

El Paso Business Frontier



FEDERAL RESERVE BANK OF DALLAS EL PASO BRANCH ISSUE 1 • 2002

A Decade of Change: El Paso's Economic Transition of the 1990s

El Paso's economic base underwent drastic change during the 1990s.

Proximity to Ciudad Juárez, Mexico, has helped drive these economic changes and define El Paso's growth sectors.

Over the decade of the 1990s, El Paso experienced an economic transition. It evolved from a manufacturing-based economy toward a more service-oriented economy, following a national trend that started much earlier. This transition has been particularly painful for El Paso because its manufacturing employment is concentrated in the apparel industry, which has been in steep decline in the United States for many years.

Despite this trend, the El Paso economy continues to be strong. The growth of the service sector has more than offset the decline in manufacturing employment, and El Paso has had a net gain of more than 42,000 jobs over 10 years. The average annual growth rate of employment has been 2.1 percent, slightly higher than the U.S. job growth rate over the same period. Consequently, unemployment declined from 11.6 percent at the beginning of the decade to 9.4 percent in 1999. The current unemployment rate is 8.2 percent.

Proximity to Ciudad Juárez and Mexico has shaped the El Paso economy in its manufacturing-to-services transition. Manufacturing sectors related to maquiladora activity in the Mexican border city of Ciudad Juárez are growing. Furthermore, El Paso services and services-related employment is benefiting from the economic interrelationships generated by daily flows of trade and people between these cities. This article examines El Paso's economic transition over the past decade and considers how linkages to Ciudad Juárez have transformed the two economies from competing to complementary ones.

EL PASO'S BASIC INDUSTRIES **Location Quotient Analysis**

The El Paso region's most important components are the principal industries that make up its economic base. We can see changes in industry concentration by studying location quotients over time.¹

The location quotient technique compares the local economy—El Paso—with a reference economy—the United States—to identify areas of specialization generally resulting from geographic location. Industries with a higher share of employment than those in the national economy are considered basic industries and drivers of the local economy. This approach assumes that basic industries generate sufficient employment to cover local needs and all extra industry employment results from external demand. Output generated by nonlocal demand is a form of regional export that helps pay for goods and services from other parts of the country (imports). Examples of El Paso exports are blue jeans, plastic injection molded parts and brokerage services, while an import might be financial services from New York.

The location quotient (LQ) compares the share of jobs in El Paso for $i = 1, \dots, n$ industries to the share of jobs in the United States for the same industries:

$$LQ_i = \frac{\text{share of El Paso jobs in industry } i}{\text{share of U.S. jobs in industry } i}.$$

The LQ is calculated using annual (1990–99) employment data from the Bureau of Labor Statistics on 67 industrial categories. The resulting location quotients and rate of job growth in each industry are shown in Table 1. The combined group of industries accounts for total private employment. A basic industry has an LQ greater than 1, meaning the industry has an above-average concentration of employment in the region. Accordingly, the industry is a net exporter of goods and services, producing output destined to service nonlocal demand. The opposite occurs if the industry exhibits an LQ less than 1.

As seen in Table 1, manufacturing industries such as leather, apparel, rubber and plastics, electronic–electrical equipment and primary metals have employment concentration levels above the national average. In addition, service and service-related industries like freight transportation, transportation services, apparel and accessory stores, real estate, business services and legal services are also among El Paso’s basic industries. Not surprisingly, all these industries have some connection to economic activity in Ciudad Juárez, either by servicing maquiladora industry demand for manufacturing components and freight transportation or by servicing Juárez and Chihuahua state residents’ demands for goods and services.

