



SECOND QUARTER 2009

# Southwest Economy

FEDERAL RESERVE BANK OF DALLAS

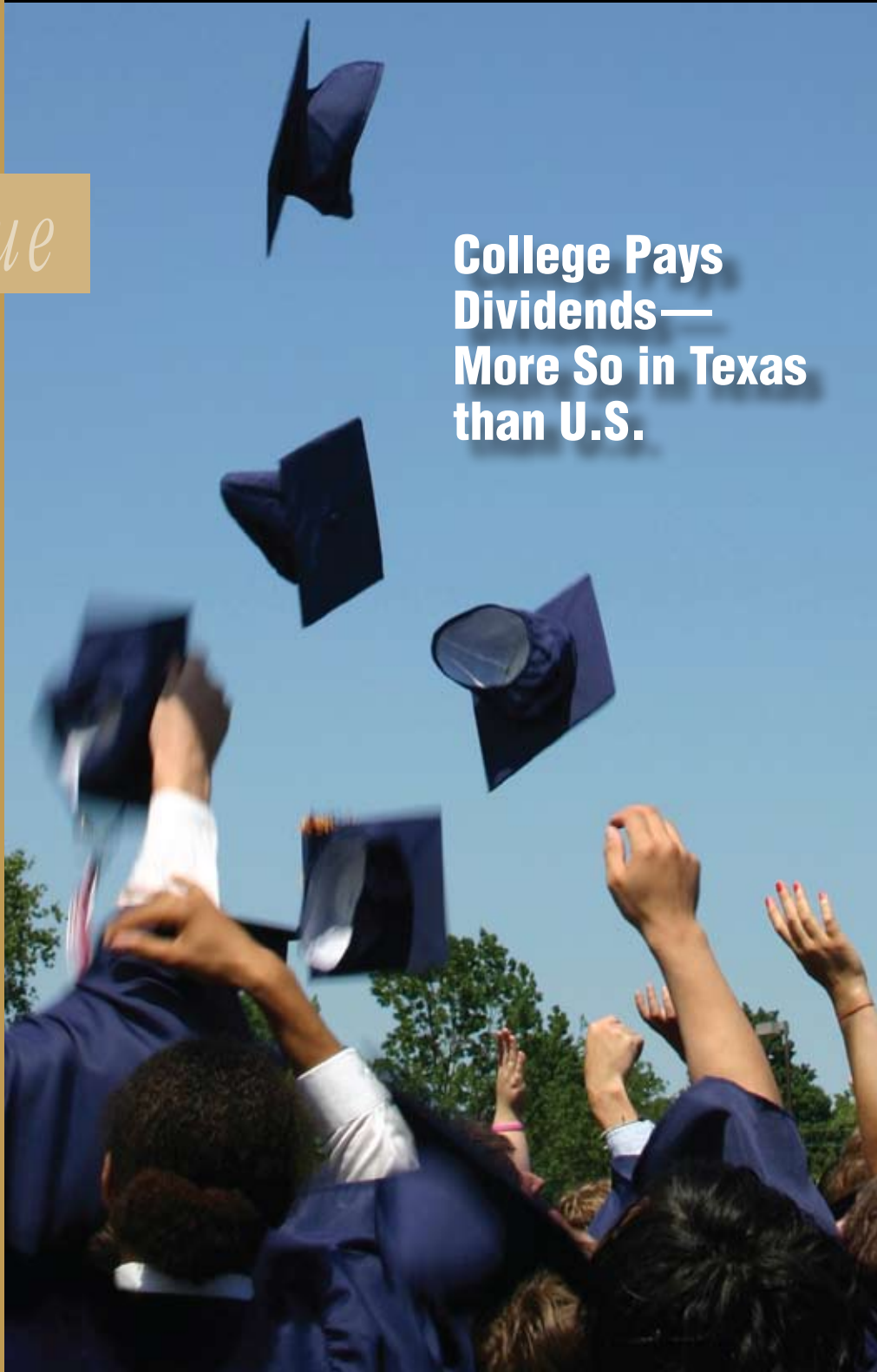
## *In This Issue*

The Maquiladora's  
Changing Geography

On the Record: The Energy  
Industry in a Time of  
Uncertainty

Spotlight: Upper East Texas

**College Pays  
Dividends—  
More So in Texas  
than U.S.**



# President's Perspective



*The board members  
provide real-time  
snapshots of the  
economy.*

**T**he Federal Reserve's independence insulates the central bank from the political exigencies of the day and allows the Federal Open Market Committee (FOMC) to focus purely on policies to meet its mandate for sustainable employment growth anchored by price stability.

Much of the independence derives from the institutional structure established in the Federal Reserve Act in 1913. One of this legislation's most far-reaching provisions was the creation of 12 regional banks. Today, each is represented on the FOMC by its president.

Chairman Ben Bernanke and other members of the Fed's Board of Governors serve at the behest of the president of the United States, subject to Senate confirmation. The presidents of the regional banks are neither appointed by the president nor confirmed by the Senate. They serve at the pleasure of their individual boards. In this way, they are insulated from political pressures.

Each regional bank board consists of nine individuals, chosen to serve three defined roles. A district's stockholding banks elect three directors to represent the financial industry. The six other directors—three chosen by stockholding banks and three chosen by the Federal Reserve Board—represent the general public.

These devoted men and women meet regularly with me and my senior staff. In addition to voting on the discount rate and overseeing the Dallas Fed's financial operations, the board members provide real-time snapshots of the economy on the ground and on the highways and byways of Main Street. Collectively, their expertise spans a host of industries—education, energy, health care, banking—and their insights and analysis are invaluable to me and my staff as we prepare for FOMC meetings.

Since 2007, our board chairman has been Jim Hackett, president and chief executive officer of Houston-based Anadarko Petroleum Corp. He's sharp and tough—just what you'd expect of someone in the Texas oil and gas industry.

We asked Jim to share his views on energy and the economy in this issue's "On the Record" interview. As you read what he has to say, you'll come to understand why I listen when Jim Hackett speaks.

Richard W. Fisher  
President and CEO  
Federal Reserve Bank of Dallas



# College Pays Dividends— More So in Texas than U.S.

By Anil Kumar

*Demand shifts driven  
by trade and technology  
help explain the rise  
in the college  
premium.*

Economic research confirms what parents have been telling their children for generations: College education pays off in higher earnings. Indeed, the gains from earning a college degree have been rising over the past quarter century—in both the nation and Texas.

In 1980, a typical U.S. worker with a college degree earned about 50 percent more than a high school graduate. By 1990, the differential rose to 73 percent; by 2000, a college graduate earned 85 percent more. Now, it's up to 97 percent.

The college premium grew even faster in Texas. In 1980, the state was on par with the nation, after adjusting for age, experience and other demographic factors (*Chart 1*).<sup>1</sup> By 1990, the differential was 79 percent, or 6 percentage points better than the nation. Texas maintained its lead into 2000 and widened it to more than 10 percentage points in recent years.<sup>2</sup>

Supply and demand go a long way toward explaining rapid increases in the college premium since the 1980s. U.S. col-

leges have been sending more graduates into the workforce; even so, paychecks have gone up because demand for higher-skilled workers has risen even faster, the result of technological change, trade and other factors.

Texas' faster increases suggest demand growth has outpaced supply growth by a wider margin in the state than the nation. One possible reason is that the state's skill-intensive sectors have grown more rapidly, stimulating demand for college-educated workers and raising their wages. Other interpretations aren't as benign. For example, stingy educational funding may have led to shortages of skilled workers in Texas, driving up relative demand for those who remain. These explanations have starkly different public-policy implications, so it's critical to understand why the state's college premium tops the nation.

## Demographic Breadth

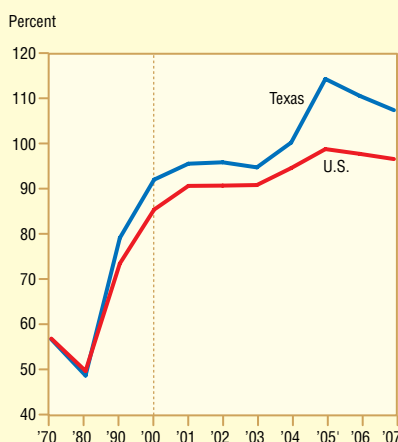
The rising college premium doesn't merely reflect developments in isolated segments of the workforce. The gains from college grew more rapidly in Texas than the nation across key demographic classifications—age, gender and ethnicity.

