliberalism in Mexico despite several setbacks, and may have helped push through political reforms that resulted in a more open political system (Thacker 1999). Indeed, although the causal mechanisms remain unclear, it is plausible to argue that NAFTA aided political change in Mexico through closer economic integration with the U.S. and Canada, a hypothesis that had been expounded upon by early supporters of the agreement (Cameron and Wise 2004).

It is also reasonable to suppose then that Mexico's transformation in the direction of America's stated goals of global leadership was advantageous to its own goals. A stable neighborhood with compatible economic and political institutions is more desirable than one with disparate goals and continuous strategic political maneuvering. In that sense, the U.S. may have been a big winner of NAFTA, due to Mexico's economic and political transformation and its eventual self-definition as a North American strategic partner to Canada and the United States.

9. Regional Security Collaboration

By 2010—somewhat tied to the existence of NAFTA—a new idea of a close-knit North American continent had emerged, with well-integrated economies and increasing political and security coordination (Pastor 2010; Petraeus and Zoellick 2017). Such a vision would be difficult to achieve anywhere, and trade cannot be the sole basis. A deep and stable trade relationship, however, can lay the groundwork for an increase in mutual trust, which in turn can lead to collaboration on diplomatic, political, and security issues. Ideally, a well-implemented trade relationship can also lead to bilateral (or multilateral) institution building. It is this chain of reasoning that led NAFTA's accomplishments in the U.S.-Mexico relationship to eventually be heralded as the beginning of a redefinition of North America and to be considered a good foundation for the deepening of cooperation in other matters, especially security.

Despite the American public's misgivings about a close relationship with Mexico—even as Mexicans' comfort level with a broader relationship with the U.S. rose after decades of distrust—the U.S. government recognized that what happens in Mexico has an enormous impact on the United States. In the realm of security, this impact includes Central American migrants traversing Mexico on their way to the U.S. and illegal drugs being

produced in, transported through, and smuggled from Mexico. Starting in the 2000s, there were clear attempts to take advantage of the trust built through NAFTA and the increased linkages between the two countries—which may have all originated in the agreement—to expand cooperation in security issues. The Security and Prosperity Partnership and the Mérida Initiative are two such examples.

Security and Prosperity Partnership

In 2005, just over 10 years after NAFTA entered into force and before it was even fully implemented, U.S. President George W. Bush, Mexican President Vicente Fox, and Canadian Prime Minister Paul Martin met in Waco, Texas, for the first North American Leaders' Summit, where they proposed the *Security and Prosperity Partnership of North America* (SPP). This regional initiative was clearly designed to extend the economic gains resulting from NAFTA into a deeper security cooperation framework. Although the SPP was cancelled in 2009, it stood as a symbol of the desire to expand cooperation among all three countries well beyond a purely commercial relationship, solidifying the idea of a more closely coordinated North American region and giving U.S. governmental agencies unprecedented access to Mexican territory and institutions to help solve their security problems before they could be penetrated by U.S. borders.

The SPP had its detractors, given the dominance of the U.S. in the agreement. Some argued that it was not “three interdependent countries with vibrant social movements, respect for labor rights, and environmentally sustainable economies anchored in provision of social needs and respect for cultural autonomy” but “an unequal alliance dominated by the U.S., complete with pumped up oil and gas production, increasing militarization, corporate transnational planning groups, and guest worker programs to ensure cheap, vulnerable labor” (Schiaccitano 2008). But overall, the agreement was viewed as laying the foundation for deeper regional integration with the security interests of the U.S. squarely in the middle of the emerging security and prosperity partnership (“Building a North American Community” 2005).

The Mérida Initiative

In March 2007, President Bush and Mexican President Felipe Calderón met in Mérida, Yucatán, and signed the Mérida Initiative, sometimes referred to as *Plan Mexico*. This initiative sought to achieve closer cooperation between Mexico and the U.S. (as well as some countries in Central America) on combatting drug trafficking, organized crime, money laundering, and other such threats. It was a broader and more ambitious initiative than the SPP.

