



HUNT INSTITUTE

FOR GLOBAL COMPETITIVENESS

PASO DEL NORTE ECONOMIC INDICATOR REVIEW

SPRING 2015

UNIVERSITY OF TEXAS AT EL PASO

Introduction

The Paso del Norte region, comprising West Texas, New Mexico, and Chihuahua, has stood, for millennia, at the crossroads of vital continental trade routes. As demonstrated by the data in this report, its importance as a geo-strategic corridor has only grown—becoming one of the most critical demographic, industrial, and trade centers, along the entire U.S.-Mexico border. A review of this data and the accompanying analysis, organized into the following *POPULATION*, *EMPLOYMENT*, *EXPORT-ORIENTED MANUFACTURING FIRMS*, and the *REGION'S PORTS OF TRADE* confirms this significance, and also demonstrates the ever growing need not only to expedite trade flows, but also to add value along the supply chains which pass through the region in order to strengthen and secure our competitive advantages in both the North American and international economic contexts.

Population

Taken together, with a combined population¹ of over 2.3 million individuals, El Paso County and the *municipio* of Ciudad Juárez form one of the most populous trans-

boundary metropolitan areas not only along the entire U.S.-Mexico border region, but also in the world. Doña Ana County, which borders Ciudad Juárez and El Paso County just to the north, is home to an additional 213,000 individuals, bringing the total population of the Paso del Norte region to approximately 2.5 million people.

For various reasons, the demographic growth in these locations has advanced at a faster pace than that of either the United States or Mexico in recent decades. From 1990 to 2012, while the average annual growth rate was 1.0% in the U.S. and 1.2% in Mexico, those of El Paso, Doña Ana County and Ciudad Juárez were 1.5%, 2.1% and 2.6%, respectively. This trend from 1990 to 2012 is consistent with metropolitan growth on the U.S.-Mexico border which also had higher growth rates than their national averages: 1.6% for U.S. border cities and 3.0% for Mexican border cities. These rates of growth are expected to continue. According to the UTEP Border Region Modeling Project, the PdN metroplex will host 3.4 million individuals by 2029.² This demographic growth, through the concentration of population centers, simultaneously creates unprecedented economic development and employment opportunities which, in turn, furthers the binational and geo-strategic importance of the region.

Employment³

Employment growth is tied to demographic growth as an increase in population boosts demand for goods and services which then leads to job creation in order to satisfy these needs.⁴ In order to facilitate an examination of the current and thereby future employment in the Paso del Norte's urban areas, five sectors⁵ of employment were grouped and analyzed:

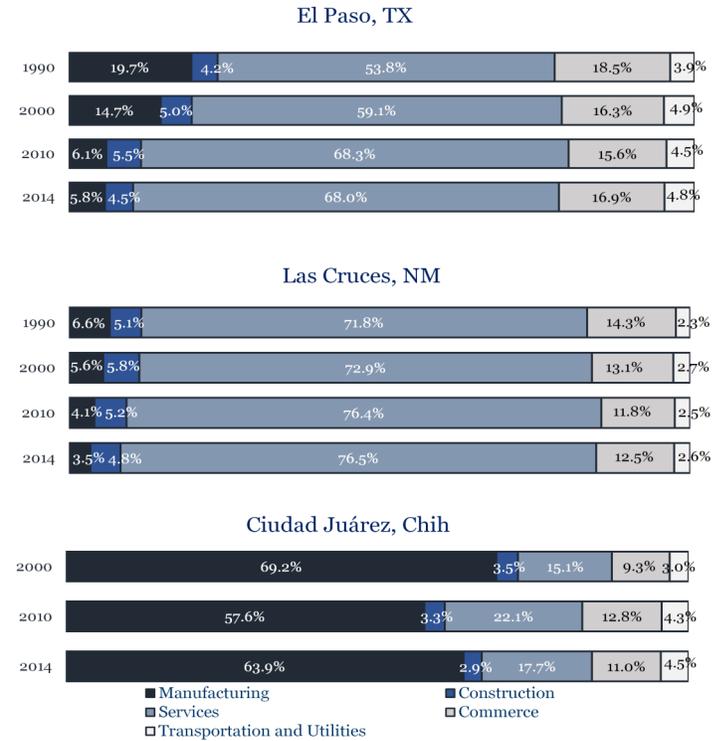
- i. Manufacturing
- ii. Construction
- iii. Services
- iv. Commerce
- v. Transportation and Utilities