Texans in their 40s, for example, broke ahead of the national norm in just the past five years (*Chart 2A*). Higher pay among those under age 30 starts earlier. The state exceeds the nation in the share of younger workers in the labor force, suggesting age is a key to the college premium's faster growth in Texas.<sup>3</sup>

U.S. nonwhites have consistently enjoyed a higher college premium than whites over the past quarter century (*Chart 2B*). In Texas, the two groups' gains from additional education have been largely similar.

College premiums for whites have been higher in Texas than the U.S. since the 1980s. After growing at roughly the same pace in the 1980s and slowing somewhat in the '90s, nonwhite Texans started to make gains on their national peers early in this de-

**Chart 1**  
**College Premium Rises Faster  
in Texas than Nation**

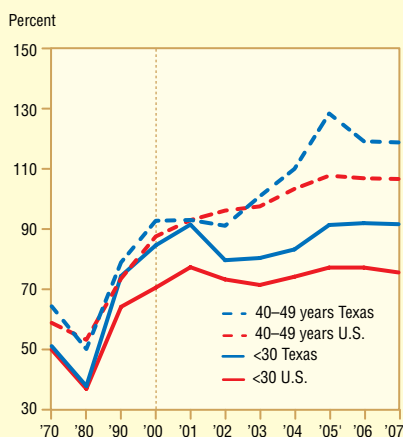


SOURCES: Census Integrated Public Use Microdata Series, 1970–2000; American Community Survey, 2001–07; author's calculations.

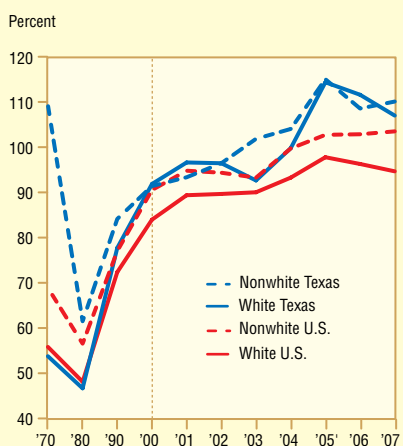
*Demographics tell only part of the story. Other factors are also at work across the nation—for example, the erosion of the real minimum wage and the decline in unionization. These could lower the wages of the unskilled.*

## Chart 2 College Premium Rises Broadly

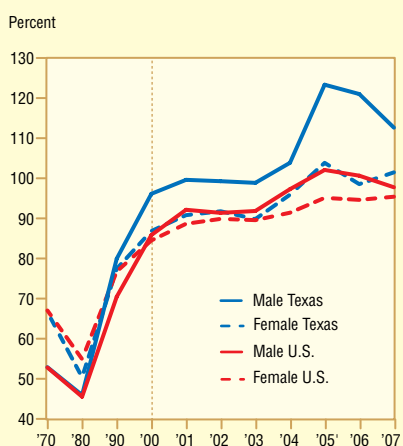
### A. Texas Edge Holds Across Age Groups ...



### B. ... and Across Racial Lines ...



### C. ... but Gender Shows Different Pattern



SOURCES: Census Integrated Public Use Microdata Series, 1970–2000; American Community Survey, 2001–07; author's calculations.

cade. Because Texas has a larger nonwhite population than the U.S., racial makeup may help explain why Texas' college wage differential exceeds that of the nation.

Gender isn't as straightforward. The gap between Texas and U.S. women was quite small. Texas men, on the other hand, had a significant edge over the nation in the college premium (*Chart 2C*). Between 1980 and 2000, employment of male college graduates rose faster in Texas than the nation, driven primarily by job growth for skilled workers in such sectors as professional and business services, education and social services, transportation and communication, and high-tech manufacturing.<sup>4</sup>

Other demographic factors may also impact the higher college premium in Texas. The immigration of unskilled workers from Mexico has been higher in Texas than the nation, which could have put downward pressure on the wages of unskilled workers. This pressure could have contributed to a rise in the relative wages of college graduates.

## Supply and Demand

Demographics tell only part of the story. Other factors are also at work across the nation—for example, the erosion of the real minimum wage and the decline in unionization. These could lower the wages of the unskilled. Most researchers find, however, that strong demand growth relative to supply growth has been the most important factor in the college premium's increase for both the U.S. and Texas.<sup>5</sup>

We use efficiency units to measure labor supply at each education level, multiplying total annual hours by a relative wage measure.<sup>6</sup> Hours logged by workers with a college degree shows a similar pattern in Texas and the nation—a sharp slowing of growth in the 1980s to the 1990s and a flattening in this decade.

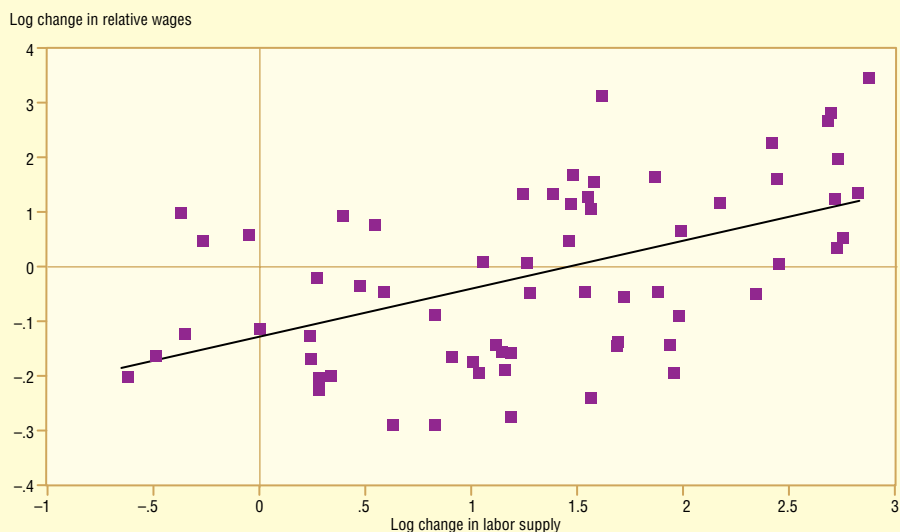
In Texas, wage growth has been higher in demographic groups for which labor supply has increased (*Chart 3*). If supply were the predominant factor in determining wages, increasing hours worked would cause wages to fall. The rising wages suggest that demand in these sectors rose at a relatively rapid pace. The results are similar to what other researchers have found for the nation.<sup>7</sup>

We look next at the demand side. Nationally, researchers have found that shifting relative demand for high- and low-skilled workers can explain the rising college premium. These



**Chart 3**

# **Texas College Graduates' Wages Rise Even as Labor Supply Increases**



NOTE: Squares represent demographic groups defined by gender, education and labor market experience.  
SOURCE: Census Integrated Public Use Microdata Series, 1970–2000.

shifts occur across industries when sectors with high concentrations of college graduates—for example, professional and business services—grow faster than those more likely to employ high school graduates, such as manufacturing.

International trade affects the relative demand for workers across industries. From 1980 to 2000, for example, Chinese products as a share of U.S. imports jumped from less than 1 percent to 8.5 percent. Imports of Mexican goods more than doubled from 5 percent to 11 percent over the same period.

Rising imports from countries with cheap and abundant low-skilled workers reduced demand for U.S. workers in light manufacturing, depressing wages for high school graduates. At the same time, increasing U.S. exports of high-tech equipment and white-collar services added to demand for highly skilled workers, putting upward pressure on their pay.

Even within sectors that employ many high school graduates, technological change has tipped the balance in favor of college graduates. Computerization, for example, reshaped the landscape in favor of skilled workers within most industries, manufacturing and services alike. Such change shifts demand toward the better educated in a way that's independent of trade.

These two forces—trade across industries, technology within them—have been stronger in Texas than the U.S. From 1980 to 2000, the state's employment shares in-

creased faster than the nation's in industries that had larger shares of college graduates—that is, those with more skill-intensive workforces (*Chart 4*).

Among major sectors based on annual hours worked, professional and business services and education had the highest percentages of college graduates between 1980 and 2000. They also had the largest employ-

ment-share gains in Texas as well as the U.S.

Retail trade and transportation—two relatively less skill-intensive sectors—had the largest shares of high school graduates from 1980 to 2000. Retail trade ranked fourth among major sectors in employment share growth, well behind professional and business services and education. Transportation managed only marginal gains, suggesting relatively weak labor demand.

For high school graduates, overall demand shifts were negative and roughly comparable for Texas and the U.S. from 1980 to 2000 (*Chart 5A*).<sup>8</sup> Within-sector changes were far more important than across-sector factors for both, suggesting technology was a reason for slower demand growth among low-skilled workers.

