Transportation Policy Brief #6

Potential Implications of the Trans-Pacific Partnership for Transportation Planning in Texas


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BEATRICE HALBACH

September 2015

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FOREWORD

The Lyndon B. Johnson School of Public Affairs at The University of Texas at Austin has established interdisciplinary research on policy problems as the core of its educational program. A major part of this program is the nine-month policy research project (PRP), in the course of which two or more faculty members from different disciplines direct the research of 10 to 20 graduate students of diverse backgrounds on a policy issue of concern to a government or nonprofit agency.

During the 2014–2015 academic year, the Texas Department of Transportation (TxDOT) supported a policy research project on manufacturing trends in Texas and Mexico, addressing six key policy issues. The project was a collaboration of the Center for Transportation Research (CTR) and the Lyndon B. Johnson School of Public Affairs at The University of Texas at Austin, and the Center for Economic Development and Research at the University of North Texas.

The research team interacted with TxDOT officials throughout the course of the academic year. Overall direction and guidance was provided by Mr. Marc Williams, Director of Planning for TxDOT. Mr. Williams participated in an October 10, 2014, workshop to determine the scope of the study. As a consequence, the following policy issues were selected for study:

1. Texas Manufacturing Competitiveness;
2. Reshoring in Texas;
3. Nearshoring in Mexico;
4. Inland Ports and Logistics Hubs;
5. Intra-Industry Trade; and
6. Implications of the Trans-Pacific Partnership on Transportation in Texas.

The findings of each policy issue are presented within the context of separate transportation policy briefs. This particular policy brief, “Implications of the Trans-Pacific Partnership on Transportation in Texas,” was researched and written by Beatrice Halbach.

ACKNOWLEDGEMENTS

This policy research project would not have been possible without the generous contributions of numerous individuals and organizations. For Policy Brief #6, we are especially grateful to Ian Fergusson, Specialist in International Trade and Finance at the Congressional Research Service, for providing valuable expertise on industry and country implications of the Trans-Pacific Partnership (TPP) as well as additional contacts. We are also grateful to Jim Kruse, Director of the Center for Ports & Waterways at the Texas A&M Transportation Institute, for his insights on transportation-related implications of the TPP for the state of Texas and for providing additional contacts and research. We are thankful to M. Angeles Villarreal, Specialist in International Trade and Finance at the Congressional Research Service, for her insights on the potential effects of the TPP on the Texas-Mexico relationship and for providing research materials. We are indebted to Juan Carlos Villa, Regional Manager of Latin America at the Texas A&M Transportation Institute, for providing his expertise on ports and shipping corridors and for providing additional contacts and research materials. We are especially grateful for the help of Louise Rosenzweig at the Center for Transportation Research for providing essential research materials on NAFTA and the TPP.

We are also very grateful to and acknowledge the following TxDOT officials and transportation and border trade experts for participating in weekly class presentations or scheduled interviews:

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- Mario Maldonado, Bridge Manager, Laredo International Bridge Systems
- Mike Garza, U.S. Customs & Border Protection Officer, U.S. Customs & Border Protection - Free and Secure Trade Office

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EXECUTIVE SUMMARY

The Trans-Pacific Partnership (TPP) is a trade agreement currently under negotiation by the United States and 11 other nations, primarily in Southeast Asia and Oceania. This report identified four major implications of the TPP for transportation in the state of Texas:

- **Direct Effects on the U.S.-Mexico Relationship:** The TPP is likely to affect the U.S.-Mexico trade relationship directly through the enforcement of rules that facilitate the movement of goods and services across borders and provisions that ask for commitments from members to collaborate on regulation. These provisions could redouble existing efforts at bilateral cooperation on the border and on cross-border transportation, such as the 21st Century Border Initiative and the work by the Joint Working Committee (JWC) on Transportation Planning.
- **Changing Industry Supply Chain Decisions:** The term *global value chains* (GVCs) refer to the optimization of the production process, from raw materials to finished products. By locating various stages of production across different countries, wherever the necessary skills and materials are available at competitive cost and quality, manufacturers have made GVCs a defining aspect of trade over the last two decades. The removal of trade barriers in certain sectors could affect how and where industries choose to source materials, which could lead to the restructuring of U.S.-Mexico and global supply chains in major industries.
- **Expanded Trade with Asia:** Deepening U.S. economic integration with emerging markets in Asia could compete with U.S.-Mexico trade, expand upon it, or result in a combination of both. In addition, the TPP includes a strong emphasis on building GVCs that include U.S. companies. Both effects imply changes in the direction and volume of trade and in the movement of goods across Texas.
- **Reconfiguration of Shipping Routes:** Increased trade volumes with Asia will affect where shipping companies choose to route goods. This will provide opportunities for Texas ports to receive some of this trade, given the state's large population, geographic advantages, and competitive transportation infrastructure.

The TPP will fundamentally alter the nature of the U.S.-Mexico trade relationship and likely pose new demands on transportation and border infrastructure in the state of Texas. TxDOT is well-positioned to capture these changes and incorporate them into transportation planning to help Texas secure the benefits of a successful TPP. Specifically, TxDOT can incorporate the analysis of trade dynamics and industry supply chains into the agency's planning process to better predict future transportation needs. TxDOT can also continue crucial investments in transportation infrastructure that make Texas a competitor for attracting shipping companies in search of reliable and cost-effective alternatives to West Coast ports.

BACKGROUND

The aim of this report is to examine the potential effects of the proposed Trans-Pacific Partnership (TPP) on U.S.-Mexico ties forged through existing agreements—namely the North American Free Trade Agreement (NAFTA)—and to pinpoint opportunities for TxDOT to strategize and position itself for the likely challenges and transformations caused by the rise of the TPP and other large, mega-regional free trade agreements (FTAs).