Change Over Time

The industry job growth numbers in Table 1 clearly demonstrate the trade-off between the decline in manufacturing and the rise of service em-

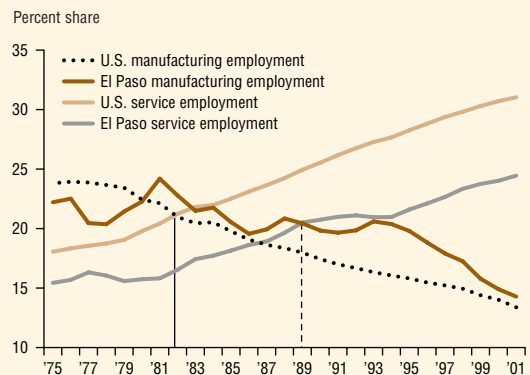
ployment over the past decade. El Paso still has a larger concentration of manufacturing jobs (16 percent) compared with the nation (14 percent), but manufacturing employment fell 4.2 percent over the 1990–99 period. On the other hand, the service sector grew 38 percent over the past decade. In addition, by 1999, 74 percent of El Paso’s basic industries were either service or service-related.

These employment patterns reflect the national trend. Chart 1 illustrates the crossover point for both the U.S. and El Paso economies. Service sector employment overtakes manufacturing jobs in the national economy in 1982. In El Paso, the crossover comes seven years later, in 1989. In the local economy, the job shares in the two sectors remain the same for about five more years, with a definite divergence after NAFTA’s implementation in 1994.

The apparel sector has absorbed most of the job losses in the manufacturing sector in the El Paso economy. In El Paso, apparel employment fell from 38 percent to 30 percent of total manufacturing employment between 1990 and 1999. Firms have taken advantage of technological advances in transportation, communication and production, in conjunction with increasing trade liberalization, to move production to lower-cost countries. (See the box titled “The Gains from Trade.”) Competitive pressures are the driving force behind the need for producers to minimize costs. Just recently, VF Jeanswear, the largest garment manufacturer in El Paso, laid off about 1,180 apparel workers. In addition, Levi Strauss announced the closure of its lone remaining sewing plant, which employed 780 workers. A decade ago, Levi Strauss had six plants and employed about 6,000 workers.

Given the relatively high cost of low-skilled labor in the United States, apparel manufacturers

Chart 1
Service and Manufacturing Participation
in Payroll Employment, 1975–2001



SOURCES: Bureau of Labor Statistics; seasonal and other adjustments by Federal Reserve Bank of Dallas.

Table 1

El Paso Principal Industries

	Location quotient		Average annual employment growth (percent)
	1990	1999	
Manufacturing			
Leather and leather products	7.0	9.8	-2.1
Apparel	7.0	8.4	-2.2
Rubber and miscellaneous plastics products	1.1	1.9	10.1
Electronic and other electrical equipment and components, except computer equipment	1.6	1.9	1.4
Primary metal industries	1.3	1.3	-1.2
Miscellaneous manufacturing industries	1.6	1.0	-3.9
Paper and allied products	1.1	.9	-2.3
Transportation, communications, electric, gas and sanitary services			
Motor freight transportation and warehousing	1.5	2.1	8.0
Transportation services	1.6	1.5	5.6
Electric, gas and sanitary services	1.4	.9	-3.4
Trade			
General merchandise stores	1.2	1.2	1.0
Apparel and accessory stores	1.1	1.1	-.1
Automotive dealers and gasoline service stations	1.1	1.1	.9
Wholesale trade in durable goods	1.0	1.1	1.7
Eating and drinking places	1.1	1.1	2.7
Home furniture, furnishings and equipment stores	1.3	.9	-.4
Finance, insurance and real estate			
Real estate	1.1	1.8	8.8
Insurance agents, brokers and service	1.0	1.2	4.1
Holding and other investment offices	1.0	1.2	6.1
Depository institutions	1.3	1.0	-2.2
Nondepository credit institutions	1.3	.8	2.4
Services			
Personal services	3.2	1.7	-3.7
Automotive repair, services and parking	2.0	1.7	1.6
Miscellaneous repair services	2.2	1.6	-2.7
Business services	1.6	1.5	7.5
Health services	1.2	1.3	3.3
Private households	1.5	1.3	3.9
Legal services	1.4	1.2	-.1
Amusement and recreation services	.8	1.1	10.3
Social services	.8	1.1	11.6
Membership organizations	1.2	1.1	.7
Hotels, rooming houses, camps and other lodging places	1.2	.9	-.7
Construction			
Building construction general contractors and operative builders	1.1	1.3	5.7
Construction special trade contractors	1.2	1.1	5.0