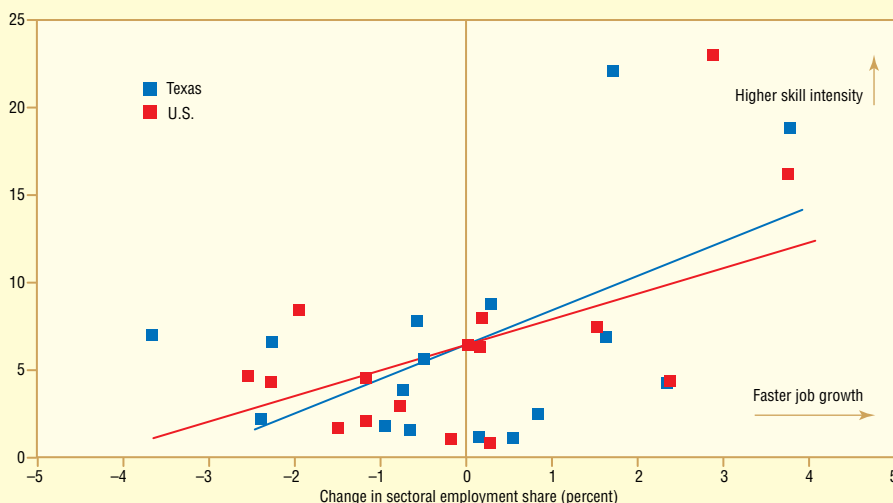
Female high school graduates saw demand increases from across-sector factors, reflecting demand changes across industries. Most likely, women held relatively fewer jobs in manufacturing and more jobs in services, a sector somewhat insulated from trade's negative impact on the wages of unskilled workers. The gains were largely offset by losses due to within-sector forces.

Across- and within-sector changes both sapped demand for male high school graduates, indicating the toll of trade and technology on factory jobs. High school-educated men fared somewhat worse in Texas than in the rest of nation.

**Chart 4**

# **Employment in Skill-Intensive Sectors Grows Faster in Texas than Nation**

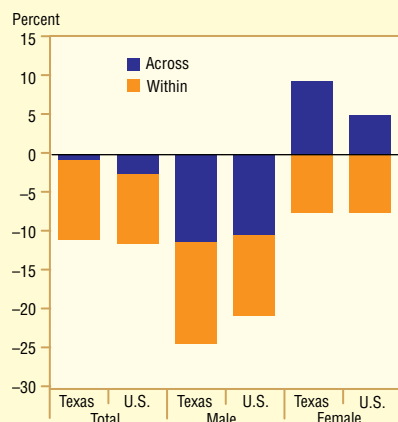
Sector's share of all college graduates (percent)



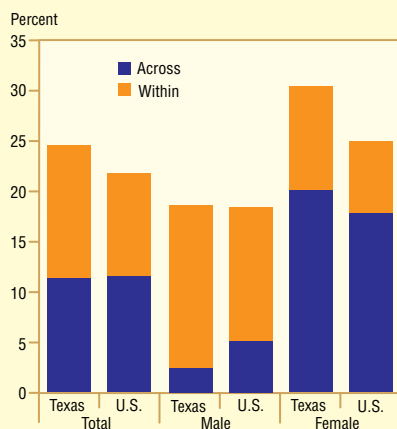
SOURCE: Census Integrated Public Use Microdata Series, 1980–2000.

## Chart 5 Demand Growth Differs by Educational Level

### A. Within-Sector Factors Explain Decline in Need for High School Graduates



### B. Across-Sector Changes More Important for Female College Graduates



NOTE: Demand index is multiplied by 100.

SOURCE: Census Integrated Public Use Microdata Series, 1980–2000.

Across- and within-sector factors are both important to the increasing demand for college graduates in Texas and the U.S. (Chart 5B). Texas' overall gains were slightly larger, mainly because of a stronger rise in demand for female college graduates.

Men's gains owe largely to within-sector factors that may reflect the spread of computers, the Internet and other technologies in the workplace, while women received greater benefits from across-sector factors tied to broad trends in the economy.

The supply-and-demand framework shows not only why college premiums have risen over time but also why they've increased faster in Texas. Demand shifts driven by trade and technology operated in Texas and the U.S., and they've been more important than supply shifts in explaining the trends in college premiums since the 1980s.

### Cause for Concern?

Long-term trends in the college premium have important implications, particularly when wage inequality increases dramatically. In 1980, a full-time worker at the 90th percentile of the wage distribution earned 3.8 times the wage of a worker at the 10th percentile.<sup>9</sup> In 2005, the 90th-percentile worker earned about five times as much, suggesting a 30 percent increase in the wage gap.

Many analysts consider the college premium a key component of widening wage inequality, fueling concerns that the less educated are being left behind. Apart from contributing to inequality, the college premium may also mean a more expensive skilled labor force. Texas ranks high among states for its business climate. An above-average college premium may discourage skill-intensive industries from coming to the state.

Policies that increase the supply of college-educated workers could help slow the rise in the college premium. Looking at data across states since the mid-1980s, one study found that slower growth in higher-education appropriations and faster growth in tuition costs led to smaller gains in college enrollments. With curtailed supplies of new graduates, college premiums increased faster.<sup>10</sup>

These results suggest that increasing college enrollment and attainment through more generous higher-education appropriations, slower growth in tuition and a greater number of colleges could help reduce the college premium in Texas by correcting the imbalance between college graduates' relative supply and demand.

The higher college premium, however,

may not be cause for alarm—at least not if it's due to increasing returns to human capital investment or accumulated skills that enhance the productivity of college graduates. In the long run, higher returns to education in Texas should encourage more high school graduates to get college degrees, a trend that may help mitigate the wage premium.

*Kumar is a senior economist in the Research Department of the Federal Reserve Bank of Dallas.*

### Notes

The author thanks Jason Saving and Carolina Rodriguez-Zamora for insightful comments.

<sup>1</sup> Data are from the Census Bureau's American Community Survey for 2001 to 2007 and the Integrated Public Use Microdata Series: Version 4.0 (machine-readable database), by Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King and Chad Ronnander, Minneapolis, Minn.: Minnesota Population Center (producer and distributor), 2008, <http://usa.ipums.org/usa>.

<sup>2</sup> The differences in the college premium between Texas and the nation are statistically significant. The 95 percent confidence bands for the two don't overlap any time after the mid-1980s.

<sup>3</sup> For the nation, college premium growth since the 1980s has been found to be faster among younger workers than older workers. See "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-Based Analysis," by David Card and Thomas Lemieux, *The Quarterly Journal of Economics*, vol. 116, no. 2, 2001, pp. 705–46.

<sup>4</sup> Because census data are available only until 2000, most of the analysis in this article is limited to the period from 1980 to 2000.

<sup>5</sup> Studies relying on supply-and-demand analysis include "Changes in Relative Wages, 1963–1987: Supply and Demand Factors," by Lawrence F. Katz and Kevin M. Murphy, *The Quarterly Journal of Economics*, vol. 107, no. 1, 1992, pp. 35–78; "Computing Inequality: Have Computers Changed the Labor Market?" by David H. Autor, Lawrence F. Katz and Alan B. Krueger, *The Quarterly Journal of Economics*, vol. 113, no. 4, 1998, pp. 1169–213; "Higher-Education Policies and the College Wage Premium: Cross-State Evidence from the 1990s," by Nicole M. Fortin, *American Economic Review*, vol. 96, no. 4, 2006, pp. 959–87; and "Long-Run Changes in the U.S. Wage Structure: Narrowing, Widening, Polarizing," by Claudia Goldin and Lawrence F. Katz, NBER Working Paper no. 13568, National Bureau of Economic Research Inc., 2007.

<sup>6</sup> This methodology is similar to note no. 5, Katz and Murphy.

<sup>7</sup> See note no. 5, Katz and Murphy, for the nation.

<sup>8</sup> Following note no. 5, Katz and Murphy, the demand index is measured as a weighted average of percent change in sectoral employment shares, in which the weights are the share of the sector in that group's overall employment.

<sup>9</sup> See note no. 5, Goldin and Katz.

<sup>10</sup> See note no. 5, Fortin.

**D**uring the 1800s, the upper East Texas economy centered on agriculture, particularly cotton cultivation. In the early 1900s, America's railroad expansion strengthened the region's trade and fueled growth in such towns as Longview and Tyler. In 1931, the discovery of the largest and most prolific oil field in the lower 48 states fueled population growth and enhanced the region's economic importance.

Today, upper East Texas' 23 counties have a population of 1.08 million. The region includes three of Texas' 25 largest metropolitan areas—Longview, Texarkana and Tyler.

As the U.S. and Texas slipped into recession last year, a balanced economy lessened the impact on upper East Texas. In March, the region's year-over-year nonfarm employment was down 0.4 percent, compared with the state's decline of 0.8 percent and the nation's 3.5 percent. Unemployment rates in the region's principal metros are near or below the state's 6.7 percent average.