FTAs, whether bilateral, multilateral, or regional in scope, have become increasingly important to the global economy. Since the landmark Uruguay Round negotiations and the establishment of the World Trade Organization (WTO) in 1994, nations of the world have ratified over 200 regional trade agreements. While regional trade agreements continue to play an important role in global trade, the more recent trend has been away from bilateral agreements and agreements between neighboring countries and toward large regional agreements between countries in different regions.[1] "Mega-regional trade agreements" such as the TPP and the Transatlantic Trade and Investment Partnership could supersede the European Union and NAFTA, currently the world's two largest free trade regions by value.[2] This new class of mega-regional trade agreements differs from traditional regional agreements in nature as well as scope, namely by including countries at different levels of development and by aiming to reach deeper agreement on a broader set of issues.[3]

With negotiations for the TPP underway, it is difficult to predict the agreement's substantive outcome, or even to know when negotiations will be completed. However, despite the agreement's confidentiality, the Obama Administration has been vying for congressional and constituent support for the TPP in anticipation of a successful deal in 2015.

While some potential impacts of the TPP remain unclear, such as various industries' potential reactions to specific TPP provisions, if ratified, the agreement could have profound effects on U.S.-Mexico trade relations and on the flow of goods to, from, and across the state of Texas. First and foremost, a successful TPP would mean significant changes in the nature of U.S. trade with emerging economies in Asia, which would subsequently affect the dynamics of trade with TPP and NAFTA partners, Canada and Mexico. Together, these impacts would generate changes in the volume and flow of U.S. trade with Asia and Mexico (among others) and lead to the reconfiguration of trade lanes with these countries. These changes could require TxDOT to respond to new transport infrastructure demands on the Texas-Mexico border. In addition, expanded trade with Asia provides opportunities for Texas to capitalize on its large population and geographic advantages to draw higher volumes of cargo to the state's maritime ports, especially in the context of crowded U.S. West Coast ports.

Like previous FTAs, the TPP aims to enhance the efficacy of international trade. However, the agreement will be much more comprehensive in scope, including provisions on joint

[1] Azevêdo, "Regional Trade Agreements."
[2] World Economic Forum, "Mega-Regional Trade Agreements."
[3] Ibid.

development activities with less-developed member countries, labor standards, environmental commitments, competition between state-owned enterprises and private companies, intellectual property rights, and the free flow of data in a digital economy. Some TPP provisions have the potential to update existing norms of U.S.-Mexico trade under NAFTA, especially with regard to rules-based frameworks on common rules of origin, customs and trade facilitation, and regulatory coherence. Overall, the TPP aims to create a comprehensive, high-standard, modern trade agreement that expands upon norms of existing trade agreements.

In combination, these effects provide several challenges for TxDOT. The organization needs to actively understand the patterns of traded goods and not just their overall volume. The nature and dynamics of trade are changing in ways that affect the demand for transportation infrastructure in Texas. If Congress ratifies the TPP, these dynamics could change even more. One important example is the increasing emphasis on creating global value chains (GVCs), which refers to the optimization of the production process, from raw materials to finished products, by locating various stages across different countries wherever the necessary skills and materials are available at competitive cost and quality. GVCs have altered the nature of trade in finished goods toward a flow of intermediate goods that may cross borders several times before becoming a final product. In fact, according to a 2010 study for the National Bureau of Economic Research, 24.7 percent of U.S. imports from Canada and 39.8 percent of U.S. imports from Mexico consist of value added from U.S. manufacturing.[4] This trend has been especially important for U.S.-Mexico trade in the automotive industry (see Transportation Policy Brief #3). Current TPP negotiations include several provisions that emphasize the importance of fostering new GVCs in Asia that include U.S.-based companies.

TxDOT's current and long-term interests should include a strategy for incorporating these understandings into long-term transportation planning for the state. In addition, TxDOT should be aware of how the tendency toward large, multi-region trade agreements like the TPP is likely to restructure existing U.S. trade relationships and trade corridors and change both the volume and flow of trade, potentially generating new demands for transportation infrastructure or capacity.

NAFTA AND THE RISE OF GLOBAL VALUE CHAINS

When NAFTA came into force on January 1, 1994, it was the largest and most comprehensive FTA at the time. It sought to remove tariff and non-tariff barriers to trade over a 15-year period, particularly in the textiles, automotive, and agricultural sectors. It also contained historic provisions on rules of origin, foreign investment, intellectual property rights, dispute resolution, and government procurement, along with two landmark side agreements on labor rights and environmental protection.[5]

[4] Koopman et al., "Give Credit Where Credit Is Due."
[5] Villarreal and Fergusson, "NAFTA at 20: Overview and Trade Effects."

NAFTA was very controversial in the United States when Congress was considering its ratification, and it continues to generate debate today. Proponents of NAFTA claim the FTA has resulted in the following:

- A more level playing field for U.S. small- and medium-sized businesses exporting products;
- Almost 5 million U.S. jobs supported by increased trade from NAFTA;
- A gradual shift from low-paying, low-skilled jobs to higher-paying jobs in export-driven industries in the United States;
- A quadrupling of U.S. exports of goods and services to Mexico and Canada;
- Lower prices for American consumers and companies seeking raw materials and other inputs due to increased imports; and
- Enhanced competition of North American industry through the development of GVCs, which will be discussed in more detail in the next section.

In addition, NAFTA proponents insist that less than one percent of U.S. manufacturing jobs have been lost to offshoring, that most low-skilled manufacturing jobs have actually been lost to increases in productivity related to technological innovation, and that the U.S. trade deficit is driven by crude oil imports from Canada and Mexico, not from trade in goods and services.[6]

In response, critics of NAFTA point to various problems after 1994, including:

- Severe job erosion and depressed wages in the United States due to imports from Mexico and Canada and the relocation of factories to those countries;
- An increase in U.S. subsidized corn exports in the decade after NAFTA implementation, leading to job displacement in Mexico's rural economy and lower wages in Mexico's maquiladora factory zone; and
- U.S. goods and agriculture trade deficits with Mexico and Canada.[7]

Overall, critics do not deny that NAFTA has led to an increase in the volume of trade between the United States, Mexico, and Canada, but insist that the comprehensive effects have been to the detriment of employment, real wages, social mobility, and economic inequality.[8] Critics of NAFTA also point to decreasing environmental and health standards due to foreign investor privileges and rising prices for basic consumer goods combined with stagnating wages in Mexico.