SOURCES: Bureau of Labor Statistics and author's calculations.

reduce costs by relocating to Mexico, Central and South America, and Asia. NAFTA likely accelerated this process by lowering tariffs on goods produced by North American apparel and textile firms outside the United States.²

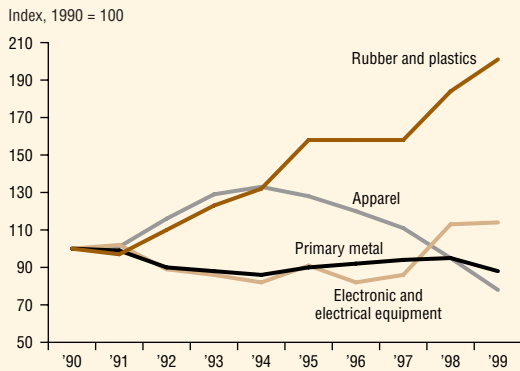
Other Growth Sectors

While some sectors such as the apparel industry are shrinking and total manufacturing employment shares are falling, there are still some growing sectors within El Paso manufacturing. Table 1

shows that the rubber and plastics sector and the electronic–electrical equipment sector exhibited job concentrations above the national average, with robust employment growth rates of 101 percent and 14 percent, respectively, for 1990–99.

It is not surprising that the El Paso transportation sector also has a higher share of employment than the nation, given its dependence on foreign trade and proximity to Mexico. Between 1990 and 1999, U.S.–Mexico trade grew 236 percent. About

Chart 2
Manufacturing Employment Growth
Linked to Maquiladoras



SOURCE: Bureau of Labor Statistics.

20 percent of U.S.–Mexico overland trade passes through El Paso. As a result of the growing trade, the transportation, distribution, warehousing and federal government sectors expanded rapidly on the U.S. side of the border.³ El Paso's transportation employment grew 82 percent over 1990–99. Within the transportation industry, motor freight and warehousing employment and transportation services employment had job concentration levels above the national average. Respective 10-year growth rates were 80 percent and 56 percent.

EL PASO EMPLOYMENT AND CIUDAD JUÁREZ

Growth trends in El Paso over the past decade stem from the city's proximity to Ciudad Juárez and the fact that Juárez is such a large and fast-growing metropolitan area. Juárez has 1.2 million people and an estimated regional gross domestic product of more than \$8 billion.⁴ It has the largest maquiladora employment concentration of any Mexican city, with more than 200,000 workers and an estimated value added of \$3.4 billion. This industry's growth has a big impact on the demand for goods and services produced in El Paso. Research studies suggest that a 10 percent increase in export production in a Mexican border city leads to a 2.4 to 4.9 percent increase in related manufacturing employment in the neighboring U.S. border city.⁵ Likewise, a 10 percent increase in border maquiladora production leads to as much as a 2.8 percent, 2.4 percent and 1.6 percent increase in transportation, wholesale-trade and services industries, respectively.