Under the Mérida Initiative, the U.S. government was to provide Mexico and several Central American countries with assistance that included police training, law enforcement equipment, and intelligence information; Mexico would essentially give the U.S. broader access to conduct joint law enforcement operations within its borders (Abu-Hamdeh 2011). The U.S. was to provide \$1.6 billion dollars in funding for binational cooperation on security issues. Mexico would eventually pay five to six times as much and begin a frontal

assault on organized crime that has led to 125,000 deaths. Mexicans were willing to tolerate the death toll and high levels of violence because they saw the United States as a strategic partner in law enforcement and understood the need for the U.S. to operate in Mexican territory to curtail the actions of organized crime groups, particularly drug traffickers.

The Mérida Initiative gave American law enforcement unprecedented leeway in conducting joint operations in Mexico. The CIA, the FBI, the DEA, and other agencies gained unparalleled access to intelligence and worked with Mexico's law enforcement and military to combat criminal organizations and chip away at drug trafficking operations—although the outcome remains in question, given that there has been little progress in stemming the flow of illegal drugs into the United States and Central American migrants continue to arrive by the hundreds of thousands.

To be sure, the Mérida Initiative had its detractors (Hoopes 2016; Hoskin 2010). But overall, it was largely viewed as an extension of a security collaboration that built on the strategic partnership that had begun with the consolidation of free trade between the U.S. and Mexico. Both the SPP and the Mérida Initiative were possible thanks to a series of transformational understandings of Canada, Mexico, and the United States as regional strategic partners—a vision that began with NAFTA. This kind of partnership would have been unthinkable in the political environment of the 1980s, when Mexico viewed the U.S. with considerably more distrust. NAFTA helped Mexico overcome that distrust and eventually see its security interests as coinciding with those of the United States.

10. Conclusions

NAFTA has neither been the enormous success that its supporters believe, nor the disaster that its detractors claim. We cannot say that NAFTA was all good or all bad for any of the parties involved. In fact, we cannot even say it mattered much to the overall economy of the North American continent. The data reviewed regarding trade demonstrates a modest effect. On the aggregate U.S. trade deficit and GDP growth, the impact was negligible. The data on job gains also shows a net impact close to zero.

This means that on an aggregate basis, judging purely based on economics, renegotiating NAFTA—or even threatening to repeal NAFTA—is not a high-stakes game. The treaty simply does not possess the leverage to deliver either a major boost or setback to the U.S. manufacturing sector. Claims that adjustments to NAFTA would alter the large trends in the U.S. manufacturing sector have little basis in fact.

Only certain economic sectors of both Mexico and the U.S. were strongly impacted, defining the “winners” and “losers” of the agreement. This is an important point for the political economy of the agreement, because net numbers can disguise large, offsetting gross impacts. If the “losers” do not eventually become “winners”—by finding better-paying new jobs, for instance—the treaty may have large impacts on inequality and political support for free trade.

Specific regions and sectors remain particularly dependent on NAFTA tariff preferences. Texas, for instance, is much more exposed than other states to disruptions of U.S.-Mexico trade. U.S. agriculture would certainly be harmed if NAFTA were repealed, as would the many U.S. consumers of Mexican produce. Further, cross-border supply chains helped an efficient “Factory North America” develop, which competes against similar supply chain groupings in Asia and Europe. Without those supply chains, American manufacturers in certain sectors would have struggled to remain competitive. The evidence that NAFTA made a big difference in the development of cross-border supply chains is weak. But to the extent that it did matter, eliminating NAFTA would harm the ability of U.S. manufacturers to compete against supply chain groupings in Asia and Europe.

The labor market data indicate that NAFTA palpably hurt certain small-scale labor markets in a way that demonstrated “skill bias,” meaning lower-skilled workers were harmed while more skilled workers were not. Furthermore, NAFTA contributed to the large migration of unskilled, former agricultural workers from Mexico into the United States. This may contribute to inequality in the U.S. by adding to the lower end of the income distribution and increasing competition at the bottom of the U.S. labor market. The evidence showing the impact of lower-skilled migrants on lower-skilled labor markets, however, is mixed. Finally, NAFTA probably placed downward pressure on U.S. manufacturing sector wages in the 1990s. By 2000, however, the dramatic rise of Chinese imports into the U.S. overwhelmed any impact of NAFTA.