While it is difficult to disentangle the effects of NAFTA from other variables such as economic liberalization in Mexico and the global recession, one of the most notable effects of NAFTA on the U.S.-Mexico relationship has been the development of integrated GVCs, especially in the transportation equipment, chemical, electrical equipment, and food processing sectors where the elimination of trade barriers was most focused.

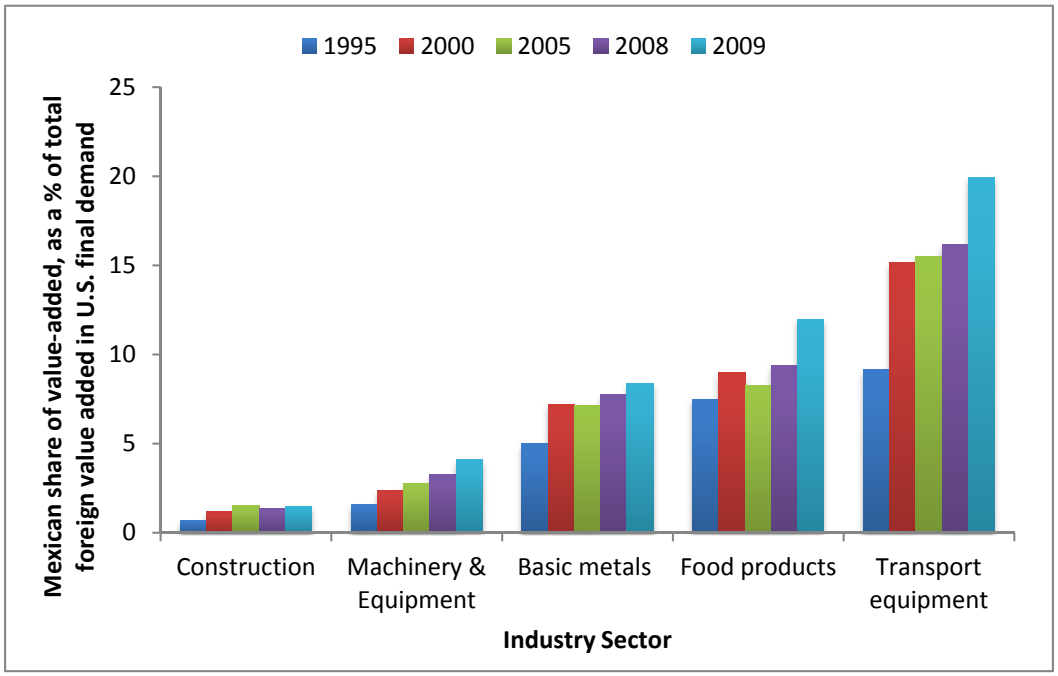
[6] U.S. Chamber of Commerce, "NAFTA Triumphant."
[7] Beachy, "NAFTA's 20-Year Legacy and the Fate of the Trans-Pacific Partnership."
[8] Ibid.

MEASURING TRADE IN VALUE-ADDED TERMS

The rise of GVCs means that it is no longer appropriate to measure trade only in terms of exports and imports of final goods because it introduces a problem of "double-counting" the intermediate goods that have crossed the same border several times and have been incorporated into the final good. For transportation purposes, however, even if trade volumes are double-counted, they are still generating the cross-border movement of goods. Nevertheless, TxDOT should be aware of how to interpret trade data when presented in value-added terms, since they are increasingly used by economists. Trade in value-added data can yield valuable insights on trade dynamics and the integration of supply chains in various sectors that would otherwise be missed. Several agencies, including the Organization for Economic Co-operation and Development (OECD), the WTO, and the United Nations Council on Trade and Development, among others, have developed ways of measuring trade in value-added terms.

Figures 1, 2, and 3 and Table 1 were created using data extracted from the OECD-WTO Trade in Value Added (TiVA) database. Figure 1 shows Mexico's share of value added as a percent of the total foreign value added in U.S. final demand (domestic sales) in five industry sectors that experienced the largest increases. As can be seen from Figure 1 and Table 1, Mexico's share in value-added of U.S. final demand increased significantly in several sectors from 1995 to 2009, most notably in the machinery and equipment sector (156 percent increase), the construction sector (122 percent increase), and the transport equipment sector (118 percent increase). These data indicate that U.S.-Mexico supply chains in these sectors were increasingly integrated from 1995 to 2009. For example, by 2009, U.S. domestic sales in the transport equipment sector consisted of almost 20 percent of Mexico-derived materials, a strong indicator of increased integration in the automotive sector. Overall, Mexico's total share in value-added of U.S. final demand across all industry sectors increased by 24 percent, from 5.4 percent in 1995 to 6.7 percent in 2009 (see Appendix for data on all sectors).

Figure 1. Mexican Share in Value-added of U.S. Final Demand, Industries with Top Increases, 1995–2009



Source: OECD, "Trade in Value Added (TiVA) Database."

Table 1. Top Increases in the Mexican Share in Value-added of U.S. Final Demand, 1995–2009

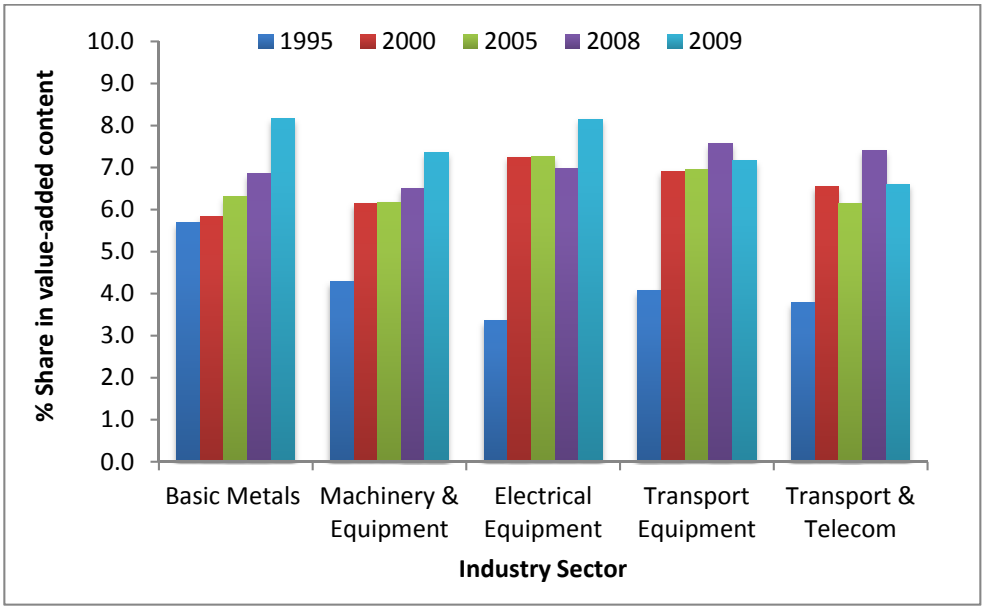
Industry Sector	1995 Share, %	2009 Share, %	% Increase, 1995-2009
Machinery and Equipment	1.6	4.09	156
Construction	0.67	1.49	122
Transport Equipment	9.14	19.95	118
Basic Metals	4.99	8.39	68
Food Products	7.46	11.95	60