As the data show, the structure of employment in these urban areas has evolved markedly in the recent decades (Figure 1). The most notable change in El Paso is the decline of the manufacturing sector's share to the total employment from 1990 to 2014, going from 19.7% to 5.8%. This decline accompanied an almost parallel increase in the share of the total employment in El Paso's services sector, moving from 53.8% in 1990 to 68.0% in 2014.

In Las Cruces, the share of employees engaged in the services sector increased slightly during the 1990-2014 period and it currently accounts for more than three quarters of its total employment at 76.5%. On the other hand, manufacturing continues to dominate employment in Ciudad Juárez. Although the manufacturing sector share has contracted from 2000 to 2014, it occupies 63.9% of formal employment. However, the manufacturing sector may actually possess a smaller share of total employment with the services sector holding a larger share provided that only formal employment⁶ was analyzed in Ciudad Juárez.

Geographical proximity to Ciudad Juárez has shaped the transition from the manufacturing to services sector in El Paso as many service industries in the latter provide support for *maquiladoras*⁷ in Ciudad Juárez.⁸ A recent study indicates that the *maquiladora* production in the Mexican border cities has had a significant positive impact on specific industries in corresponding U.S. border cities.⁹ According to this study, for the period from 1990 to 2006, El Paso's manufacturing employment sector did not respond significantly to an increase in Ciudad Juárez *maquiladora* export output, and only the sectors of personal and business services, finance-insurance-real estate, and transportation were positively and significantly impacted.

Figure 1
Structure of Regional Employment



Source: U.S. Bureau of Labor Statistics and Instituto Mexicano del Seguro Social (IMSS).
Authors' calculations.

This has been partially attributed to just-in-time inventory management techniques that in combination with higher security crossing border requirements, has resulted in some manufacturing suppliers to move from the U.S. to Mexico.

In February 2015, the total employment increased at year-over-year rates in Ciudad Juárez of 8.8% (more than 30,000 job gains). As observed in Figure 2, this yearly percentage increase in employment represent the highest since July 2010 for the city. In contrast, El Paso and Las Cruces' employment remained nearly flat during the period February 2014-February 2015 (Table 1).

Given that most of the formal employment in Ciudad Juárez derives from the manufacturing sector, changes in total employment can be partially attributed to variations in demand factors, such as the U.S. industrial production, as shown in Figure 2.

Figure 2
Regional Employment and US Industrial Production Index (IPI)*, (Year over Year %)



*Seasonally adjusted. Preliminary information for February 2015 for El Paso and Las Cruces.

Source: U.S. Bureau of Labor Statistics (BLS) and Instituto Mexicano del Seguro Social (IMSS). Authors' calculations.

But, while total employment has been increasing at greater year-over-year rates for Ciudad Juárez than for El Paso and Las Cruces since the 2008 global financial crisis, employment levels for Ciudad Juárez have not reached yet that attained before the crisis.

The main areas of growth in the yearly employment increase in February 2015 for Ciudad Juárez was the manufacturing sector, which boosted the total employment by more than 26,000 jobs. Although in El Paso this employment sector increased only 0.4%, for the first time in eighteen months it reported a non-negative year-over-year rate. In Las Cruces only two employment sectors, commerce and transportation and utilities, increased for the February 2014-February 2015 period.

Table 1

Regional Employment* (Year over Year %)

February 2015

	El Paso	Juárez	Las Cruces
Manufacturing	0.0%	12.2%	-11.6%
Construction **	-6.0%	9.6%	-5.7%
Services	0.5%	0.5%	-0.5%
Commerce	1.6%	4.3%	4.4%
Transportation and Utilities	1.4%	5.2%	11.2%
Total	0.4%	8.8%	-0.3%

*Seasonally adjusted. Preliminary information for February 2015 for El Paso and Las Cruces.