U.S. manufacturing employment fell after NAFTA, and some of that decline reflects jobs moving to Mexico. However, the appropriate scenario with which to compare NAFTA’s job impact is not against pre-NAFTA job levels, but against what job levels would be today without NAFTA. In industries like auto and electronics manufacturing, job losses reflected the realignment of the industry into cross-border supply chains. As noted above, evidence that NAFTA made a significant difference in the development of cross-border supply chains is weak. To the extent that it did matter, we contend that U.S. manufacturing job losses would have been more severe without NAFTA. Accordingly, economist Richard Baldwin argues that advanced economies that resist “the international reorganization of production may find that the resistance hastens rather than hinders its deindustrialization” (Baldwin 2016, 148-9).

Perhaps the most important impacts of NAFTA were three changes in sentiment embodied in the treaty. First, it locked in reforms in Mexico that lowered the risk of integration for North American traders and investors. This contributed to the large burst of FDI into Mexico. Further, estimates of trade impact based purely on changes in tariff and nontariff barriers ignore the confidence/sentiment factor, and therefore probably understate NAFTA’s impact on trade. Reassuringly, the reduction in risk and improvement in confidence now well entrenched. Simply eliminating NAFTA would not *by itself* precipitate a political shift in Mexico large enough that those reforms would be at risk.

Second, NAFTA played an important symbolic role in changing the tone of the U.S.-Mexico economic relationship. It is nearly impossible to measure, but NAFTA brought global attention to Mexico in the 1990s as a location for U.S.-bound production that would have been difficult to achieve through unilateral measures. Now, however, Mexico is a well-known quantity as a manufacturing destination and trade partner in the North American production chain. Eliminating NAFTA at this point would not dent Mexico's reputation much, because—as argued above—NAFTA was not the key variable in developing Mexico's reputation.

A third important impact of NAFTA, however, was the trust dividend that it has produced among all three North American nations, which has enabled the U.S. to pursue its political, diplomatic, and security interests in its own neighborhood with considerably less resistance than before NAFTA. By consolidating Mexico's economic position as being complementary to that of Canada and the United States, and by incentivizing the country to continue its march to a full democracy, the treaty helped Mexico politically align itself with the U.S. and Canada. Mexico has been increasingly open to collaboration with the U.S. on security issues, especially those of undocumented migration and organized crime. This security cooperation would have taken considerably more effort without NAFTA strengthening ties between the countries.

This third effect, unfortunately, could be undone by a repeal of NAFTA. Aggressive U.S. negotiation could create a chain reaction in Mexico's national and electoral politics, giving the populist left a better-than-ever chance of winning the 2018 elections and making Mexico less amenable to cooperating with U.S. interests in the future, setting the relationship back significantly.

This also highlights further risks, which is that aggressive trade moves against Mexico could snowball into a damaging trade war. Additional trade barriers beyond a simple repeal of NAFTA would certainly damage trade. Industries like agriculture, autos, and electronics and regions such as Texas would be disproportionately exposed to this risk because of their dependence on trade with Mexico for either customers or competitive advantage over other firms.

Hence, as the U.S., Mexico, and Canada enter into negotiations over revising NAFTA, the United States should tread carefully. There is room for win-win improvements in the treaty, the details of which lie outside the scope of this paper. However, the gains achievable even through a radical revision of NAFTA are not large. Revisiting NAFTA entails risks as well, mostly for select industries and for U.S.-Mexico relations. The risk-reward trade-off suggests that the United States should avoid an extremely aggressive stance in its negotiation strategy.

Coda

Ideally, this document would include advice on renegotiating the treaty. Trade agreements are amazingly rich in detail, and negotiations will likely center on complex topics like rules of origin and labor and environmental protection. However, the authors have restricted themselves here to topics where conclusions can be drawn from rigorous analysis.

Unfortunately, beyond tariffs and a few types of nontariff barriers, there is very little work measuring the impact of specific aspects of trade agreements. The authors find no support to offer evidence-based advice on whether particular aspects of renegotiation would benefit or harm the United States.