Source: Author's calculations from OECD, "Trade in Value Added (TiVA) Database."

Figure 2 shows the Mexican share of value-added content in U.S. gross exports from 1995 to 2009 for some of the biggest industrial sectors (by share of value-added content). Figure 3 shows the matching figure for the United States. Looking at these two figures in comparison, one can draw several conclusions about the level of integration in these major sectors between 1995 and 2009. The first thing to note is that, among all sectors, the highest Mexican share in value-added content of U.S. gross exports was only 8.2 percent in the basic metals sector in 2009, while the highest U.S. share in value-added content of Mexican exports reached a whopping 78.3 percent in 2000 in the electrical equipment

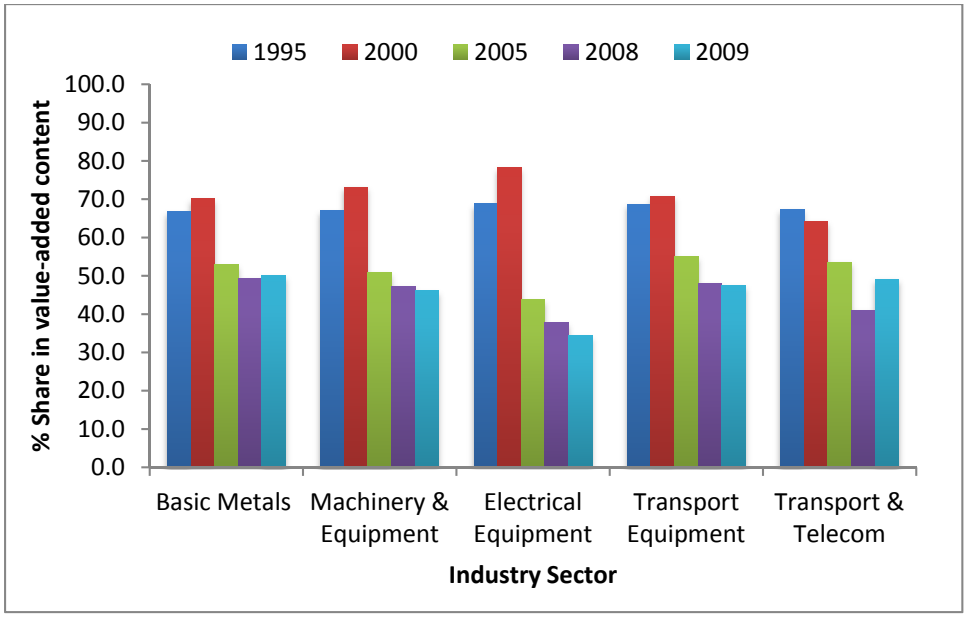
sector. This indicates that the level of U.S-value added content in Mexican exports is significantly more important than the level of Mexican value-added content in U.S. exports.

Figure 2. Mexican Share in Value-added Content of U.S. Gross Exports, as a Percent of Total Foreign Value Added in U.S. Exports, 1995–2009



Source: Author's calculations from OECD, "Trade in Value Added (TiVA) Database."

Figure 3. U.S. Share in Value-added Content of Mexican Gross Exports, as a Percent of Total Foreign Value Added in Mexican Exports, 1995–2009



Source: Author's calculations from OECD, "Trade in Value Added (TiVA) Database."

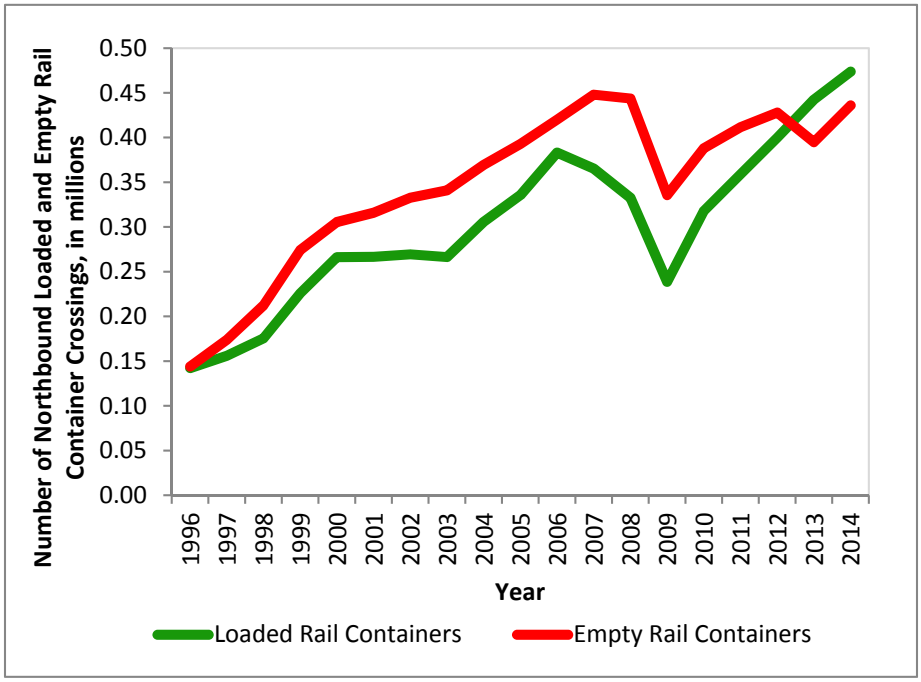
Furthermore, from 1995 to 2009, U.S. exports increasingly consisted of Mexican value-added content, while Mexican exports consisted less and less of U.S. content across all sectors. This trend suggests that Mexico's export economy has become less dependent on U.S. value-added content over time. Meanwhile, U.S. exports have become increasingly dependent on Mexican value-added content. This trend could be due to several factors. First, the negative effects of the global recession on U.S. exports and on trade between the two countries likely played a role in any declines occurring after 2008. In addition, the declining Mexican dependence on U.S. value-added content likely reflects the increasing manufacturing competitiveness of the Mexican economy. In other words, it could be that Mexican exports are simply becoming less reliant on foreign value-added content overall as its domestic economy becomes stronger. However, the data could also be an indicator that Mexico's exports are becoming more reliant on value-added content from non-U.S. countries with which it is expanding its trade relationships.