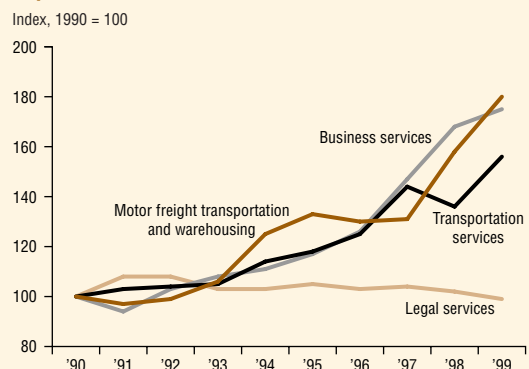
In El Paso, the growing manufacturing subsectors are all linked to maquiladora production in Ciudad Juárez (*Chart 2*). A rising number of rubber and plastics, electronic and electrical equipment, and primary metals companies have opened

operations in El Paso to service the Mexican maquiladora industry. Components supplied include computer housings, electrical wire harnesses, special dies and tools, and electrical switches. Currently, more than 30 plastic injection molding companies, about 12 metal stamping companies, and nine electric- and electronics-related companies operate in El Paso, employing approximately 4,120, 1,870 and 6,578 workers, respectively. Even though fewer workers per company may be employed, they are highly skilled. In 1999, hourly wages in these manufacturing subsectors were, on average, 39 percent higher than those of the apparel sector.

Manufacturing activity south of the border is also positively influencing employment in transportation, business and legal services (*Chart 3*). Given the rapidly increasing trade flows between the two countries, transportation and warehousing sector employment accelerated quickly after 1993. Business service employment, which includes personnel supply services and computer programming and data processing services, grew 75 percent from 1990 to 1999. El Paso's maquiladora-related manufacturing operations often rely on temporary staffing agencies to hire additional personnel to meet increasing demand. Computer programming and data processing services workers help minimize the burden of the paperwork required by customs agencies to export or import components and finished products. Even though legal services fell slightly over the decade, employment concentration was still 20 percent higher than the national level. Legal services advise companies on both sides of the border regarding Mexico's often changing tax and labor laws.⁶

Not only do manufacturing operations in Ciudad Juárez contribute to employment growth in El Paso;

Chart 3
Local Transportation, Business Services
Expand After NAFTA



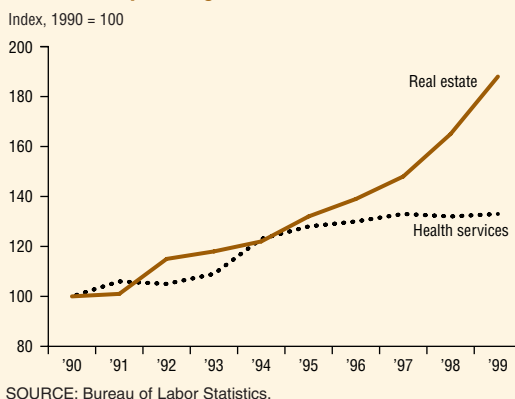
SOURCE: Bureau of Labor Statistics.

so do the needs, tastes and preferences of Juárez residents. These consumers come to El Paso to shop for everything from automobiles and designer clothes to soft drinks. (Juárez residents have been known to say cokes from El Paso taste better.) They are also increasingly relying on financial and health services that El Paso businesses provide. A large share of El Paso's retail sector depends on Juárez residents for sales.⁷ In a normal day, more than 150,000 people cross from Juárez to El Paso and vice versa. Last year, there were 46 million northbound crossings via the three international bridges the two cities share.⁸

As a result of the expanding Mexican customer base, El Paso retail sector employment (general merchandise stores and apparel and accessory stores) trended upward in the early 1990s and again in the late 1990s. Chart 4 illustrates the growth over time as well as the severe impact of the late 1994 peso devaluation and the ensuing Mexican recession. When the peso was devalued by 60 percent in 1994–95, Mexican purchasing power in the United States fell by just as much. The recession also caused real wages in Ciudad Juárez to fall 13 percent, and consequently, El Paso's retail employment also declined. Surprisingly, some retailers—automotive dealers and home furniture and equipment stores—did well after the devaluation. This is partly because Juárez residents prefer to buy expensive items in El Paso during inflationary periods to avoid high financing costs in Mexico.