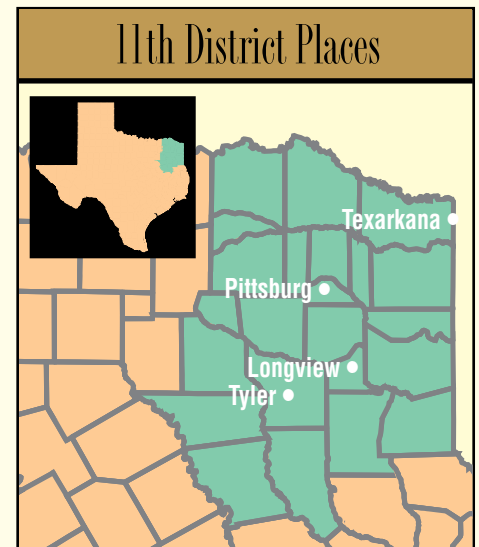
Upper East Texas' three largest metropolitan areas have a combined 250,700 nonagricultural jobs. The largest industry is

education and health services, accounting for almost 18 percent of employment. Government ranks second at nearly 16 percent, followed by retail at about 12 percent.

For the 12 months ending in March, the education and health services category had the fastest growth at 4.5 percent, well above the state's 3.4 percent rate (*Chart 1*). Leisure and hospitality exceeded the state norm in job growth by a wide margin. All other sectors besides government shrank, led by manufacturing's 7.5 percent slide.

Energy remains critical to the region's economy. Two of Texas' 25 largest oil fields and two of its 25 largest natural gas fields are in upper East Texas. The region has abundant lignite coal reserves and some of the nation's top-producing coal mines.

Agriculture and food processing are anchors for the upper East Texas economy. In 2007, the region employed 14 percent of Texas workers producing fruits and vegetables, meat and dairy products, and baked goods. Overall, upper East Texas had about 4 percent of Texas private-sector jobs.



Pilgrim's Pride, the nation's largest poultry company, is based in Pittsburg, Texas, and Sara Lee, Campbell Soup and Tyson Foods are among large national companies with operations in the region.

As a major horticultural center, upper East Texas accounts for about 20 percent of Texas' output of nursery crops. More than half the nation's rose bushes are packed and shipped from the Tyler area.

Upper East Texas is also a regional center for the timber, pulp and paper industries. International Paper and Irving-based Kimberly-Clark, two multinational producers, have large facilities in the region. More than a quarter of Texas' forest product jobs are in the region.

The Federal Housing Finance Agency's home price indexes showed moderate appreciation for existing homes in Tyler and Longview last year, suggesting a relatively healthy market. Permits to build new homes haven't held up as well, however, declining about 40 percent year over year.

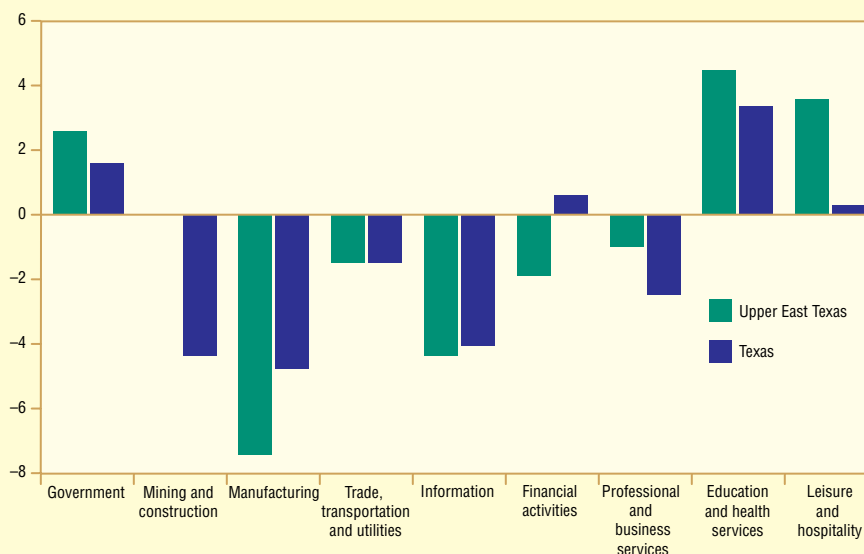
Like the rest of the state, upper East Texas has experienced healthy growth since 1990. Nonfarm employment gains have fallen slightly short of the state average during expansions, but the region has had shallower declines during downturns. Although the recession has caused mild weakening, the region's diversity is likely to keep the longer-term economic outlook relatively strong.

—Mike Nicholson and Jackson Thies

**Chart 1**

### In Metros, Some Industries Fare Well, Others Falter

Year-over-year percent change, March 2008 to March 2009



NOTES: Upper East Texas data are for Longview, Texarkana and Tyler. No change in mining and construction for upper East Texas.

SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal and other adjustments by the Dallas Fed.

## The Energy Industry in a Time of Uncertainty

Anadarko Petroleum Corp. Chief Executive Jim Hackett, who has been chairman of the Dallas Fed's board of directors since 2007, discusses some of the key issues facing the energy industry.

**J**im Hackett isn't one of those business leaders who shrink from public debate. In the past year or so, he's been interviewed on cable television's top business shows, made dozens of speeches and posted opinion videos on the Big Think Internet forum.

Since 2003, Hackett has been chief executive of Houston-based Anadarko, one of the nation's largest independent oil and natural gas exploration and production companies. He graduated from the University of Illinois in 1975 and earned a Harvard MBA in 1979. Hackett's long career in the energy industry has included experience in engineering, finance and marketing. Before taking the helm at Anadarko, he was president of Devon Energy, another Houston-based oil and gas company.

**Q. What do you see as the principal causes for the oil price spike to more than \$140 a barrel in 2008 and the fall to below \$35 a barrel earlier this year?**

**A.** Markets tend to be overbought or oversold, and you generally find the truth lies somewhere between the extreme highs and extreme lows.

When oil prices were high, we had a very active hurricane season, which affected supplies of oil and natural gas from the Gulf of Mexico. The dollar's value fell considerably, pushing oil prices up faster in dollars than in other currencies. Political instability in oil-producing regions—such as Africa, Venezuela, Russia and the Middle East—also played a role, as did investment funds flowing into one of the few sectors large money managers expected to grow. Most important, millions of people were being lifted up economically in places like India and China, which created unprecedented global demand.

We've seen commodity prices deteriorate dramatically in recent months, largely due to the economic downturn in the U.S. and around the world. This has led to a large drop



in demand and a temporary oversupply.

**Q. Will we see another spike in oil and gas prices once the global economy recovers?**

**A.** One "stimulus" factor working to help relieve the recession has been the precipitous fall in energy prices. However, the economy will recover, and we expect prices to recover sharply with increased demand over the next few years. Hopefully, we can avoid the disruptive impacts of very high energy prices on economic growth.

Our response will be important. Government energy policy has a big impact on prices. Taxing conventional fuels both directly and through huge implied levies from cap-and-trade systems will increase energy prices and won't improve energy security or provide a continuing stimulus.

Rather than discouraging production of domestic oil and clean-burning natural gas, our nation should encourage the exploration and development of our resources along with conservation. Studies show that doing

so could generate \$1.7 trillion for the U.S. government, create 160,000 jobs by 2030 and reduce our reliance on energy from countries that don't like America very much. It's going to take all sources of energy, especially natural gas, to meet America's demands in the future.

Wind and solar power will do little to replace our dependence on foreign oil. They simply displace other domestic fuels in power generation. Investment in these technologies isn't likely to produce net job gains or address the needs of our economy over the next 15 to 20 years. They also need conventional fuel backup when the sun doesn't shine or wind doesn't blow.

**Q. Where do you expect prices to be in, say, five years?**

**A.** That's tough to predict. I don't think many would've predicted \$140 per barrel in 2008 or \$30 per barrel earlier this year.

However, I do think America's energy policy will play a major role in how much we pay for energy in the future. It will be difficult to avoid high prices for oil unless the U.S. pursues different policies on resource access and production.

The dollar's relative strength and worldwide inflation will be factors, but the interplay between global demand and supply will be the primary determinant of the path of prices in coming years. Some good signs for new supplies are occurring in Brazil and West Africa, both areas where Anadarko is actively exploring.