Overall, the increases in Mexico's share of value-added in U.S. domestic final demand from 1995 to 2009 and the high shares of U.S. and Mexican value-added content in both U.S. and Mexican exports across five major industrial sectors indicate that supply chains in these industries are highly integrated. The high level of economic integration poses particular challenges to the Texas-Mexico border region, since the costs of increased congestion and long waiting times at the border are multiplied when intermediate goods must move across the border several times before becoming a final product.

Figure 4 shows the number of northbound loaded and empty truck containers and the total number of northbound trucks entering the United States from Texas ports of entry (POEs) between 1996 and 2014. Similarly, Figure 5 shows the number of northbound loaded and empty rail containers entering the United States from Texas POEs over the same time period. Simply measuring the total number of trucks or trains is not necessarily indicative of trade patterns, because some trucks or train cars will be empty after having made a delivery. As both figures demonstrate, U.S.-bound loaded truck and rail containers have increased significantly since NAFTA, likely due to increased exports to Texas and the United States.[9]

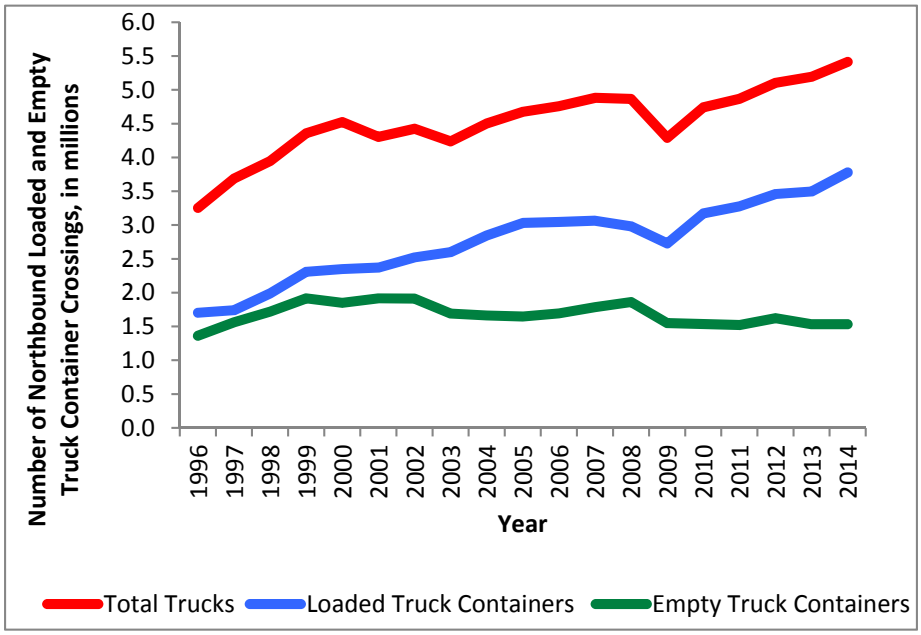
[9] Seedah, Overmyer, and Harrison, "Border Corridors and Trade Report."

Figure 4. Loaded and Empty Truck Containers Entering the United States from Texas Ports of Entry, 1996–2014



Source: U.S. Bureau of Transportation Statistics, "Border Crossing/Entry Data."

Figure 5. Loaded and Empty Rail Containers Entering the United States from Texas Ports of Entry, 1996–2014



Source: Bureau of Transportation Statistics, "Border Crossing/Entry Data."

Figure 5 also shows that there were more empty rail containers than loaded rail containers moving across the border until 2013, when the number of loaded rail containers overtook

the number of empty ones.[10] This is further indication that the amount of actual cargo moving into Texas and the United States is increasing, and also supports the reshoring phenomenon in Mexico (see Transportation Policy Brief #3).

As has been heavily documented in previous research, increased trade flows between the United States and Mexico, partially due to the increased integration of supply chains and the increased movement of intermediate goods across the border several times, have caused significant congestion along the Texas-Mexico border region (see Figures 4 and 5). According to the U.S. Chamber of Commerce, one of the greatest challenges to NAFTA moving forward is the increased cost of doing business, since the implementation of enhanced security measures on the U.S.-Mexico border after the September 11, 2001, terrorist attacks.[11] Business leaders and transportation experts emphasize the need for more investment on border infrastructure, technology, and efficient transportation to ensure the future success of the partnership.[12,13,14] Others stress the need for immigration reform and a mobility agreement for workers. Most solutions to these issues call for more efforts at cross-country collaboration, especially on regulation. Indeed, various bilateral efforts to address these and other issues have been completed and others are under way, although none of these efforts contain legally binding commitments or obligations.

