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*As a central banker,
I have the added
burden of worrying
about potential
inflationary ripples
from rising energy
costs and their
impact on the
U.S. economy.*

Like every American, I have felt the sting of paying \$3 for a gallon of gasoline, and my jaw drops when I open my power bill.

As a central banker, I have the added burden of worrying about potential inflationary ripples from rising energy costs and their impact on the U.S. economy. Paying more for energy takes a chunk out of the consumer's pocketbook, leaving less to spend on other goods and services—the prices of which are rising as producers pass on their higher costs.

The future path of energy prices is hard to predict. We do not know how much of the recent run-up in these prices results from geopolitical turbulence, market speculation, growing demand in emerging economies or real limitations on current and future supplies.

Texas occupies a special niche in energy markets. The state grew rich on oil and gas, and it has been a world leader in the industry for more than 100 years. This gives Texans a different perspective from most of the rest of the country.

In recent decades, the Texas economy has successfully diversified into many other industries, and oil and gas no longer occupies the legendary place it once did. However, today's rising energy prices have spurred new drilling activity across the globe, and our oil and gas expertise is in hot demand.

Energy producers are eager to capitalize on high prices by tapping the vast supplies of oil and gas lying under the earth. New resources are being tapped, new technologies are being developed to extract and transport hydrocarbons, and our refineries, rigs, ports, plants, storage and other industry infrastructure are being expanded, resulting in new jobs and added strength to our economy.

While these benefits may not remove the pain each of us feels at the pump, collectively we are getting some relief from the Southwest economy's comparative advantage in the oil and gas business.

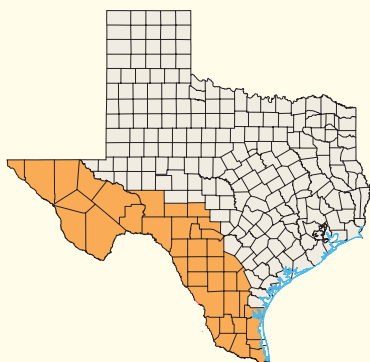
A stylized, handwritten signature in dark ink that reads "Richard W. Fisher".

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



Success in the developing world has inspired an emphasis on microfinance as an economic development strategy in the U.S., especially along the Texas–Mexico border.

Texas Border Region



NOTE: Texas Comptroller's Office definition, excluding Bexar County and Corpus Christi MSA.

Incubating Microfinance: The Texas Border Experience

By Laila Assanie and Ragbav Virmani

In many developing countries, microfinance has succeeded as an antipoverty strategy by creating jobs, fostering financial stability, enhancing vocational skills and building economically resilient communities among lower income families.

In Bangladesh from 1991–92 to 1998–99, microfinance reduced poverty rates by about 3 percent a year for direct beneficiaries and led to significant declines in poverty among nonbeneficiaries.¹ In western India, organizations such as SEWA Bank put an added emphasis on saving. SEWA has reported income gains of 12 to 40 percent among participants, resulting in lower poverty rates; increased spending on food, medicine and education; and greater financial security in general.²

Success in the developing world has inspired a growing emphasis on microfinance as an economic development strategy in many parts of the United States, including communities along the Texas–Mexico border. The microfinance approach relies not on social safety nets and welfare payments but on market-oriented programs that provide assistance to small businesses. Encouraging self-reliance may lead to greater income, self-sufficiency and control over one's financial future.

Conceived by the Grameen Bank of Bangladesh in the 1970s, microfinance entails small-denomination business loans to low-income individuals who lack access to mainstream financial institutions, such as banks. The loans range from less than \$50 in developing countries to as much as \$35,000 in the U.S.

Microfinance caters predominantly to microenterprises—the smallest of small businesses, with fewer than five employees and requiring less than \$35,000 in start-up capital. Today, in addition to microenterprise loans, most microfinance institutions around the world offer savings accounts, housing finance, money transfer services, consumer loans, financial education and vocational

training to low-income individuals.