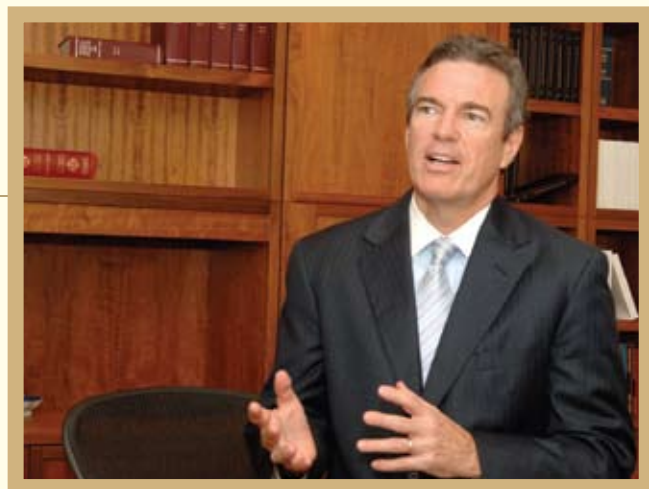
**Q. What are the prospects for increasing domestic production?**

**A.** The U.S. has the technology to do it, as we've shown with our Independence Hub project, a joint venture by Anadarko and five other companies. This offshore platform is in more than 8,000 feet of water, making it the world's deepest producing facility. It's producing enough natural gas every day to meet the needs of more than 5 million average American homes.

We've also proved we can drill and produce in an environmentally friendly way. We



*“The economy will recover,  
and we expect prices to recover sharply  
with increased demand over the next few years.”*



just went through two major hurricanes in 2008 with no incidents from our offshore facilities.

Energy resources are available here at home. According to calculations from the Minerals Management Service, Bureau of Land Management and American Petroleum Institute, federal lands currently off-limits to exploration and production have more than 116 billion barrels of oil that is recoverable. That's enough to power more than 65 million cars for 60 years. The estimates also include nearly 651 trillion cubic feet of natural gas—enough to heat 60 million homes for 160 years.

These data are fairly old. If we did new studies with today's technology, we'd likely find significantly more resources. There's no compelling reason not to open new resources for exploration and development. Even Norway, one of the most environmentally conscious nations in the world, fully develops its natural resources in a responsible manner. We can do this in America as well.

**Q. What do you see as alternative energy's potential for weaning the nation off oil and natural gas?**

**A.** We need to continue pursuing alternative and renewable forms of energy. Wind and solar currently produce about 1.1 percent of America's total electricity consumption, according to the U.S. Energy Information Administration (EIA). Hydro provides less than 2.5 percent,

but it can't be grown in any material way. In total, renewables provide less than 8 percent.

This country will need 50 percent more energy by 2030, according to the EIA, and you can see that renewables alone, even if doubled in size, can't get us there. Meeting America's energy demands in the future will require all forms of energy—especially oil and natural gas.

On the margin, alternative fuels are worth our continuing investment in research and commercialization, but science and economics should lead our efforts. Otherwise, we'll end up in the same place we are with corn-based ethanol. We continue to subsidize a failing industry that's not a good answer, either environmentally or economically.

**Q. Does the oil and gas industry see alternatives as a threat or opportunity?**

**A.** We see them as an opportunity. But they must be economically and scientifically sustainable. That means time will be required. Existing fuels must be supported for growth in the meantime, or energy prices will rise faster than our economy can stand.

Along with pursuing alternatives, we need to have a tight focus on conservation and efficiency. Turn out the lights when you leave a room. Adjust the thermostat up in the summer and down in the winter by a few degrees. Shut off your computer at the end of the day. Carpool to work if you can.

I don't think we hear those messages enough, but I believe conservation must become second nature in this country. It's good for both energy balance and greenhouse gas emissions control.

**Q. How does the energy industry respond to growing concerns about global warming?**

**A.** I've spent my career around scientists who study rocks that are millions of years old. Understanding the formation of the earth, characteristics of deposits and the climatic conditions that existed in the past are

critically important in finding oil and natural gas. Looking back over millions of years, there is evidence of periods where global temperatures were significantly warmer than today, and where carbon emissions were significantly higher than today—long before man ever inhabited the earth.

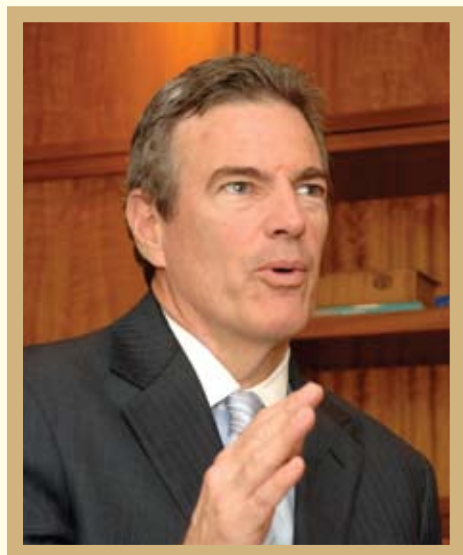
Our industry cares about the environment, and we understand how important it is to take care of our natural world. In fact, America's oil and natural gas industry invested more than \$42 billion in new low- and zero-emissions technologies between 2000 and 2006. This amount represents nearly half the total spent by all U.S. companies and the U.S. federal government combined.

We also understand that you have to find a balance. We don't want to pursue carbon reductions so aggressively that we risk plunging millions of people into poverty around the globe because they can no longer afford energy, and we don't want to draw private and public funding away from life-saving health research for work on climate-change theories that are far from universally accepted or understood.

**Q. What about the energy industry in the state?**

**A.** Texas understands the importance of oil and natural gas for the state and for the country's energy future and security. For the foreseeable future, the state will continue to be a major energy producer, both in conventional and renewable resources.

Texas is also blessed with a diverse economy that's no longer heavily reliant on any one sector, which is particularly beneficial in today's economic and financial climate. However, the energy industry will continue to be a big part of what makes the state economy grow.



# The Maquiladora's Changing Geography

By Jesus Cañas and Robert W. Gilmer

*A lack of data has limited our understanding of the distribution of maquiladora activity. Recently, Mexico's chief statistical agency provided previously unpublished information that will allow us to draw a more detailed portrait.*

The role of the Mexican maquiladora has changed greatly in recent years, but the basics remain the same. The typical plant is foreign owned and engaged in labor-intensive assembly of intermediate or final goods.<sup>1</sup> The vast majority of inputs are brought from the U.S. or another country, and the output is usually sold in the U.S.

Maquiladoras are an extension into Mexico of U.S. production of automobiles, electronics, apparel and many other goods. They're a major engine of growth in cities along the U.S.–Mexico border, where the plants are concentrated. Economic benefits spill into neighboring U.S. cities, creating jobs in manufacturing, warehousing, transportation, logistics, real estate services and major border protection programs.<sup>2</sup>

These general characteristics are well known, but a lack of data has limited our understanding of the distribution of maquiladora activity. Recently, the Instituto Nacional de Estadística y Geografía (INEGI), Mexico's chief statistical agency, provided previously unpublished information that will allow us to draw a more detailed portrait of an industry that employs 1.2 million workers, accounting for about a third of Mexico's manufacturing jobs.<sup>3</sup>

We take a preliminary look at where specific maquiladora activities take place within Mexico. Then we examine changes in location since 1990, finding that the North American Free Trade Agreement (NAFTA) and other trade pacts have been the most important factors reshaping patterns of maquiladora employment.

## Maquiladora Location and Activity

Mexico created the Border Industrialization Program in 1965 to promote maquiladoras, initially restricting plants to a 20-kilometer-deep strip along the U.S.–Mexico border. The original maquiladora cities were Matamoros, Juárez, Nuevo Laredo and Tijuana. Mexico relaxed location restrictions in the early 1970s, allowing the program

to expand into the interior, except for such congested and highly industrialized regions as Monterrey and Mexico City. All restrictions disappeared by the early 1990s.

The INEGI data allow us to profile maquiladora activity for 1990, 2000 and 2006, showing the percentage of employment by city and region, based on total hours worked. The year 2000 marked the division between a long period of virtually uninterrupted industry expansion and a period of much slower job growth or even decline.

The slowdown started with the U.S. recession in 2001. The slump converged with potent foreign competition from China, the Caribbean and elsewhere to cut maquiladora employment by 298,000 jobs, or 22.1 percent, in 17 months.

As the industry evolved, it became apparent that permanent job losses were concentrated in the lowest-skill, lowest-wage sectors. With the maquiladora industry shifting to higher-wage, higher-productivity operations, the pace of recovery fell back on Mexico's long-standing competitive advantages, such as proximity to the U.S., an experienced and skilled workforce and a stable political system.<sup>4</sup>

INEGI has tracked 17 principal maquiladora cities for many years. They made up 78.4 percent of maquiladora hours worked in 1990 but only 66.4 percent by 2000 and 67.9 percent in 2006 (*Table 1*).