References

- Abbott, Frederick M. 2000. "NAFTA and the Legalization of World Politics: A Case Study." *International Organization* 54 (3): 519-47.
- Abu-Hamdeh, Sabrina. 2011. "The Merida Initiative: An Effective Way of Reducing Violence in Mexico?" *Pepperdine Policy Review* 4: 37-54.
- Adams, Richard, Philippa Dee, Jyothi Gali, and Greg McGuire. 2003. "The Trade and Investment Effects of Preferential Trading Arrangements—Old and New Evidence." Productivity Commission Staff Working Paper, Australian Government Productivity Commission, Canberra, Australia.
- Aspinwall, Mark. 2009. "NAFTA-ization: Regionalization and Domestic Political Adjustment in the North American Economic Area." *JCMS: Journal of Common Market Studies* 47 (1): 1-24.
- Audley, John J., Demetrios G. Papademetriou, Sandra Polaski, and Scott Vaughan. 2004. *NAFTA's Promise and Reality: Lessons from Mexico for the Hemisphere*. Washington, D.C.: Carnegie Endowment for International Peace.
- Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6): 2121-68.
- Bahmani-Oskooee, Mohsen, and Scott W. Hegerty. 2011. "The J-Curve and NAFTA: Evidence from Commodity Trade between the US and Mexico." *Applied Economics* 43 (13): 1579-93.
- Baldwin, Richard. 2013. "Global Supply Chains: Why They Emerged, Why They Matter, and Where They Are Going." In *Global Value Chains In A Changing World*, edited by Deborah K. Elms and Patrick Low. Geneva: World Trade Organization.
- . 2016. *The Great Convergence: Information Technology and the New Globalization*. Cambridge, Massachusetts: Harvard University Press.
- Baldwin, Richard, and Javier Lopez-Gonzalez. 2015. "Supply-chain Trade: A Portrait of Global Patterns and Several Testable Hypotheses." *The World Economy* 38 (11): 1682-1721.
- Building a North American Community: Report of the Independent Task Force on the Future of North America*. 2005. New York: Council of Foreign Relations.
- Burfisher, Mary E., Sherman Robinson, and Karen Thierfelder. 2001. "The Impact of NAFTA on the United States." *Journal of Economic Perspectives* 15 (1): 125-44.

- Caliendo, Lorenzo, and Fernando Parro. 2015. "Estimates of the Trade and Welfare Effects of NAFTA." *The Review of Economic Studies* 82 (1): 1–44.
- Cameron, Maxwell A., and Carol Wise. 2004. "The Political Impact of NAFTA on Mexico: Reflections on the Political Economy of Democratization." *Canadian Journal of Political Science / Revue canadienne de science politique* 37 (2): 301–23.
- Card, David. 2005. "Is New Immigration Really So Bad?" *The Economic Journal* 115 (507): F300–F323.
- Castañeda, Jorge G. 1993. "Beyond Terms of Trade: The Broader Social and Political Implications of International Economic Integration—Supranationality and Grassroots Coalitions." Wendy and Emery Reves Lecture at the College of William and Mary, Williamsburg, VA, April 25, 1993.
- Clemens, Michael A., Ethan G. Lewis, and Hannah M. Postel. 2017. "Immigration Restrictions as Active Labor Market Policy: Evidence from the Mexican Bracero Exclusion." Working Paper 23125. National Bureau of Economic Research.
- Congressional Budget Office. 2003. "The Effects of NAFTA on U.S.-Mexican Trade and GDP." Washington, D.C.: Congressional Budget Office.
- . 2016. "How Preferential Trade Agreements Affect the U.S. Economy." Washington, D.C.: Congressional Budget Office.
- Coughlin, Cletus C., and Howard J. Wall. 2003. "NAFTA and the Changing Pattern of State Exports." *Papers in Regional Science* 82 (4): 427–50.
- Council on Foreign Relations. 2014. *North America: Time for a New Focus*. New York: Council on Foreign Relations.
- Cuevas, Alfredo, Miguel Messmacher, and Alejandro Werner. 2005. "Foreign Direct Investment in Mexico since the Approval of NAFTA." *The World Bank Economic Review* 19 (3): 473–88.
- De La Cruz, Justino, and David Riker. 2014. "The Impact of NAFTA on U.S. Labor Markets." Office of Economics Working Paper, U.S. International Trade Commission, Washington, D.C.
- Esquivel Hernández, Gerardo. 2015. *Desigualdad Extrema en México: Concentración del Poder Económico y Político*. Mexico City: Oxfam México.
- Ewing, Walter A. 2014. "'Enemy Territory': Immigration Enforcement in the US-Mexico Borderlands." *Journal on Migration and Human Security* 2 (3): 198–222.