Although it's a wealthy country with sophisticated financial services, the U.S. has millions of low-income, minority and immigrant households that lack access to some of the most basic banking and financial services. Several factors contribute to the low participation in mainstream banking.

First, low-income families often lack the basic financial literacy needed to open and maintain accounts at mainstream banks or simply don't trust banks. Research has shown that those without accounts seldom even initiate a loan application at mainstream banks because they anticipate rejection.³

Second, these individuals may find it difficult to maintain minimum balances required for checking and savings accounts. Fees and penalties add to the burden and make mainstream banking too expensive for people who live from one pay cycle to another.

Third, many low-income individuals hoping to start microenterprises lack the credit and work histories and other documentation required to obtain bank loans.

Being outside the formal financial sector has consequences. These households face difficulties saving, which increases their reliance on high-interest, short-term credit and makes them more vulnerable to financial crises. They also encounter barriers to borrowing. Studies suggest that a bank account is more important than net worth, education level or household income in establishing credit.⁴ Households without a credit history have no access to consumer loans, and microentrepreneurs have no access to business loans. Without such loans, it is nearly impossible to establish a credit history.

The U.S. Experience

By and large, microfinance has not been as widespread in the U.S. as in developing nations. By some estimates, U.S.

Table 1
Acción Border Lending by Occupation, 1994–2005

Occupation	Loans disbursed	Percent of total	Occupation	Loans disbursed	Percent of total
Drivers (transportation/trucking)	\$1,349,098	11.56	Housekeeping/cleaning services	\$89,607	0.77
Food, other	\$1,133,957	9.72	Tax preparation services	\$88,442	0.76
Mechanics	\$705,597	6.05	Flower shops and boutiques	\$86,987	0.75
Contractors	\$672,050	5.76	Medical services, clinics, etc.	\$86,139	0.74
Clothes/apparel	\$448,414	3.84	Upholstery, furniture, auto, etc.	\$84,700	0.73
Cosmetics	\$423,827	3.63	Electrical installations	\$81,356	0.70
Adult/child day care	\$414,671	3.55	Clubs, bars, pubs, etc.	\$71,091	0.61
Consulting	\$408,267	3.50	Importing/exporting goods	\$70,208	0.60
Courier/delivery services	\$313,736	2.69	Pet sales/grooming/accessories	\$69,035	0.59
Metalwork/welding	\$304,131	2.61	Office support	\$64,547	0.55
Beauty/hair/barber/nail shops	\$302,201	2.59	Herbs, vitamins, etc., sales	\$61,763	0.53
Vehicle sales/accessories	\$284,989	2.44	Furniture	\$56,249	0.48
Household items	\$281,834	2.41	Music	\$44,197	0.38
Printing/copying	\$270,343	2.32	Flea market sales	\$41,532	0.36
Convenience/grocery/gas stations	\$262,843	2.25	Photography	\$37,874	0.32
Arts and crafts	\$258,360	2.21	Bakeries	\$29,852	0.26
Jewelry	\$236,537	2.03	Information	\$28,681	0.25
Restaurant-prepared foods	\$215,607	1.85	Pressure washers	\$24,821	0.21
Wholesale/suppliers	\$204,488	1.75	Sculptures	\$24,518	0.21
Landscaping/gardening	\$199,141	1.71	Advertising	\$21,912	0.19
Auto parts/junkyards	\$146,790	1.26	Video stores	\$21,413	0.18
Real estate	\$118,869	1.02	Magazines, brochures, etc.	\$18,807	0.16
Seamstress and alterations	\$105,037	0.90	Appliance repair	\$11,813	0.10
Entertainment	\$104,717	0.90	Taxidermy	\$9,358	0.08
Heating/AC service	\$100,021	0.86	Vending machines	\$5,278	0.05
Fencing, carpentry, etc.	\$98,363	0.84	Other	\$895,737	7.68
Medical practices	\$90,995	0.78			
Communications/equipment	\$89,900	0.77			
			Total loans	\$11,670,698	

SOURCES: Acción Texas; TXP Inc.

microfinance beneficiaries number a few hundred thousand, compared with more than 3 million in Bangladesh, a country half the size of the U.S.