** Includes mining and logging sectors.

Source: BLS and IMSS. Authors' calculations.

Export Oriented Manufacturing Firms

A substantial portion of the manufacturing sector employees in Ciudad Juárez work in export-oriented manufacturing firms (79.2 % during 2014). In fact, of any urban metropolitan area in Mexico, Ciudad Juárez currently holds the largest number of export-oriented manufacturing employees and possesses more export-oriented manufacturing firms than any other Mexican city except Tijuana. The top ten *maquiladoras* (by number of employees) in Ciudad Juárez are concentrated mainly in the automotive, electronic and medical device manufacturing sectors, employ approximately 75,000 individuals and account for a third of all the export-oriented manufacturing workers in the city (Table 2).

Interestingly, though, the number of export-oriented manufacturing firms in Ciudad Juárez has been declining in

Table 2

Top Ten Maquiladoras in Ciudad Juárez by Number of Employees

February 2015

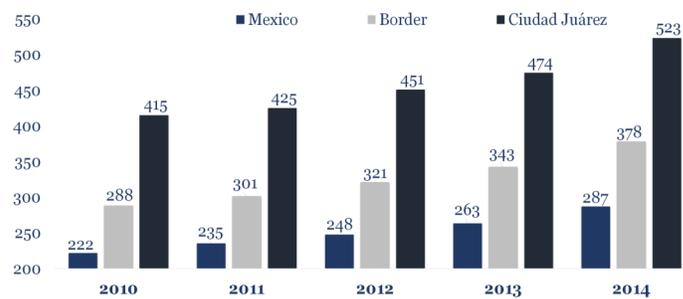
	Company Name*	Number of Employees	Main Economic Activity
1	Lear (11)	24,000	Automotive
2	Delphi (12)	12,000	Automotive
3	Foxconn (3)	11,600	Electronics
4	Wistron	6,200	Electronics
5	Electrolux (2)	4,900	Electronics
6	Johnson & Johnson (3)	4,500	Medical Device
7	3M Edumex	3,300	Industrial, Medical Device
8	Bosch (3)	3,100	Automotive
9	Coelisa	2,895	Automotive
10	Continental (2)	2,500	Automotive

*The number in parenthesis is the number of plants in Ciudad Juárez.

Source: Index Juárez.

Figure 3

Average number of Production Workers in Export Oriented Manufacturing Firms



Source: Instituto Nacional de Estadística, Geografía e Informática (INEGI). Authors' calculations.

recent years. In 2010, there were, on average, 335 export-oriented manufacturing firms in the urban area but this has decreased 6.3% to 315 as of December 2014. In contrast, the number of employees directly hired in these same firms increased from approximately 156,500 to 193,093 employees during the same period –a 23.4% increase. The decrease in the number of export-oriented manufacturing firms and the simultaneous-increase in the number of directly hired employees is not unique to Ciudad Juárez, as similar trends can be observed along the entire border and within Mexico as well.

Ciudad Juárez also holds the highest amount of production workers per export-oriented manufacturing firm across Mexico and its northern border cities (Figure 3).¹⁰ On average, there were 523 production workers per export-oriented manufacturing firm in Ciudad Juárez in 2014, while in Mexico and the border region, there were an average of only 287 and 378 production workers per firm, respectively.

In order to assess how the wages for both production and non-production workers in Ciudad Juárez compare relative to other northern Mexican metropolitan areas, these wages (for the month of December 2014) were converted into U.S. Dollars (USD). As seen in Table 3, the average salary of all workers, both production and non-production, in Ciudad Juárez is less than their counterparts in other northern Mexican border cities (only Ciudad Acuña, Coahuila has lower wages per employee). This average salary

Table 3

Average Monthly Wages by Workers for Export-Oriented Manufacturing Firms (USD)