Better financial services in El Paso also attract Juárez customers. A Juárez resident can buy a house in El Paso using Mexican bank statements or Mexican payroll receipts as proof of income. In addition, Juárez residents can finance home purchases in their own city through an El Paso bank

Chart 5
Real Estate, Health Services Employment Rises Steadily During 1990s



that offers 15-year mortgages. Another draw for Mexican residents is the high-quality health services available in El Paso. Sierra Providence Health Network offers the PASE premier program (derived from the Spanish word for “come in”) dedicated to the specific needs of international clients, mainly Mexican nationals. As a consequence of all these interconnections, real estate employment and health service jobs have shown steady growth from 1990 to 1999 (Chart 5).

CONCLUSION

El Paso's economic base underwent drastic change during the 1990s. The regional economy moved away from its traditional base of low-skill manufacturing toward higher-skill manufacturing and a larger service sector. Proximity to the much larger sister city of Ciudad Juárez, Mexico, has helped drive these economic changes and define El Paso's growth sectors. Future economic expansion rests on identifying the industries with the most potential growth and helping the local workforce make the transition. Investments in education and job training, along with measures to expedite cross-border flows of people and trade, are central to securing a bright future for the region's economy.

—Jesus Cañas

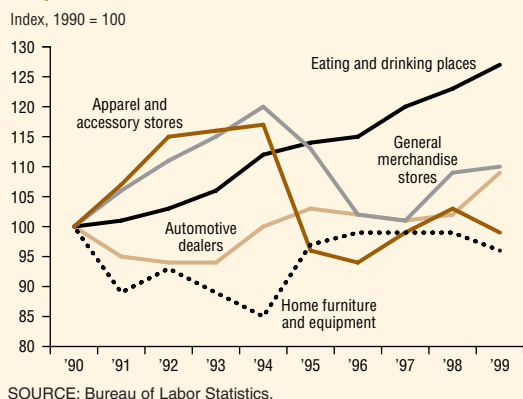
Jesus Cañas is an economic research assistant in the Research Department at the El Paso Branch of the Federal Reserve Bank of Dallas.

NOTES

The author thanks Pia Orrenius, Keith Phillips and Mine Yücel for their advice and contribution to this article.

¹ See Robert W. Gilmer and Thomas Wang, “Diversification of Houston's Economic Base,” Federal Reserve Bank of Dallas *Houston Business*, September 2000.

Chart 4
El Paso Retail Employment Responds to Mexican Consumer



- ² According to Mexico's Ministry of the Economy, 97 percent of Mexican apparel and textile exports enter the United States receiving preferential treatment due to NAFTA. The average apparel and textile tariff to non-NAFTA members is 13.5 percent compared with 0.13 percent for NAFTA members. Furthermore, the Office of the United States Trade Representative reports that Mexico's average tariff on U.S. goods is below 2 percent and that about 80 percent of U.S. manufactured goods enters Mexico duty-free. Prior to NAFTA, the average tariff was 10 percent.
- ³ For more information, see Pia M. Orrenius, Keith Phillips and Benjamin Blackburn, "Beating Border Barriers in U.S.–Mexico Trade," Federal Reserve Bank of Dallas *Southwest Economy*, Issue 5, September/October, 2001.
- ⁴ Author's estimation using data from Grupo Financiero BANAMEX, Division of Economic and Social Research and Instituto Nacional de Estadística, Geografía e Informática.
- ⁵ See Gordon H. Hanson, "U.S.–Mexico Integration and Regional Economies: Evidence from Border-City Pairs," *Journal of Urban Economics* 50 (September), 2001, pp. 259–87.
- ⁶ Employment in recreation and social services also posted strong growth over the past decade. El Paso received several grants from federal and state governments, totaling more than \$45 million, to retrain workers displaced after NAFTA took effect. Social services, including job training and related services employment, grew as a consequence. For more information regarding job retraining programs in El Paso, see Lucinda Vargas, "Maquiladoras: Impact on Texas Border Cities," *The Border Economy*, Federal Reserve Bank of Dallas, June 2001. The high growth in recreation services may be a result of the 1993 opening of Speaking Rock Casino, which closed earlier this year.
- ⁷ Some El Paso estimates regarding Juárez residents' contribution to El Paso's total retail sales range from 20 to 30 percent.