Eleven of the 17 cities are on the U.S.–Mexico border, and their collective employment share went from 70.3 percent in 1990 to 56.7 percent by 2000 and 61.1 percent by 2006. For the six cities on the Texas–Mexico border, the combined share of maquiladora employment fell from 45.6 percent in 1990 to 38.4 percent in 2006. Juárez's share of maquiladora work has fallen since 1990, but it remains the No. 1 employer among the 17 cities. Gaining share, Reynosa has risen to third; losing share, Matamoros has sunk to fifth. In 2006, California border cities Tijuana at 13.8 percent and Mexicali at 4.6 per-

**Table 1**  
**Maquiladora Employment Patterns Shifting**

	Share of total hours worked			Employment*
	1990	2000	2006	2006
<b>17 principal cities</b>	78.4	66.4	67.9	837,828
<b>Other cities</b>	21.6	33.6	32.1	396,471
<b>Border cities</b>	70.3	56.7	61.1	753,846
Texas border	45.6	33.0	38.4	474,434
California border	18.9	20.0	19.2	236,968
Arizona border	5.8	3.7	3.4	42,398
<b>Interior cities</b>	8.1	9.7	6.8	83,982
Border interior	7.0	7.2	6.4	79,276
Distant interior	1.1	2.5	.4	4,706
<b>Texas border cities</b>				
Juárez	25.1	17.9	20.6	253,937
Reynosa	5.3	5.1	8.3	101,882
Matamoros	7.4	4.7	4.4	54,208
Acuña	3.2	2.4	2.6	32,579
Nuevo Laredo	3.0	1.7	1.8	22,036
Piedras Negras	1.6	1.1	.8	9,774
<b>Nation</b>	100	100	100	1,234,299

\* Full-time-equivalent employment, based on annual hours worked per city, divided by annual hours per employee. Annual hours per employee is based on 44 hours a week and a standard vacation and holiday schedule.

NOTE: Numbers may not total due to rounding.

SOURCES: Instituto Nacional de Estadística y Geografía; authors' calculations.

cent filled the No. 2 and No. 4 positions.<sup>5</sup>

What do maquiladoras produce by city? Juárez was always an important center for automobile-related parts and components, and Tijuana specialized in consumer and business electronics. However, the new INEGI data offer a broader look at the distribution of maquiladora activity by sector.<sup>6</sup>

For the 17 cities, we looked at the two largest sectors in 1990 and 2006 and found evidence of greater geographical diversity. On average, the largest sector accounted for 44.2 percent of employment in 1990 and 38.8 percent in 2006. The top two sectors totaled 67.3 percent of employment in 1990 and 62.1 percent in 2006.<sup>7</sup>

In both 1990 and 2006, three sectors dominated activity on the Texas border—electronics, transportation equipment and electrical machinery (*Table 2*). This holds on a broader scale as well; one of these three sectors was the largest in 12 of the 17 principal cities in 1990 and 13 of them in 2006. And one was the No. 2 sector in 10 cities in both years.

On the Texas border, output in electronics and electrical machinery is more closely related to auto parts. Most electronics maquiladoras on the California border are under Asian ownership and make products for the home, such as televisions and CD players, or for businesses, such as printers and copiers.

Exceptions to the top three sectors appear in several places—for example, the furniture sector helps explain the size of

the wood and metal products category on the California border in 1990. Services can range from call centers or coupon processing to sophisticated engineering and testing. The catchall “other manufacturing” category has grown in recent years as a result of diversifying maquiladora activities and the inability to fit some activities neatly in an aging industrial classification system.

Textiles and apparel appears as a dominant sector in three cities in 1990 but only in Torreón in 2006. However, the sector is the largest in the “other cities” category in both 1990 and 2006—a fact explained by the industry move to nonmaquiladora cities in Mexico’s interior.

### Trade Deals as Catalyst

Well-known factors drive the overall growth of the maquiladora industry—among them, the U.S. industrial sector’s performance, exchange rates, access to U.S. markets and competition from low-wage nations. As we examine the industry’s changing location within Mexico, it becomes clear that two other factors are important—geography and trade policy.

First, some sectors had already selected cities based on location. Auto suppliers wanted the best access to the U.S. heartland and often chose cities on the Texas border. Consumer electronics firms needed access to Asian suppliers, making California cities a logical choice. The apparel sector opted for the lower wages of central Mexico.

*For 17 cities, we looked at the two largest sectors in 1990 and 2006 and found evidence of greater geographical diversity. On average, the largest sector accounted for 44.2 percent of employment in 1990 and 38.8 percent in 2006.*

These historical patterns linked many cities' performance to specific sectors.

Second, changing trade rules determined the relative success of specific sectors. The past 25 years have seen rapid trade liberalization as Mexico turned away from the strong protectionist policies of the 1980s. NAFTA in 1994, the Caribbean Basin Trade Partnership Act of 2000, the end of the Multifibre Arrangement (MFA) in 2005 and competition from low-wage Asian labor followed, bringing shifting international forces.

The maquiladora industry's sensitivity to the trade agreements is logical. Dating to the 1960s, these operations were an early example of how multinational companies could use cross-border production sharing to reduce wage costs. In Mexico, the location of these plants is often based on short-term and local advantages, and their ties to

the community and its suppliers are few.

Three large maquiladora sectors—textiles and apparel, electronics and transportation equipment—stand out when measuring the extent to which trade-related regulations influence location (*Table 3*). We look at these sectors by the distribution of employment across regions in 1990, 2000 and 2006, and by annual percentage growth rates from 1990 to 2000 and 2000 to 2006.

The broad slowdown between periods isn't peculiar to these sectors; it results from cyclical and structural factors common to the maquiladora industry. What matters as we look for changes in location are the differences in these sectors' growth rates within each period—reading across rows, rather than comparing columns. The regional winners show faster growth or smaller declines. The relative losers grow more slowly or fall off by larger amounts.

**Textiles and apparel.** NAFTA opened a window for dramatic expansion of Mexican textiles and apparel—including maquiladoras in this sector.<sup>8</sup> Before the trade pact took effect in 1994, the model for most U.S. clothing companies involved producing and cutting fabric in the U.S., exporting it for sewing and finishing and re-importing the final product.

Strict quotas limited each country's re-imports, keeping apparel activity spread across a number of nations. NAFTA gave Mexican apparel decisive advantages by allowing duty-free entry into the U.S. if all components from the thread forward were of NAFTA origin. The pact also relaxed or eliminated many quotas.

Mexico's cutting and sewing sector boomed as companies shifted operations from around the world to take advantage of access to the large North American market. Hours worked in textile and apparel maquiladoras expanded 22.9 percent a year between 1990 and 2000.

New trade initiatives slowly dismantled the edge NAFTA gave Mexican apparel exports. The Caribbean Basin trade initiative expanded U.S. market access to 24 low-wage countries throughout the Caribbean and Central America.

The final blow came in January 2005 with the phase-out of the MFA, a pact that had sharply limited U.S. textile and apparel imports from India, China, Bangladesh and other low-cost Asian countries. Employment in Mexican apparel maquiladoras fell at an 8.2 percent annual rate after 2000.

Once Mexico lost the NAFTA and MFA

**Table 2**  
**Key Sectoral Changes in Maquiladora Cities**  
(Hours worked)

	Largest sector 1990	Percent share	Largest sector 2006	Percent share
<b>17 principal cities</b>	Electronics	29.2	Electronics	25.8
<b>Other cities</b>	Textiles and apparel	21.9	Textiles and apparel	37.0
<b>Border cities</b>				
Texas border	Transportation equipment	28.1	Transportation equipment	31.7
California border	Electronics	36.0	Electronics	26.1
Arizona border	Electronics	54.0	Electronics	45.6
<b>Texas border cities</b>				
Juárez	Electronics	31.1	Transportation equipment	34.8
Reynosa	Electrical machinery	50.7	Electronics	26.0
Matamoros	Transportation equipment	32.6	Transportation equipment	31.6
Acuña	Transportation equipment	29.8	Transportation equipment	57.5
Nuevo Laredo	Transportation equipment	31.7	Transportation equipment	40.0
Piedras Negras	Textiles and apparel	39.2	Electrical machinery	36.0
<b>Interior cities</b>				
Border interior	Transportation equipment	42.7	Transportation equipment	33.2
Distant interior	Electronics	26.1	Electronics	26.0
<b>Nation</b>	Electronics	26.1	Electronics	22.2
	Second-largest sector 1990	Percent share	Second-largest sector 2006	Percent share
<b>17 principal cities</b>	Transportation equipment	22.0	Transportation equipment	23.7
<b>Other cities</b>	Other manufacturing	17.1	Transportation equipment	17.3
<b>Border cities</b>				
Texas border	Electronics	24.7	Electronics	24.7
California border	Wood and metal products	15.5	Other manufacturing	20.4
Arizona border	Other manufacturing	14.7	Other manufacturing	28.2
<b>Texas border cities</b>				
Juárez	Transportation equipment	29.7	Electronics	27.4
Reynosa	Transportation equipment	18.0	Transportation equipment	15.5
Matamoros	Electrical machinery	28.7	Electronics	24.6
Acuña	Services	16.6	Electrical machinery	11.6
Nuevo Laredo	Other manufacturing	25.2	Other manufacturing	28.4
Piedras Negras	Food processing	20.2	Electronics	23.6
<b>Interior cities</b>				
Border interior	Electronics	27.1	Electronics	21.0
Distant interior	Electrical machinery	25.7	Services	18.8
<b>Nation</b>	Transportation equipment	20.8	Transportation equipment	21.6

SOURCES: Instituto Nacional de Estadística y Geografía; authors' calculations.



preferences, the sector sought cities where producers could lower costs. Central Mexico was home to the traditional Mexican apparel sector, with few maquiladoras, but foreign plants opened to take advantage of the region's experienced workers and significantly lower wages.