December 2014

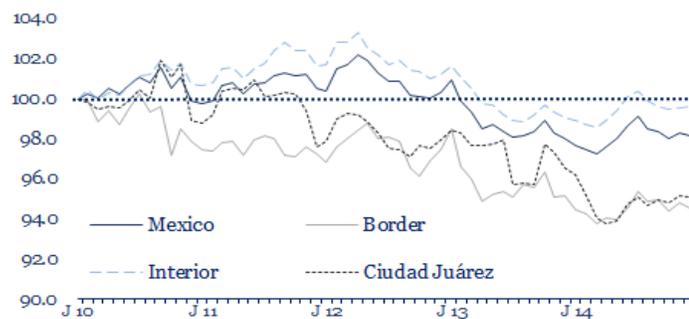
	All Workers	Non Production Workers	Production Workers
Mexico	802.8	2,045.8	582.7
Interior	884.7	2,029.5	628.9
Border	667.6	2,096.5	513.6
Mexicali	824.0	2,169.4	626.6
Nuevo Laredo	697.3	1,853.8	554.8
Tecate	746.0	2,139.3	644.3
Tijuana	713.6	2,223.3	583.9
Reynosa	642.9	2,052.5	483.0
Nogales	707.4	1,559.8	604.6
Matamoros	684.6	1,822.6	523.3
Ciudad Juárez	599.6	2,238.0	422.2
Ciudad Acuña	533.1	1,732.7	400.9

Source: Instituto Nacional de Estadística, Geografía e Informática (INEGI). Authors' calculations.

in Ciudad Juárez is due to the weight of the production workers' wages, as this type of employee represents 90% of all workers employed in export-oriented manufacturing firms in 2014. The December 2014 data reveals that the production workers in Ciudad Juárez had one of the lowest salaries throughout either the Mexican interior or border region. This fact contrasts with the wages of non-production workers who were the best paid across Mexico. Further research is needed to determine the factors influencing these results.

On average, real monthly wages per worker in export-oriented manufacturing firms in both Mexico, in general, and Ciudad Juárez, in particular, have not reached the levels attained in January 2010 (Figure 4). Wages paid to workers in the export-oriented manufacturing firms in the Mexican border and Ciudad Juárez are the farthest of all regions from reaching the 2010 levels, and monthly real wages levels in Ciudad Juárez per worker in December 2014 were the lowest across these four regions.

Figure 4
Average Real Wages per Worker in Export-Oriented Manufacturing Firms (January 2010=100)



*Seasonally adjusted, three month average, index on real pesos.
Source: Instituto Nacional de Estadística, Geografía e Informática (INEGI). Authors' calculations.

El Paso, Las Cruces, and Juárez as Ports of Trade

From January to November 2014, export-oriented manufacturing firms generated roughly 50% of Mexico's total merchandise trade value (USD 360.4 billion). For that year, Mexico's overall trade in goods with the rest of the world was USD 797.5 billion, with approximately two-thirds of this trade being with the U.S. The U.S. total trade (sum of exports and imports) of goods with the rest of the globe was USD 3.9 trillion in 2014, of which 13.4% (USD 534.5 billion) was with Mexico.

Mexico was the second largest importer (after Canada) of U.S. goods, while for the U.S., Mexico was the third largest source of imports (after China and Canada). Since none of its trading partners account for more than 20% of its overall trade, the U.S. trade market is considered to be well diversified. Mexico, on the other hand, heavily depends on the U.S. for its overall trade (82.5% for exports to the U.S. and 48.8% for imports from the U.S.).

Of extreme importance to this mutual, bi-national trade relationship is the role that the Ports of El Paso, Texas¹¹ and Santa Teresa, New Mexico play in facilitating these commercial flows. For example, these Paso del Norte ports of entry (PoE) taken together ranked second—only after the Laredo, Texas PoE—for overall surface trade between the two countries (Table 4). Undoubtedly, the region's PoE

Table 4
Top 10 US Ports for Total Surface Trade between the US and Mexico* (USD, Millions) 2014

Port	Total Surface Trade
Laredo, TX	191,408
El Paso, TX and Santa Teresa, NM	83,046
El Paso, TX	64,152
Otay Mesa Stanton, CA	38,152
Hidalgo, TX	28,145
Nogales, AZ	26,331
Eagle Pass, TX	24,451
Santa Teresa, NM	18,894
Brownsville, TX	14,806
Calexico, CA	14,302
Del Rio, TX	5,026

*Rail and Truck
Source: Bureau of Transportation Statistics.

are key to the binational trade between U.S. and Mexico.