- Francis, John, and Yuqing Zheng. 2011. "Trade Liberalization, Unemployment and Adjustment: Evidence from NAFTA Using State Level Data." *Applied Economics* 43 (13): 1657–71.
- Fukao, Kyoji, Toshihiro Okubo, and Robert M. Stern. 2003. "An Econometric Analysis of Trade Diversion under NAFTA." *The North American Journal of Economics and Finance* 14 (1): 3–24.
- Funk, Mark, Erick Elder, Vincent Yao, and Ashvin Vibhakar. 2006. "Intra-NAFTA Trade in Mid-South Industries: A Gravity Model." *The Review of Regional Studies* 36 (2): 205–20.
- Gonzalez-Barrera, Ana. 2015. *More Mexicans Leaving Than Coming to the U.S.* Washington, D.C.: Pew Research Center.
- Hakobyan, Shushanik, and John McLaren. 2016. "Looking for Local Labor Market Effects of NAFTA." *The Review of Economics and Statistics* 98 (4): 728–41.
- Hanson, Gordon H. 1998. "North American Economic Integration and Industry Location." *Oxford Review of Economic Policy* 14 (2): 30–44.
- . 2010. "Why Isn't Mexico Rich?" *Journal of Economic Literature* 48 (4): 987–1004.
- Heredia, Carlos A. 1994. "NAFTA and Democratization in Mexico." *Journal of International Affairs* 48 (1): 13–38.
- Hillberry, Russell, and Christine McDaniel. 2002. "A Decomposition of North American Trade Growth since NAFTA." *International Economic Review* May/June. f.
- Hoopes, Michael. 2015. "The Mérida Initiative at 7 Years: Little Institutional Improvement Amidst Increased Militarization." *Small Wars Journal*.
- Hornbeck, J. F. 2004. *NAFTA at Ten: Lessons from Recent Studies.* Washington, D.C.: Congressional Research Service.
- Horowitz, Juliana Menasce. "How Mexicans See America." *Pew Research Center Global Attitudes and Trends*. May 1.
- Hoskin, Ryan. 2010. "Mexican Drug Violence: Why the Merida Initiative, Gun Bans and Border Controls Will Fail and Drug Reform Is the Solution." *New Voices In Public Policy* 4 (2).
- Hufbauer, Gary Clyde, Cathleen Cimino, and Tyler Moran. 2014. "NAFTA at 20: Misleading Charges and Positive Achievements." Policy Brief 14-13. Washington, D.C.: Peterson Institute for International Economics.

- Hufbauer, Gary Clyde, and Jeffrey J. Schott. 2005. *NAFTA Revisited: Achievements and Challenges*. Washington, D.C.: Institute for International Economics.
- IndexMundi. 2017. “Total Fertility Rate (Mexico).” Accessed March 13.
- Kehoe, Timothy J., and Kim J. Ruhl. 2013. “How Important Is the New Goods Margin in International Trade?” *Journal of Political Economy* 121 (2): 358–92.
- Klein, Michael W., Scott Schuh, and Robert K. Triest. 2002. “Job Creation, Job Destruction, and International Competition: Job Flows and Trade: The Case of NAFTA.” Research Department Working Papers No. 02-8, Federal Reserve Bank of Boston, Boston, Massachusetts, December.
- Koopman, Robert, William Powers, Zhi Wang, and Shang-Jin Wei. 2010. “Give Credit Where Credit Is Due: Tracing Value Added in Global Production Chains.” Working Paper 16426, National Bureau of Economic Research, Cambridge, Massachusetts, September.
- Lederman, Daniel, William F. Maloney, and Luis Servén. 2005. *Lessons from NAFTA for Latin America and the Caribbean Countries: A Summary of Research Findings*. Washington, D.C.: The World Bank.
- Levy, Santiago, and Michael Walton, eds. 2009. *No Growth Without Equity? Inequality, Interests, and Competition in Mexico*. Washington, D.C.: The World Bank.
- Liu, Xuepeng, and Emanuel Ornelas. 2014. “Free Trade Agreements and the Consolidation of Democracy.” *American Economic Journal: Macroeconomics* 6 (2): 29–70.
- López González, Javier. 2012. “Vertical Specialisation and New Regionalism.” PhD thesis, Department of Economics, University of Sussex.
- McDaniel, Christine A., and Laurie-Ann Agama. 2003. “The NAFTA Preference and US-Mexico Trade: Aggregate-Level Analysis.” *The World Economy* 26 (7): 939–55.
- McDonald, Patrick J. 2004. “Peace through Trade or Free Trade?” *The Journal of Conflict Resolution* 48 (4): 547-72.
- Oliver, Ranko Shiraki. 2007. “In the Twelve Years of NAFTA, the Treaty Gave to Me ... What, Exactly?: An Assessment of Economic, Social, and Political Developments in Mexico Since 1994 and Their Impact on Mexican Immigration into the United States.” *Harvard Latino Law Review* 53.
- Ottaviano, Gianmarco I. P., and Giovanni Peri. 2012. “Rethinking the Effect of Immigration on Wages.” *Journal of the European Economic Association* 10 (1): 152–97.