Work done by Keith Phillips, senior economist at the San Antonio Branch of the Federal Reserve Bank of Dallas, suggests that about 13 percent of El Paso's retail sales are attributed to Juárez residents. For more information regarding border retail sales, see Keith Phillips and Carlos Manzanaras, "Transportation Infrastructure and the Border Economy," *The Border Economy*, Federal Reserve Bank of Dallas, June 2001.

⁸ In 2001, total border crossings reached 45.8 million people, down from more than 55 million in 2000 and 53 million in 1999. This reduction can be attributed to the long waiting times experienced during the last quarter of 2001 due to increased security at the international bridges after Sept. 11. To illustrate this, during the fourth quarter of 2001 about 2.75 million people crossed northbound per month compared with 4.55 million and 4.49 million during 2000 and 1999, respectively.

The Gains from Trade

Why do nations trade? Differences across countries with respect to price differentials, resource endowments and product variety create opportunities for mutually beneficial exchange.¹ When trading partners specialize in products in which they have a comparative advantage, trade allows for rises in output without additional input. A comparative advantage implies that one country can produce a good or service at a lower opportunity cost than another country. By specializing, countries achieve efficiency because they produce and export goods and services with low opportunity costs and import goods and services with high opportunity costs. Thus, trade increases productivity, which in turn increases income.

To illustrate this, the Office of the United States Trade Representative (USTR) released a study showing that the two major trade agreements of the 1990s—NAFTA and the Uruguay Round—have been responsible for annual gains of between \$1,260 and \$2,040 for the average American family of four.² Such savings, according to the USTR, can buy three months of groceries, purchase a year's supply of gasoline or pay the tuition for two semesters in a community college. More important, the USTR points out that "the biggest beneficiaries from these price reductions and income gains are lower-income Americans, who bear a disproportionate burden when prices for food, clothing and appliances are kept artificially higher because of trade barriers."

However, free trade has an initial cost, the so-called churn.³ This process, also known as creative destruction, occurs when economies move from one economic activity that has a high opportunity cost to another that has a low opportunity cost. At the same time that some workers are displaced by trade, the churn leads to opportunities in new and growing industries. The trade-off is that often individuals must adjust by acquiring more education and/or job training to exploit the new opportunities and become competitive workers in the emerging industries.

NOTES

¹ See William S. Brown, *Principles of Economics*, 1st ed., 1995 (New York: West Publishing Co.).

² See press release, "USTR Documents Benefits of Trade for America Families," Sept. 19, 2001, the Office of the United States Trade Representative, available at www.ustr.gov/releases/2001/09/01-73.htm.

³ See W. Michael Cox and Richard Alm, "The Churn: The Paradox of Progress," *1992 Annual Report*, Federal Reserve Bank of Dallas.

El Paso BusinessFrontier

Business Frontier is published by the El Paso Branch of the Federal Reserve Bank of Dallas. The views expressed are those of the author and do not necessarily reflect the positions of the Federal Reserve Bank of Dallas or the Federal Reserve System.

Subscriptions are available free of charge. Please direct requests for subscriptions, back issues and address changes to the Public Affairs Department, El Paso Branch, Federal Reserve Bank of Dallas, 301 E. Main St., El Paso, TX 79901-1326; call 915-521-8235; fax 915-521-8228; or subscribe via the Internet at www.dallasfed.org.

Articles may be reprinted on the condition that the source is credited and a copy of the publication containing the reprinted material is provided to the Research Department, El Paso Branch, Federal Reserve Bank of Dallas.

Business Frontier is available on the Bank's web site at www.dallasfed.org.

Publications Director: Kay Champagne
Copy Editor: Jennifer Afflerbach
Art Director: Gene Autry
Design & Production: Laura J. Bell