In 2014, the total value of goods (both imported and exported) passing through El Paso was USD 67.9 billion, 95% of which was carried by truck and rail trade with Mexico.¹² Most of the goods traded with Mexico, both imported and exported, through the El Paso PoE (USD 55.1 billion) went by truck. The category of "metals and manufactured articles made mostly by metal" was the most traded-category of goods, imported and exported, transiting by rail and truck through El Paso (Table 5). The second most traded category of goods transiting by rail was "agricultural products" (16.6%), while by truck it was "chemical and related products" (7.1%).

Table 5
Composition of Total Surface Trade with Mexico through the El Paso Ports 2014

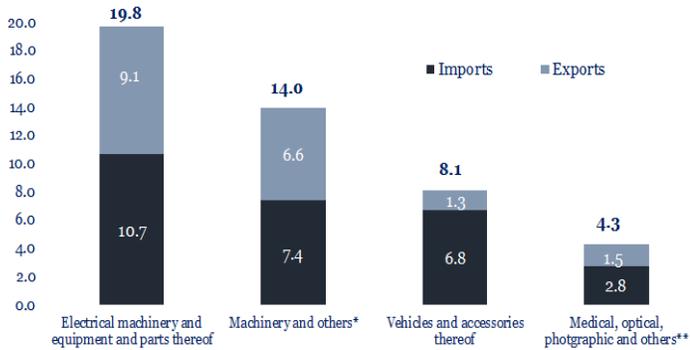
	Rail	Truck
Agricultural products	16.7%	3.3%
Chemical and related products	3.3%	7.1%
Metals and manufactured articles made mostly of metal	76.7%	78.2%
Mineral products	1.7%	0.2%
Non-consumable animal and plant products	1.6%	1.9%
Non-metallic mineral products	0.0%	0.5%
Other highly manufactured and special-purpose goods	0.0%	5.5%
Textiles and apparel	0.0%	3.3%

Source: Bureau of Transportation Statistics. Authors' calculations.

Figure 5 displays the top four types of goods that were imported and exported by rail or truck that went through the El Paso PoE to Mexico in 2014. The top export and imported good was "electrical machinery and equipment and parts thereof" with USD 9.1 billion and USD 10.6 billion, respectively. These types of goods accounted for 31% of all the trade value with Mexico through El Paso.

The second most traded type of good was "machinery and others" (totaling USD 14.0 billion in both exports and imports) and, in conjunction with "electrical machinery and equipment and parts thereof," these two types of goods accounted for slightly more than half of the goods passing through the El Paso PoE (52.6%) with Mexico.

Figure 5
Top Export and Import Value of Goods moved through El Paso Ports with Mexico as the Trading Partner (USD Billion)
2014



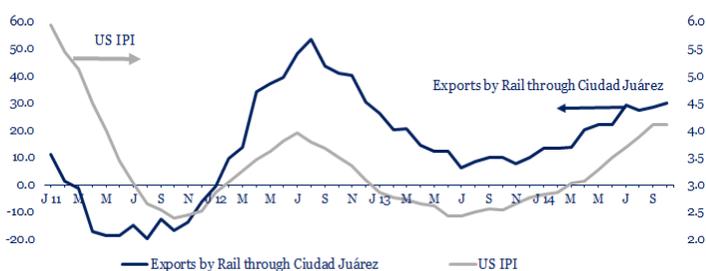
*Includes cinematographic, measuring, checking, and precision.
 ** Includes nuclear reactors, boilers, and mechanical appliances, parts thereof.