- Primo Braga, Carlos A. 2010. "Import Substitution Industrialization in Latin America: Experience and Lessons for the Future." In *Economic Development in Latin America: Essays in Honour of Werner Baer*, edited by Hadi Esfahani, Giovanni Facchini, and Geoffrey J.D. Hewings, 34–42. New York: Palgrave Macmillan.
- Rimmer, Maureen T., and Peter B. Dixon. 2015. "Identifying the Effects of NAFTA on the U.S. Economy between 1992 and 1998: A Decomposition Analysis." Paper presented at the 18th annual Global Trade Analysis Project conference, Victoria University, Melbourne, Australia, June 17-19.
- Rodrik, Dani. 1992. "The Rush to Free Trade in the Developing World: Why So Late? Why Now? Will It Last?" Working Paper 3947, National Bureau of Economic Research, Cambridge, Massachusetts.
- Sciacchitano, Katherine. 2008. "From NAFTA to the SPP." *Dollars and Sense* 274.
- Scott, Robert E. 2011. "Heading South: U.S.-Mexico Trade and Job Displacement after NAFTA." Briefing Paper 308, Economic Policy Institute, Washington, D.C..
- Smith, Peter H. 1985. "U.S.-Mexican Relations: The 1980s and Beyond." *Journal of Interamerican Studies and World Affairs* 27 (1): 91-101.
- . 1992. "The Political Impact of Free Trade on Mexico." *Journal of Interamerican Studies and World Affairs* 34(1): 1-25.
- Steffan, Mara. 2007. "The Political Impact of NAFTA on the Mexican Transition to Democracy, 1988-2000." *The SAIS Europe Journal of Global Affairs*, April 1.
- Thacker, Strom C. 1999. "NAFTA Coalitions and the Political Viability of Neoliberalism in Mexico." *Latin American Politics and Society* 41 (2): 57–89.
- Transparency International. 2017. "Corruption Perceptions Index 2016." www.transparency.org. Accessed February 22.
- U.S. Census Bureau. 2017. "Trade in Goods with Mexico." Accessed February 22.
- U.S. Department of State. 2017. "Merida Initiative." Accessed April 26.
- U.S. International Trade Commission. 2003. *The Impact of Trade Agreements: Effect of the Tokyo Rounds, U.S.-Israel FTA, U.S.-Canada FTA, NAFTA, and the Uruguay Round on the U.S. Economy*. Washington, D.C.: U.S. International Trade Commission.
- . 2016. *Economic Impact of Trade Agreements Implemented Under Trade Authorities Procedures, 2016 Report*. Washington, D.C.: U.S. International Trade Commission.

Villareal, M. Angeles, and Ian F. Fergusson. 2017. *The North American Free Trade Agreement (NAFTA)*. Washington, D.C.: Congressional Research Service.

Villarreal, M. Angeles. 2010. *NAFTA and the Mexican Economy*. Washington, D.C.: Congressional Research Service.

World Trade Organization. 2002. *Mexico: April 2002*.

Zahniser, Steven, Sahar Angadjevand, Tom Hertz, Lindsay Kuberka, and Alexandra Santos. 2015. *NAFTA at 20: North America's Free-Trade Area and Its Impact on Agriculture*. Washington, D.C.: U.S. Department of Agriculture.

Zylkin, Thomas. 2016. "Beyond Tariffs: Quantifying Heterogeneity in the Effects of Free Trade Agreements." GPN Working Paper, Global Production Networks Centre, College of Arts & Social Sciences, National University of Singapore, Singapore.