Banks and other financial institutions may be beyond the reach of many poor Americans, but the poor themselves constitute a much smaller proportion of the population in the U.S. than in the developing world. Most Americans rely on the mainstream financial sector and have no need for microfinance. Credit cards, auto loans and other forms of consumer financing are commonly available to the average American.

Business environments are very different in the U.S. than in the developing world. Microenterprises, the predominant clientele of microfinance services, often thrive in the informal sector. This sector is small in the U.S. but dominates developing countries, where labor and business laws

typically aren't enforced. The U.S. economy, by contrast, is governed by complex and well-enforced regulatory laws.

Self-employed street vendors in Calcutta just need carts, utensils and some groceries to start selling food. Their New York City counterparts would be required to obtain licenses, pass inspections, pay taxes and comply with other city regulations. In both instances, the vendors are microentrepreneurs, but start-up requirements—in both human and physical capital—are considerably higher in New York than in Calcutta. For many poor but entrepreneurial Americans, this additional burden created by the complex regulatory environment is a barrier to self-employment.

U.S. microenterprises have been able to survive in the formal economy. They account for nearly 87 percent of all businesses but only 10 to 15 percent of total employment.⁵ Stiff competition from large corporations, which enjoy low operating costs and benefit from economies of scale, is one factor hindering the growth of small businesses in the U.S., except in niche markets. Wal-Mart may put a mom-and-pop store out of business in Indiana, but it's difficult to find a similar instance in India.

Microfinance operations in the U.S. offer more services, which makes them more expensive to administer than programs in the developing world. The example of the street vendors in Calcutta and New York City illustrates the need for business development services in conjunction with microfinancing.

Most microfinance programs in the U.S. have found their footing by enhancing the likelihood of success in small businesses. In addition to supplying loans to small businesses, they provide technical training, business planning assistance, market awareness and financial literacy. Today, nearly two-thirds of all microfinance pro-

Table 2
Acción Texas Lending Impact, 1994–2005

	Total clients	Total loans	Total loan amount	Average loan amount	New economic activity	New income	New jobs	New tax revenue
Total border	1,476	2,167	\$11,670,698	\$5,386	\$18,793,296	\$5,914,384	244	\$1,165,214
Total Texas	4,400	6,966	\$41,635,810	\$5,977	\$77,498,915	\$24,774,871	982	\$4,512,655
Border as percent of Texas	34	31	28	90	24	24	25	26

SOURCES: Acción Texas; TXP Inc.

grams require in-class business training before the loan process can begin.⁶ Training increases operating costs of administering microfinance, resulting in continued need for subsidies, philanthropy and cost cutting.

Microfinance Along the Border

Although U.S. microfinance and microenterprise have for the most part lagged the developing world, some areas in the U.S. have become success stories for these efforts. The Texas–Mexico border is one.

To analyze microfinance activity along the border, we consider the most recent report from Acción Texas.⁷ Its data are among the best available for two reasons: First, the organization keeps detailed administrative records, and second, it's the biggest affiliate of Acción USA, the largest micro-lending network in the country. Acción Texas' loan portfolio has grown from \$610,000 in 1995 to more than \$8 million in 2005 (nominal dollars), an annual growth rate of 120 percent. The loan repayment rate is about 90 percent, considered high given that most of Acción Texas' clients are business novices and have low to moderate incomes.

Acción Texas data from 1994 through 2005 reveal that 34 percent of Acción's clients were border residents, accounting for 31 percent of the number of loans and 28 percent of the dollar amount. Given that the border accounts for 12 percent of the state's population, these numbers indicate strong demand for microfinance on the border.