Additionally, Ciudad Juárez represents an important international gateway for Mexico as this city accounted for 12.8% of the total goods traded through Mexican PoE in 2014, while also mirroring overall industrial trends in the U.S. and Mexico. For example, rail imports that pass through the Ciudad Juárez PoE into Mexico have a pattern similar to the Mexican Industrial Production Index¹³. Likewise, the trade activity through Ciudad Juárez matches overall U.S. industrial trends. The Mexican rail exports passing through the Ciudad Juárez PoE have a notably positive relationship with the U.S. Industrial Production Index. The recent deceleration and expansion in Mexican exports by rail through Ciudad Juárez can partially be attributed to the corresponding decline and growth in the U.S. Industrial Production Index starting in mid-2012 and mid 2013 (Figures 6 and 7).

Figure 6
Total Imported Goods Value by Rail through Ciudad Juárez compared with the Mexican Industrial Production Index (IPI) (Year over Year %)



Figure 7
Total Exported Goods Value by Rail through Ciudad Juárez compared with the US Industrial Production Index (IPI) (Year over Year %)



*Seasonally adjusted, six month moving average. Imports and exports in real dollars.
Source: Instituto Nacional de Estadística, Geografía e Informática (INEGI). Authors' calculations.

Conclusion

The Paso del Norte region is one of the most important centers of demographic growth, industrial activity, and trade flows on the U.S.-Mexico border. The region represents a key nexus and point of interchange for the entire North American market as trade between the U.S. and Mexico greatly depends on the efficient and rapid passage of people, goods, and services through its ports. In order, then, to reinforce the economic vibrancy and importance of the Paso del Norte region as an international gateway, sustained local, regional, and binational efforts and policies must be applied to this end. In particular, the development of infrastructure and the increased participation in customs programs can increase the efficiency of the trade flows while, at the same time, the application of academic programs and workforce training can complement and add significant value to the industrial and service sectors which surround the region's economic activity. In this way, coordinating institutions, policies, and investment among all of the region's communities will not merely further the economic development of the Paso del Norte region, but inform, enrich, and stimulate the broader North American and international economies as well.

Notes

The Hunt Institute's team is grateful to those who have contributed to the completion of this study as their expertise and insights were of invaluable assistance.

¹ Information for El Paso and Las Cruces corresponds to El Paso County and Dona Ana County.

² Fullerton, T. and Molina, A. (2010) "Borderplex Long-Term Economic Trends to 2029." Border Region Modeling Project, Business Report SR10-1, pp. 1 – 35. El Paso: University of Texas at El Paso.

³ This section refers to El Paso Metropolitan Statistical Area (MSA). Las Cruces MSA and Ciudad Juárez seasonally adjusted non-farm payroll employment. Ciudad Juárez corresponds to total non-farm payroll formal employment.

⁴ Deming W (1996) "A decade of economic change and population shifts in U.S. regions." Regional Economic Changes. November 1996.

⁵ These groupings required the harmonization of Mexican and U.S. employment through a comparison of the North American Industry Classification System (NAICS) sectors for the U.S. and *Instituto Mexicano del Seguro Social* (IMSS) sectors for Mexico. The construction sector includes mining and logging. Services include government services. Commerce sector includes wholesale and retail trade. Water utilities, which is reported under the mining and water utilities sector in Mexico was considered into the transportation and utilities sector.

⁶ Formal sector corresponds to the employment that is registered with government authorities and is taxed.

⁷ *Maquiladoras* are firms that assemble and process imported inputs to be exported.

⁸ Canas J (2002) "A decade for change: El Paso's economic transition of the 1990s." Business Frontier, Federal Reserve Bank of Dallas, El Paso Branch Issue 1.

⁹ Canas J, Coronado R, Gilmer R, Saucedo E (2013) "The Impact of the Maquiladora Industry on U.S. Border Cities" Growth and Change. Vol. 44. No. 3.

¹⁰ Ciudad Acuña, Ciudad Juárez, Matamoros, Mexicali, Nogales, Nuevo Laredo, Reynosa, Tecate, and Tijuana.

¹¹ According to the U.S. Customs and Border Protection (CBP), the main PoE in El Paso are: Yselta, Paso Del Norte, Bridge of the Americas and Stanton bridge. <http://www.cbp.gov/contact/ports/el-paso>.

¹² USD 29.8 billion for exports and USD 34.4 billion for imports.

¹³ An industrial production index measures real output in diverse sectors.