SUMMARY OF BILATERAL/TRILATERAL COOPERATION EFFORTS

THE JOINT WORKING COMMITTEE ON TRANSPORTATION PLANNING

Shortly after NAFTA was ratified in 1994, the United States Department of Transportation and the Mexican Secretariat of Communication and Transportation (SCT) signed a Memorandum of Understanding establishing the Joint Working Committee (JWC) to facilitate the coordination of the transportation-planning process along the border.[15] A second Memorandum of Understanding was signed in October 2000. Transportation professionals from the Federal Highway Administration, the Mexican SCT, the U.S. Department of State, the Mexican Secretariat of Foreign Relations, the four U.S. border state Departments of Transportation, the six Mexican border states, the General Services Administration, and the U.S. Customs and Border Protection of the Department of Homeland Security have participated in JWC meetings. The JWC has brought about various advancements in terms of cooperation on border infrastructure projects, such as the completion of five out of six border master plans to integrate national corridors to city

[10] What the Bureau of Transportation Statistics defines as a container may not be an intermodal container. It gives the following as examples of containers: Stakebed truck, truck with a car carrier, van, pickup truck/car, flatbed truck, piggyback truck with two linked trailers/containers equals two containers, straight truck, bobtail truck, railcar, rail flatbed car stacked with four containers equals four containers (on each rail car if there is multiple box containers count each container and the flatbed car.), and tri-level boxcar with multiple containers inside equals three containers.

[11] U.S. Chamber of Commerce, "NAFTA Triumphant."

[12] Dempsey, "NAFTA at 20."

[13] Villarreal and Fergusson, "NAFTA at 20."

[14] Rathbone, "Mexico and NAFTA at 20."

[15] U.S. Department of Transportation Federal Highway Administration, "U.S.-Mexico Joint Working Committee on Transportation Planning."

networks and exchange workshops on Intelligent Transportation Systems. Three of these master plans have been conducted in Texas (Rio Grande Valley, El Paso, and Laredo) and are seen as a widely respected tool for states, local communities, U.S. Customs and Border Protection, metropolitan planning organizations, and other cross-country agencies to prioritize advancements and evaluate projects along the Texas-Mexico border. The JWC has also engaged in efforts to implement automated border crossing and delay measuring systems at POEs along the U.S.-Mexico border.

SECURITY AND PROSPERITY PARTNERSHIP

In 2005, the leaders of Canada, Mexico, and the United States launched the Security and Prosperity Partnership (SPP) to increase cooperation and information-sharing and to enhance security and prosperity among the three countries. SPP working groups created strategies and frameworks for addressing major priorities of all three countries, including a working group to analyze border trade and traffic flows to support border infrastructure planning and a regulatory cooperation framework.

NORTH AMERICAN LEADERS' SUMMITS

The SPP developed into North American Leaders' Summits, held annually since 2005 (except for 2013). The purpose of these meetings is for the countries to discuss shared commitments and priorities and to announce initiatives to enhance trilateral cooperation. For example, at the most recent Leaders' Summit, held in Mexico in early 2014, the leaders agreed to create a North American Transportation Plan, beginning with freight planning, and to strengthen trilateral regulatory cooperation in order to ease burdens on businesses.

21ST CENTURY BORDER INITIATIVE

In 2010, the United States and Mexico launched the 21st Century Border Initiative, in which both governments pledged to collaborate on issues of border administration, including security and immigration. This led to the release of the Beyond the Border (BTB) Action Plan in December 2011, which set out joint priorities for addressing a broad range of border and cooperation issues. The BTB plan established an executive steering committee to oversee implementation of the plan, and has since published annual reports on the state of implementation.

HIGH LEVEL ECONOMIC DIALOGUE

In 2013, the United States and Mexico established the High Level Economic Dialogue (HLED), a Presidential cabinet-level platform for enhancing strategic economic and commercial priorities of both countries. The HLED is a mostly political effort to develop shared priorities, to push for further coordination, and to ensure that these priorities are applied in the work of regional transportation planning entities. Continuous bilateral engagement occurs between the United States and Mexico throughout the year as part of the HLED, and the implementation of any work plans or agreements reached via the HLED is generally left to working groups such as the JWC.

While these bilateral efforts have led to tangible improvements on cooperation along the U.S.-Mexico border, some argue for deeper North American integration efforts, especially in the face of rising competition from emerging Asian economies. The TPP is an avenue for potential "updates" to NAFTA, especially regarding rules-based provisions. If ratified by Congress, it would constitute the first legally binding international trade agreement to involve the United States, Mexico, and Canada since NAFTA.

THE TRANS-PACIFIC PARTNERSHIP

The TPP is a multi-regional trade agreement currently being negotiated between the United States, Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. If ratified, it would constitute one of the largest and most comprehensive trade agreements to date. TPP countries collectively comprised 40 percent of U.S. goods trade and 24 percent of U.S. services trade in 2013.[16] Canada and Mexico are by far the United States' largest economic trading partners among TPP countries, accounting for 74 percent of trade in total goods and 52 percent of services trade with TPP countries in 2013.[17]

Although the United States already has FTAs with six TPP participants (Australia, Canada, Chile, Mexico, Peru, and Singapore), the rules being negotiated in the TPP are intended to be more comprehensive than those found in any existing bilateral or multilateral agreements. The partnership hopes to enlarge market access, set high-level standards for trade rules, and address concerns of a modern and increasingly global economy. Some unprecedented provisions would include strong and enforceable standards for labor and commitments on the environment, new rules for fair competition between state-owned enterprises and private companies, a special focus on ensuring that small- and medium-sized businesses benefit from the agreement, and obligations regarding intellectual property rights enforcement and a free digital economy. Furthermore, the TPP includes chapters on specific industrial sectors, separate chapters on trade in goods and in services, dispute settlement, and an additional chapter only addressing U.S.-Japan bilateral negotiations on motor vehicle trade and non-tariff measures. The TPP is especially unique for its inclusion of chapters on regulatory coherence and transparency and on joint development, and for emphasizing the development of integrated supply chains throughout various chapters.