In 1990, plants along the Texas, California and Arizona borders accounted for 43.5 percent of maquiladora apparel production. By 2006, 82.7 percent of the apparel maquiladora activity was in smaller cities away from the border.

**Electronics.** Fueled by the tech boom, maquiladora employment on the California border expanded at a 15.1 percent annual rate from 1990 to 2000, making this area the electronic sector's fastest-growing location.

The expansion occurred despite restrictions imposed by NAFTA's Article 303, which required Mexico to charge duties on non-NAFTA inputs entering the country. Mexico responded with 20 sectoral programs that selectively lowered tariffs on inputs that were heavily supplied from Asia. This kept the electronics sector moving forward through 2000.

Trends reversed after 2000, and the California border became the second-fastest shrinking region, with employment falling at an 8 percent annual rate. Increasing Chinese competition had a lot to do with it.

The value of a Mexican location was low-tariff access to U.S. markets. China's entry into the World Trade Organization in 2001, however, lowered tariffs on China's U.S. shipments. Production for the U.S. market shifted from Mexico to China. In effect, China's lower wages in many cases trumped Mexico's proximity to the U.S.

**Transportation equipment.** Autos dominate transportation equipment maquiladoras. In the 1980s maquiladora-produced parts and components were mostly exported to U.S. assembly plants. As early as 1989, however, the Mexican government was actively encouraging maquiladoras to become suppliers to Mexico's own assembly operations, then protected by high tariff walls.

In the 1990s, NAFTA created a single, continentwide market for auto assembly and parts production. Integration and restructuring has been extensive—and complex to the point of bewilderment—but the new rules encouraged Mexico's auto-assembly sector to expand. Since 2000, new and modern plants spread across northern and central Mexico have produced about 2 million autos a year.

Until 2000, the 17 principal cities accounted for more than 80 percent of sector employment. The Texas border was at more than 60 percent. The sector's border concentration resulted from the historical need to ship parts quickly and cheaply to plants in the U.S. Midwest.

The parts and components segment remains concentrated on the border, and its primary focus remains U.S. assembly operations. However, the post-NAFTA expansion of the Mexican auto sector opened new markets. Maquiladora suppliers are following the modern assembly plants into non-traditional cities such as Guanajuato, Saltillo, Hermosillo, Silao and Aguascalientes.

Since 2000, transportation equipment sector employment has shifted toward nontraditional maquiladora cities, where employment has grown at a 10.6 percent annual rate, compared with no change in

**Table 3**  
**Trade Agreements' Impact on Three Sectors**  
(Hours worked)

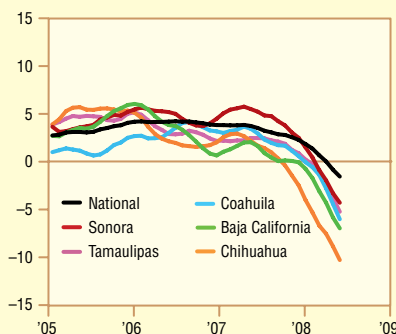
Textiles and apparel	Percent share			Annual percent growth	
	1990	2000	2006	1990–2000	2000–06
17 principal cities	53.9	20.5	17.8	11.6	–10.4
Border cities					
Texas border	27.8	5.9	4.6	5.3	–11.8
California border	9.7	3.7	5.2	11.5	–2.8
Arizona border	6.0	.8	1.3	.9	–1.3
Interior cities					
Border interior	8.5	6.1	6.2	19.1	–8.0
Distant interior	1.9	4.0	.5	32.0	–35.4
Other cities	46.1	79.5	82.2	29.8	–7.7
Nation	100	100	100	22.9	–8.2
Electronics	Percent share			Annual percent growth	
	1990	2000	2006	1990–2000	2000–06
17 principal cities	87.9	80.8	78.9	12.8	–4.3
Border cities					
Texas border	41.5	37.5	42.7	12.6	–1.8
California border	26.1	29.2	22.6	15.1	–8.0
Arizona border	11.9	6.5	7.1	7.0	–2.5
Interior cities					
Border interior	7.2	6.9	6.1	13.3	–6.1
Distant interior	1.1	.6	.4	7.6	–9.5
Other cities	12.1	19.2	21.1	19.2	–2.4
Nation	100	100	100	13.8	–3.9
Transportation equipment	Percent share			Annual percent growth	
	1990	2000	2006	1990–2000	2000–06
17 principal cities	83.1	84.2	74.4	12.1	0
Border cities					
Texas border	61.8	62.9	56.4	12.1	.3
California border	3.6	5.3	6.2	16.3	4.8
Arizona border	3.3	2.7	1.7	10.0	–5.8
Interior cities					
Border interior	14.3	13.1	9.8	10.9	–2.6
Distant interior	.2	.2	.3	15.5	5.3
Other cities	16.9	15.8	25.6	11.2	10.6
Nation	100	100	100	11.9	2.1

SOURCES: Instituto Nacional de Estadística y Geografía; authors' calculations.

*The country's embrace of freer trade has exposed the industry to the vicissitudes of the marketplace, bringing important shifts in maquiladora employment.*

**Chart 1**  
**Job Loss in Mexico Border States Outstrips National Decline**

Year-over-year growth (percent) \*



\*Three-month moving average.

SOURCES: Instituto Mexicano del Seguro Social; authors' calculations.

the traditional locations and a 0.3 percent gain on the Texas border.

### Recession and the Border States

Maquiladoras on the U.S.–Mexico border were quickly drawn into the collapse of U.S. manufacturing in late 2008, which heavily affected the automobile and consumer electronics sectors.

Ripples from maquiladora shutdowns quickly spread, bringing rapid and steep declines in formal-sector employment in northern Mexico's five maquiladora border states.<sup>9</sup> In each, maquiladoras are the dominant factor in manufacturing, and manufacturing is a very large, if not dominant, segment of formal employment.

The result has been 12-month employment declines through February that rival the losses of the 2001 recession, with Chihuahua down 10.4 percent, Baja California 7 percent, Coahuila 6.1 percent, Tamaulipas 5.3 percent and Sonora 4.4 percent (*Chart 1*). The figures far outstrip the 1.6 percent decline for all of Mexico over the same period.

These job losses are reminders that Mexico's maquiladora industry remains closely tied to the U.S. economy. At the same time, the country's embrace of freer trade has exposed the industry to the vicissitudes of the marketplace, bringing important shifts in maquiladora employment. We can anticipate further changes in maquiladora geography.

*Cañas is an associate economist and Gilmer a vice president in the El Paso Branch of the Federal Reserve Bank of Dallas.*

### Notes

The authors thank INEGI's Gerardo Leyva Parra and Gerardo A. Durand Alcántara for allowing access to the data.

<sup>1</sup>"Maquiladora Data: Mexican Reform Clouds View of Key Industry," by Jesus Cañas and Robert W. Gilmer, Federal Reserve Bank of Dallas *Southwest Economy*, no. 3, 2007.

<sup>2</sup>It has been estimated that a 10 percent increase in maquiladora output in a Mexican border city can generate a 1 to 2 percent increment in employment in the adjacent American city. "U.S.–Mexico Integration and Regional Economies: Evidence from Border-City Pairs," by Gordon H. Hanson, *Journal of Urban Economics*, vol. 50, no. 2, 2001, pp. 259–87.

<sup>3</sup>INEGI performs statistical work comparable to that done in the U.S. by the Census Bureau, Bureau of Labor and Statistics and Bureau of Economic Analysis.