From funding local day care centers to bakeries, the loans support a wide range of occupations across the border region (*Table 1*). At 93 percent, Hispanics—many of them immigrants—are by far the majority of loan recipients. Hispanics make up about 80 percent of the border population.

Loans disbursed by Acción Texas have had a positive impact on the border economy. Between 1994 and 2005, Acción Texas estimates, its \$11.7 million in microloans created nearly \$19 million in sales revenue and household spending, nearly \$6 million in additional income and 244 new jobs (*Table 2*).

The wide range of occupations covered by Acción's border loans is evident in new job creation over a similarly diverse cross-section of industries (*Chart 1*). In addition to benefiting the community, Acción Texas notes, these microloans

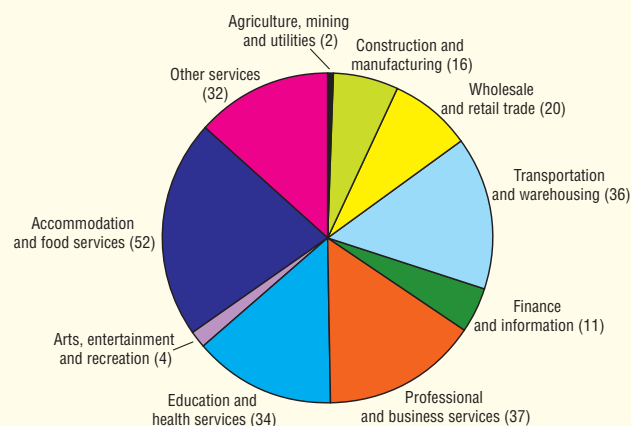
added over \$1 million to state and local tax coffers.

Whether on the Texas–Mexico border or in Bangladesh, any microfinance program's key objective is to aid economic development by helping the working poor improve their well-being. Evidence suggests microfinance has played this vital role by facilitating entrepreneurial activity on the Texas border (*see box titled "Border Success Stories" on page 7*). Research reinforces the importance of border area microfinance to the growth of microenterprise and economic self-reliance among the working poor.⁸

Spurring Entrepreneurship. New business creation along the Texas–Mexico border has grown at a rapid clip for the past several years. According to the region's economic census, the number of one-person microenterprises rose 113 percent between 1992 and 2002. By contrast, these microenterprises grew 32 percent in Texas and 25 percent in the U.S. (*Table 3*).

Such one-person businesses account for nearly 80 percent of all establishments in the border region, higher than the national average of 72 percent. Over the same time span, the border region's microenterprises increased their revenues, after adjusting for inflation, by 114 percent, doing far better than Texas' 63 percent and the nation's 44 percent.

Chart 1
Jobs Created by Acción Border Lending, 1994–2005



SOURCES: Acción Texas; TXP Inc.

The Hispanic community provides another indicator of robust microenterprise growth on the Texas border. Between 1997 and 2002, the border region's 44 percent growth in Hispanic business ownership outstripped the state's 33 percent increase. Over the same five years, the region's Hispanic population grew roughly 17 percent. Clearly, more and more Hispanics are getting involved in entrepreneurial activity in the Texas border region.⁹

In addition to registered businesses, the region hosts many informal, cash-based microenterprises, which have probably grown rapidly in number but do not show up in official statistics. In fact, studies indicate a fourth of the income-generating activity in the Texas border colonias occurs in the informal sector.¹⁰

Why the Texas Border? The Texas border is well-suited to both microfinance and self-