POTENTIAL EFFECTS OF RULES-BASED TPP PROVISIONS

One important way in which the TPP could affect NAFTA and particularly the U.S.-Mexico relationship is via provisions in the agreement that affect the rules governing various sectors. For example, the TPP aims to create rules that go beyond those in NAFTA regarding intellectual property rights, investment, services, government procurement, labor, and environmental provisions. A successful TPP could force Mexico (and Canada) to

[16] Villarreal and Fergusson, "NAFTA at 20."
[17] Ibid.

adhere to stronger and more enforceable rules in these areas, as well as on competition between state-owned enterprises and the private sector.[18]

Additionally, the TPP strongly emphasizes rules that will facilitate the movement of goods and services across borders and build efficiencies for businesses engaging in trade by asking for specific commitments from members to collaborate on regulation. This could have important effects on the U.S.-Mexico border region. For example, in its chapter on customs, trade facilitation, and rules of origin, the TPP states that it will seek "Commitments that will ensure the quick release of goods through customs, expedited procedures for express shipments, advance rulings, and transparent and predictable customs regulations."[19] Given the many challenges present along the U.S.-Mexico border, this provision could place renewed emphasis on efforts to improve border congestion times and to implement modern transportation technology systems, especially in the context of increased volumes of trade from Asia**.**

Furthermore, the TPP's chapter dedicated to building regulatory coherence with member countries could redouble bilateral collaboration efforts between the United States and Mexico. For example, the United States is asking members for "commitments to promote greater transparency, participation, and accountability in the development of regulations… and other procedures that affect trade and investment, and providing opportunities for stakeholder comment on measures before they are adopted."[20] It is notable that the TPP constitutes the first time in history that a United States trade agreement includes a chapter on regulatory coherence, which indicates the growing recognition of this issue as an indispensable part of a successful trade partnership.

Another issue that could affect trade in major industries is the United States' asymmetric negotiation of preferential treatment rules with different countries. Those countries initially favorable to the TPP expected that any market access negotiations, exceptions to rules of origin,[21] and phase-outs of tariffs would be negotiated together among all member countries. However, the United States is only negotiating bilateral market access provisions with countries with which it does not already have FTAs. This strategy is partially in response to criticism from the WTO and others that the TPP and the rise of trade agreements more generally cause a "noodle-bowl" effect within the world trade system, meaning that the combination of multilateral, bilateral, and mega-regional trade agreements create an overlapping and complex mass of preferential trade rules. One area where asymmetric negotiation could potentially become contentious is in the textiles and apparel sector. Traditionally (and in NAFTA), the United States has insisted on a "yarn-forward" rule, meaning that textiles and apparel must be produced from yarn originating in FTA member countries to qualify for preferential treatment. However, Vietnam favors a "cut-and-sew" rule that would allow textile and apparel companies that source cheaper materials from China to benefit from the TPP, creating unfair competition with countries

[18] Ibid.
[19] United States Trade Representative, "Customs, Trade Facilitation, and Rules of Origin."
[20] United States Trade Representative, "Transparency, Anticorruption and Regulatory Coherence."
[21] Rules of origin ensure that only goods originating in the FTA member countries enjoy preferences; a common TPP rule of origin would be highly beneficial to the integration of supply chains.

like Peru and Mexico that must adhere to the yarn-forward rule. A "cut-and-sew" rule would allow textiles sourced from any country to qualify for TPP benefits as long as they are cut and sewn into apparel in a TPP country.

POTENTIAL INDIRECT CONSEQUENCES OF THE TPP

While specific provisions will likely have some effect on the U.S.-Mexico trade relationship, the most significant impacts of the TPP will likely be those caused by indirect or unforeseen consequences. For example, the TPP strongly emphasizes provisions that will encourage the development of highly integrated supply chains in member countries that include U.S. companies. It remains unclear how this will influence industry decisions regarding the sourcing of inputs, based upon where the cheapest and highest-quality materials can be obtained. Undoubtedly, these decisions will be affected by the removal of trade barriers with several emerging Asian economies in the context of a successful TPP.

It also remains unclear how the nature of U.S.-Mexico trade and supply chain integration will change in the context of a successful TPP, as it depends on how specific industry sectors across the member countries will respond to new provisions. For example, if the U.S. is successful in negotiating for reduced or removed trade barriers in Japan's automotive sector, there could be new opportunities for U.S.-Mexican automobile exporters.[22] Increased exports of autos jointly produced by the United States and Mexico to Japan and other parts of Asia would likely increase the flow of automotive parts traveling across the Texas-Mexico border, increasing the importance of efficient border transportation infrastructure, rail, and roads.

Another uncertainty is how a U.S. shift toward emerging markets in Asia like Malaysia, Brunei Darussalam, and Vietnam will affect particular industries and the U.S.-Mexico relationship. Overall, the TPP aims to deepen U.S. economic integration with these countries. For instance, the TPP is the first U.S. trade agreement to include a chapter specifically dedicated to cooperative development. It emphasizes trade capacity building and joint development activities, including public-private partnerships, science and technology cooperation, and the creation of sustainable economic models. As mentioned previously, it also includes an emphasis on fostering the growth of GVCs in Asia that include U.S. companies. It remains unclear whether these efforts to increase economic integration with Asia will compete with or expand upon U.S.-Mexico trade, or both. Additionally, it may generate trade in new industries that have different kinds of transportation needs.

Another debatable effect of the TPP is how shipping companies would respond to increased volumes of North American trade with Asia—an issue with direct implications for transportation in Texas. In response to a 2014-2015 protracted labor dispute that caused severe delays and congestion at the California Ports of Los Angeles and Long Beach, some businesses diverted shipments to Canada's Port of Vancouver and the Port of Prince Rupert

[22] Benka and Krist, "The Auto Industry Has a Lot at Stake in TPP and TTIP."

or through the Panama Canal to New York and to Georgia's Port of Savannah.[23] In a recent survey conducted by the Journal of Commerce, 65.4 percent of 138 shippers surveyed said they plan to ship less cargo through West Coast ports in 2015 and 2016, and of those planning to re-route cargo, 16 percent said that they would move the majority through U.S. Gulf Coast ports.[24] Given that the Port of Houston handled 67 percent of Gulf Coast container traffic and was the first ranked U.S. port in foreign tonnage in 2014, it is well-positioned to benefit from increased trade volumes from Asia and will be better positioned following the opening of the expanded Panama Canal.[25]

Alternately, transportation experts express skepticism that ports on the U.S. East and Gulf Coasts and the Mexican West Coast will see increased U.S.-bound trade volumes from Asia in the future due to the strategic location of U.S. West Coast ports and their superior capacity. For example, a ship takes an average of 20-32 to days to travel from Shanghai to Los Angeles, but an average of 24-40 days to travel from Shanghai to the Mexican West Coast Port of Lázaro Cárdenas.[26] In addition, intermodal rail service from the Port of Lázaro Cárdenas to the U.S. Midwest is still inferior to BNSF Railway and Union Pacific Railroad's connections to the Midwest, despite heavy investment in Mexico's rail infrastructure.[27]

Nevertheless, shippers stress the importance of having flexibility and options in supply chains, and emphasize reliability and cost as important factors in supply decisions, perhaps even over transit time.[28] The state of Texas is well positioned to take advantage of any potential increases in trade volumes with Asia as a result of a successful TPP, given its growing population and its strategic location on the Gulf Coast. However, the state's ability to capitalize on these potential benefits depend on continued investment in improving the reliability, efficiency, and competitiveness of its transportation infrastructure, including the Texas-Mexico border, roads, intermodal rail, Gulf ports, and maritime transport.