<sup>4</sup>"Maquiladora Recovery: Lessons for the Future," by Jesus Cañas, Roberto Coronado and Robert W. Gilmer, Federal Reserve Bank of Dallas *Southwest Economy*, no. 2, 2007.

<sup>5</sup>The California border cities are Tijuana, Mexicali and Tecate; the Arizona border cities are Nogales and Agua Prieta; the border interior cities, located near the border but not on it, are Monterrey, Guadalupe, Torreón and Chihuahua; the interior cities are the two largest urban areas, Guadalajara and Mexico City, including the surrounding state of Mexico. The "other cities" category is computed by subtracting the sum of the 17 principal cities' employment from the national total.

<sup>6</sup>The specific sectors tracked by INEGI and their percent shares of 2006 maquiladora employment: electronics (22.2), transportation equipment (21.6), other manufacturing (15), textiles and apparel (14.4), electrical machinery (10.4), wood and metal products (5.1), services (4.4), chemicals (2.9), nonelectrical machinery (1.8), food processing (0.9), toys and sporting goods (0.6) and shoes and leather (0.5). The definitions are not comparable to classification systems used for broader application, such as the national income accounts.

<sup>7</sup>One reason for plants' attachment to a specific location in Mexico may be economies of agglomeration. Large concentrations of plants in a city can lower the cost of operations by providing skill-specific labor, an industry knowledge loop and a solid supplier base.

<sup>8</sup>See "Boom and Bust: Is It the End of Mexico's Maquiladoras?" by John Sargent and Linda Matthews, *Business Horizons*, vol. 46, no. 2, 2003, pp. 57–64; "NAFTA, Trade Diversion and Mexico's Textiles and Apparel Boom and Bust," by William C. Gruben, Federal Reserve Bank of Dallas *Southwest Economy*, no. 5, 2006; and "Causes of Growth and Decline in Mexico's Maquiladora Apparel Sector," by Mehrene Larudee, *International Review of Applied Economics*, vol. 21, no. 4, 2007, pp. 539–59.

<sup>9</sup>Formal-sector jobs are those subject to minimum wage and pension guarantees and other legal protection.

**QUOTABLE:** *"The Texas economy continues to soften and clearly remains in recession, but there are scattered glimmers of hope on the desolate economic landscape."*

—Jason Saving, Senior Research Economist



## TEXAS TRADE: Exports Take a Turn for the Worse

Exports have gone from a source of strength to a drag on the Texas economy. The state's real exports declined nearly 20 percent from their peak in second quarter 2008 through first quarter 2009, ending a five-year growth spurt.

Economic factors behind the shifting trade trends have been recession or slower growth in key overseas markets and a 19 percent rise in the dollar's value from mid-2008 through the end of March.

Exports to all of Texas' major trading partners declined. Sales to China, which had been the state's fastest growing market, dropped 29 percent from the second-quarter peak. Real exports to Latin America fell 34 percent.

Sales to Canada dropped substantially, as did shipments to the European Union. Sales to Mexico, the state's largest trading partner, retreated least, falling 13 percent.

The state's exports fell 12.3 percent in the first quarter alone. In the period, key Texas export industries posted large declines—petroleum and coal products at 22.8 percent and chemicals at 13.4 percent.

The dollar's value has declined in the second quarter, but a weakening U.S. currency isn't likely to be enough to overcome subdued global demand, dampening hopes for a rebound in Texas exports.

—Jessica J. Renier



## DAIRY SQUEEZE: Low Prices, High Costs Hit Texas Industry

Production of more than 7 billion pounds a year makes milk one of Texas' top 10 agricultural commodities. However, 2009 is shaping up to be a tough year for the state's dairy producers.

In the first half of 2008, producers saw feed prices spike, sending raw input costs up 60 percent to 120 percent year-over-year. Fearing further increases, many producers chose to lock in future prices.

Over the past eight months, however, a global recession has brought down commodity prices—milk included. It now sells for 50 percent less than it did a year ago, and producers are being squeezed because their feed costs are locked in at previously elevated prices.

In March, the cost of producing 100 pounds of milk hovered around \$15, while the sale price was closer to \$10. With the industry suffering significant losses, the number of Texas milk producers has dwindled from 360 to 341 since January 2008.

The National Milk Producers Federation recently announced a herd retirement program to alleviate the situation. Members submit bids to take their cows out of production to avoid further losses.

The industry hopes this program will allow weak producers to exit the business, reducing the milk supply and allowing prices to rise.

—Jackson Thies



## SOUTH TEXAS: Recession Taking Toll on Shipments Across Border

Recessions in both the U.S. and Mexico have slowed the flow of goods across the Rio Grande.

Data from Texas A&M International University show that total commercial vehicle crossings from Mexico into Texas fell 24 percent from the start of the U.S. recession in December 2007 through January 2009.

Crossings at Laredo, one of the most heavily trafficked routes, fell 35 percent. El Paso, another busy entry point, was off 26 percent. Three smaller checkpoints posted double-digit declines.

Commercial railroad crossings from Mexico to Texas have dropped 29 percent since December 2007, with the bulk of the decline occurring at Laredo and El Paso. Only Eagle Pass saw increased fourth-quarter traffic, while rail-

road crossings were down sharply in Laredo, El Paso and Brownsville.

Mexico's economic slowdown has curtailed southward trade flows. Commercial truck crossings from Texas into Mexico fell 9.3 percent from December 2007 to January 2009 and 12.5 percent in the fourth quarter. Commercial rail activity is down 30.4 percent since December 2007 and 19 percent in the fourth quarter.

Trade across the Texas-Mexico border provides jobs and income in such communities as El Paso, Laredo, Brownsville and McAllen. The decline in binational trade is likely to increase the recession's toll on these cities' economies.

—Mike Nicholson

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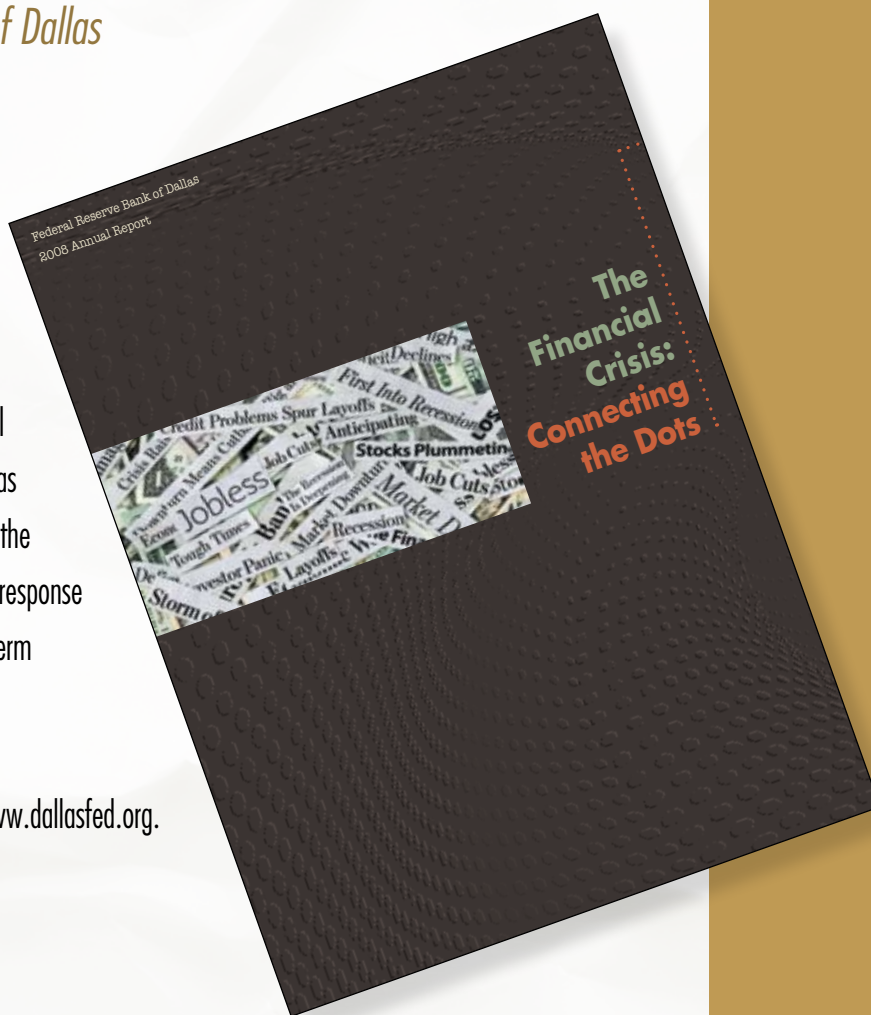


# ***The Financial Crisis: Connecting the Dots***

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