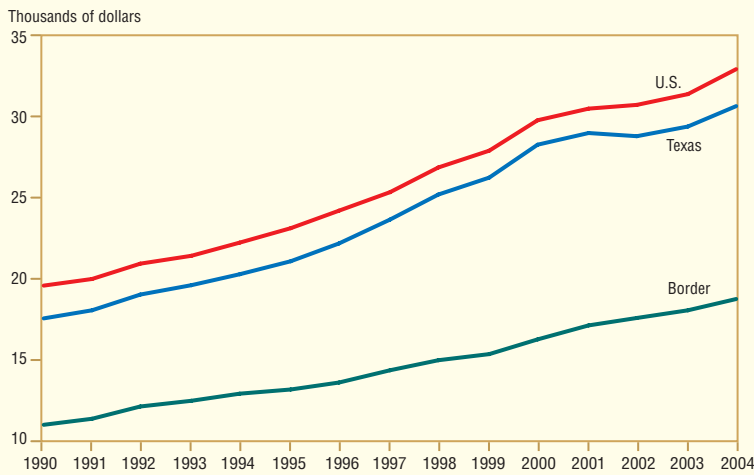
Table 3
Border Self-Employment Growth Healthy

	Number		Percent change	Sales (thousands)		Percent change
	1992	2002		1992	2002	
Border	50,909	108,201	113	\$1,780,530	\$3,813,050	114
Texas	1,050,584	1,388,284	32	\$38,590,973	\$62,846,543	63
U.S.	14,118,184	17,646,062	25	\$534,630,792	\$770,032,328	44

NOTES: Sales are in 2002 dollars. Border data are total of the four border MSAs (Brownsville, El Paso, Laredo and McAllen).

SOURCE: U.S. Census Bureau, Economic Census.

Chart 2
Border Per Capita Income Falls Short of Texas and U.S.



SOURCES: Bureau of Economic Analysis; authors calculation s.

employment. While the region faces the challenges of low incomes and high poverty rates, it is also dynamic and fast growing. Per capita income of the Texas border counties was \$18,636 in 2004, substantially below Texas' \$30,732 and the nation's \$33,050 (*Chart 2*). Moreover, in 2003 the region's poverty rate of 27.4 percent was significantly higher than the state's 16.2 percent and the nation's 12.5 percent.

Poverty, combined with a high and rising share of immigrants, has resulted in a large proportion of border households without access to financial institutions. Despite the widespread reach of U.S. banks, many low-income individuals, especially those living in such remote areas as the colonias, aren't yet served by mainstream financial institutions. In addition, many border residents are immigrants, who are often leery of banks. The distrust may stem from bad experiences—such as bank runs, devaluations and other financial crises—with mainstream financial institutions in their home countries.¹¹

Border residents also encounter high unemployment, underemployment and generally low levels of human capital, the result of a lack of education. Such factors may discourage them from pursuing opportunities in the formal labor market, turning them toward microenterprise. In fact, both Mexican immigrants and non-Hispanic whites on the border display a greater tendency toward self-employment than the same groups elsewhere in the interior U.S.¹² Studies also suggest that less educated immigrants are more likely to be self-employed than their more educated counterparts, probably because the latter have more lucrative employment options in the formal job market.¹³

While challenges are great on the border, so are opportunities. Because the Texas-

Mexico border is the intersection of the Texas and Mexican economies, the area has a high population growth rate—mostly from immigration—and expanding cross-border economic activity, with retail sales to Mexican shoppers generating millions of dollars in revenues annually. Such growth, accelerated by the inception of the North American Free Trade Agreement in 1994, has created opportunities for microenterprises, especially in retail trade. These characteristics could in part explain why the border region's annual job growth of 2.4 percent between 1994 and 2005 exceeded the national average of 1.5 percent (*Chart 3*).

The high proportion of immigrants along the border has also led to microenterprise growth for several reasons.

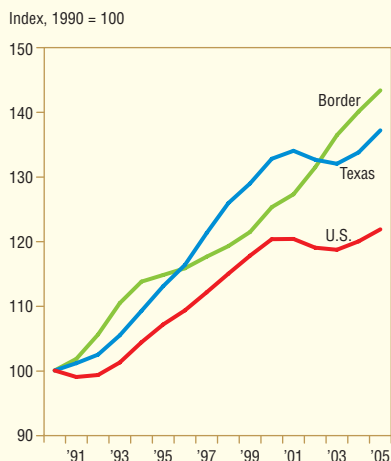
First, many low-income immigrants lack proper documentation, which encourages an informal sector where cash-based microenterprises thrive. As the developing world has shown, the presence of a large informal sector furthers the need for micro-finance.