POLICY RECOMMENDATIONS

The TPP has the potential to fundamentally alter the nature of the U.S.-Mexico trade relationship and pose new demands on transportation and border infrastructure in the state of Texas. The challenge for TxDOT is how to capture these changes and incorporate them into transportation planning to ensure that the state is in the best position to secure the potential benefits of a successful TPP.

There are several strategies that TxDOT could pursue to meet this challenge. The most important one would be to incorporate the analysis of trade dynamics into long-term transportation planning. As was highlighted by the impact of NAFTA on the development of GVCs and, in turn, their considerable effect on the Texas-Mexico border and on transportation demands in Texas, the analysis of trade trends and patterns—not just in

[23] Nash and Krause-Jackson, "Asia-U.S. Trade Growth Adds to East-West Ports Rivalry."
[24] Szakonyi, "65 Percent of Shippers in JOC Survey Say They'll Divert from West Coast."
[25] The Port of Houston Authority, "Trade Statistics."
[26] Szakonyi, "Mexican Ports Unlikely to Win Big from West Coast Rerouting."
[27] Ibid.
[28] Panama Canal Stakeholder Working Group, "Preparing Texas Land and Sea for the Panama Canal Expansion."

terms of volume, but especially in terms of changing industry and country dynamics—can be a valuable tool for anticipating future transportation needs. With respect to this task, TxDOT should be aware that accurate measurement of trade flows requires using data in value-added terms, a task that agencies such as the OECD, the WTO, and others have recently undertaken at the international level. TxDOT needs to explore these issues at the subnational level.

Furthermore, TxDOT should be aware of how trade activity is changing in sectors that stand to benefit the most from supply chain integration. Currently, U.S.-Mexico supply-chains are most highly integrated in the transport equipment, chemicals and minerals, electrical equipment, and food products sectors. If the TPP is successful, these industries could see increased pressure to integrate more fully and to operate more efficiently in response to greater competition from Asia. On the other hand, other sectors that are currently not taking advantage of supply chain integration might be pressured to do so under increased competition from Asia. These dynamics could place increased strains on the Texas-Mexico border, depending on which industries are most affected, on where companies will seek cost-efficiencies, and on which industries engage in GVCs with Asia, which will affect air, water, rail, and truck modes.

TxDOT could also engage in industry-specific analyses to determine which industries are likely to undergo significant change in response to a successful TPP by determining what industries are likely to benefit from new GVCs in Asia and generate new transportation needs. Some industries, such as the automotive, agricultural, and electronics sectors, may have more at stake from the TPP, and thus these sectors may see more movement in terms of where inputs are sourced.

Finally, increased volumes of trade from Asia will increase the demand for U.S. maritime ports and state-wide transportation infrastructure to be efficient and reliable. TxDOT should continue investments in border infrastructure and technology and transportation infrastructure that give Texas the best chance at attracting shipping companies searching for reliable and cost-effective alternatives to West Coast ports, especially in the context of increased trade from Asia.

APPENDIX

Mexican Share in Value-added (as a Percent of Total Foreign Value-added) of U.S. Final Demand by Industry, 1995–2009

Industry Sectors	1995	2000	2005	2008	2009	1995-2009 % Change	1995-2009 Average
Transport equipment	9.14	15.18	15.51	16.2	19.95	**118.27**	15.196
Mining and quarrying	10.38	10.28	8.75	8.85	8.91	-14.16	9.434
Wholesale and retail trade	7.64	10.01	9.93	9.15	9.74	27.49	9.294
Food products	7.46	9.00	8.24	9.36	11.95	**60.19**	9.202
Other manufactures	8.96	10.61	7.20	6.06	7.58	-15.40	8.082
Agriculture, hunting, forestry and fishing	8.76	8.58	6.30	5.58	7.30	-16.67	7.304
Basic metals	4.99	7.22	7.15	7.74	8.39	**68.14**	7.098
Textiles and apparel	6.64	10.53	7.28	5.27	5.55	-16.42	7.054
Electrical equipment	4.96	9.10	8.02	5.68	6.92	39.52	6.936
Chemicals and minerals	4.87	5.89	4.97	5.14	5.80	19.10	5.334
Wood and paper	4.38	5.19	4.24	5.09	5.92	35.16	4.964
Business services	2.92	4.77	4.50	3.94	3.42	17.12	3.91
Transport and telecommunications	2.77	4.04	3.92	4.25	4.28	54.51	3.852
Electricity, gas, and water supply	2.70	3.35	3.80	4.54	3.84	42.22	3.646
Finance	4.27	2.76	3.35	2.99	2.79	-34.66	3.232
Machinery and equipment	1.60	2.36	2.78	3.26	4.09	**155.63**	2.818
Construction	0.67	1.20	1.50	1.35	1.49	**122.39**	1.242
Other services	0.40	0.69	0.68	0.54	0.60	50.00	0.582
TOTAL	**5.38**	**7.43**	**6.66**	**6.44**	**6.69**	**24.35**	

Source: Data from OECD, "Trade in Value Added (TiVA) Database."

Note: Foreign Value-Added embodied in Final Domestic Demand shows for a final good or service (purchased by households, government, non-profit institutions serving households, or as investment) where foreign value-added originates. It shows how industries abroad (upstream in a value-chain) are connected to consumers at home, even where no direct trade relationship exists. It can most readily be interpreted as "imports of value-added." This information was obtained from the OECD-WTO Trade in Value-Added Database notes.

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