Endnotes

¹ That is not to say that Canada is irrelevant when estimating the impact of NAFTA on the U.S. The dropping of trade barriers between Mexico and Canada enabled new business models for American firms that took advantage of Canada-Mexico linkages, which are seen in the auto industry supply chains that operate across all three countries. However, the preponderance of changes in the United States' economic relationship with Canada likely would have occurred anyway because of the earlier free trade agreement.

² Caliendo and Parro (2015) find a 118.28% increase in Mexico's imports from the U.S. and Canada due to NAFTA in their full model, but only an 88.09% increase due to NAFTA when they run their model without intermediate goods and input-output linkages.

³ See Baldwin and Lopez-Gonzalez (2015) for a discussion on different methods of measuring supply chain trade. The OECD classification used here attempts to avoid the potential inaccuracy of classifying intermediate goods by eliminating product lines with mixed usage.

⁴ Note that these are aggregate tariff rates. Rates for individual goods undoubtedly deviated from this pattern.

⁵ Specifically, if imports are not subtracted from exports, the value of intermediate goods will be counted when they cross the border initially, and again whenever they cross at later production stages.

⁶ Most studies that have attempted econometrically to control for these other factors (exchange rates and economic growth in particular) have suffered from two weaknesses that bias the results in opposite directions. First, they mostly use trade data aggregated across all industries. Country-level data is well known to suffer from aggregation bias — that different responses among different industries or products may offset each other, falsely indicating no response at all. Second, NAFTA is measured as a simple year dummy, meaning the results reflect anything that affected the U.S.-Mexico relationship besides exchange rates and economic growth. Studies that examined time series data (Pacheco-López 2005; Congressional Budget Office 2003; Garcés-Díaz 2001) suffer badly from these concerns, but the simple NAFTA measures for those that use panel data in gravity models (Montenegro and Soloaga 2006; Lederman, Maloney, and Serven 2005; Coughlin and Wall 2003; McDaniel and Agama 2003) may also pick up other factors. In these studies, the devaluation of the peso in 1994 and strong U.S. economic growth during the 1990s accounted for a much larger share of trade growth than NAFTA did.

⁷ Petroleum products were not affected by NAFTA (USITC 2003). They are a large component of U.S.-Mexico trade, however, so fluctuations in the price of oil obscure trends in non-petroleum trade.

⁸ Imports and exports are flows, not stocks, so they should not yield a return. Also, they enter GDP as exports net of imports, not summed. However, exports plus imports as a share of GDP is a commonly used metric of openness to trade.

⁹ Bahmani-Oskooee and Hegerty (2011) found NAFTA tilted the trade balance in several chemicals and electronics sectors in favor of the United States.

¹⁰ The breakdown used here focuses on the sector of the input, not which sector uses it. A better approach would use an input-output table to measure what shares of all intermediate imports are used by the transportation and electronics sectors.

¹¹ Other industries like footwear, steel, glassware, and ceramics were also affected (U.S. International Trade Commission 2003, 2016).

¹² The percent increase is from Villareal and Fergusson (2017) and the share calculation is the authors', based on Observatory of Economic Complexity data.

¹³ Authors' calculation based on Observatory of Economic Complexity data.

¹⁴ Also hides and lumber.

¹⁵ See, for instance, Lederman, Maloney, and Serven (2005).

¹⁶ Hakobyan and McLaren (2016) do not estimate the labor market impact of reduced tariffs in Mexico on U.S. exports, which was presumably positive. Nonetheless, any positive impact was apparently insufficient to overcome the negative impact on low-skilled workers and industries protected by U.S. tariffs.

¹⁷ Using 1996 figures on the education of the labor force from the Bureau of Labor Statistics' Current Population Survey and counting those with any college as "skilled," a 4% decline in wage growth for those without high school diplomas would imply an increase of the skill premium of 1%. This is larger than the impact that De La Cruz and Riker (2014) find: only a 0.005% rise in wages of skilled workers relative to unskilled workers.

¹⁸ These two examples also demonstrate the difficulty of interpreting the industry data presented in 00 and 00 and noted in endnote 7. They are classified as mechanical and electronic goods respectively, not transportation.

¹⁹ Not everyone agrees that NAFTA has been good for Mexico, even if it has brought added dynamism to the country's economy. Some have in fact argued that it has resulted in a greater accumulation of economic and political power in the hands of a few. The paradox here is that even if we accept that poverty and inequality in Mexico have grown under NAFTA, undocumented migration from Mexico the U.S. has fallen (Esquivel 2017).