Second, proximity to Mexico makes the border a good example of an ethnically concentrated community that carves out niche markets for ethnic goods and provides opportunities to work with and learn from employers with a similar background.¹⁴ These niche markets promote self-employment, perhaps because entrepreneurs have a comparative advantage over those outside the ethnic community in providing goods and services to other members of their groups.

Third, self-employed immigrants find microenterprises important to increase family income, gain control over their finances and reduce dependence on social support structures or public assistance programs. For instance, an Aspen Institute study found that reliance on welfare payments among microentrepreneurs who participated in microenterprise development programs fell from 24 percent to 17 percent over a five-year period, with a decline in payments from \$1,460 to \$939.¹⁵

Finally, immigrants from countries with high rates of self-employment, such as Mexico, are generally more likely to pursue similar activities in the U.S.¹⁶ The immigrants perhaps adhere to long-held cultural beliefs that self-employment is a better way to earn a living. Women in particular may find entrepreneurship the most flexible way to balance work and family.

Chart 3
Border Job Growth Rises Above Texas and U.S.



SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

Border Success Stories

Finding a Way to Save

When Sara Rangel needed money to pay property taxes on her tuxedo-rental business, she turned to Acción Texas. It lent Rangel \$5,000 for her immediate needs, and after she diligently repaid the first loan, she qualified for another to accumulate inventory.

Acción Texas aided Rangel through the Border Lending and Savings Initiative and the Individual Development Account (IDA) Match Savings Program, the latter funded by an initial grant of \$250,000 from the Department of Housing and Urban Development.

Partnerships were set up with local banks to maintain these IDA accounts, which allow a client to earmark money for savings for two years. Then, the client receives double the savings—because of a dollar-for-dollar “match” program—plus interest accrued on the funds. Since her second loan, Rangel has been saving \$400 each month into the IDA, and she plans to use the accumulated savings to expand her business.

“Colonias Success Stories,”

*Department of Housing and Urban Development,
www.hud.gov/local/tx/library/archives/
2003-07-21.cfm.*

Starting a Tamale Business

In an example of microenterprise success through public, private and nonprofit cooperation, the University of Texas at Brownsville (UTB) joined with the Ozanam homeless shelter to create a local food service microenterprise from a halfway house.

After years of providing temporary shelter, Ozanam decided that business development was

the only sustainable way to aid homeless individuals. It partnered with UTB, which had assisted in microenterprise efforts for some time, and formulated a business model for a low-carb tamale production enterprise.

With the area's small customer base and limited advertising resources, UTB realized Ozanam needed a marketing strategy unlike any other. The tripartite effort came together when UTB, acting as the microenterprise development organization, persuaded the local Wal-Mart to host Ozanam's tamale kiosks, along with other goods produced by local microentrepreneurs, outside its stores on a weekly basis.

The retail giant's policy that a nonprofit receive the solicitation's primary benefits was easily met because the proceeds went to Ozanam's homeless shelter operations.

In this process, the Ozanam-sponsored tamale microenterprise developed a sound business model under counseling and assistance from UTB and received invaluable exposure to a large customer base through UTB's alliance with Wal-Mart.

Today, because of its commercial viability, the tamale microenterprise is ready to expand its business. It will receive financing available from UTB's affiliation with local microfinance organizations, as well as tips on financial literacy from such organizations as the Consumer Credit Counseling Service.

*“Strategic Partnership in the Face of Scarce Resources:
Social and Microenterprise Development at the
U.S.–Mexico Border,” by Bill McElna, The William
Davidson Institute at the University of Michigan,
January 2006.*

Promise for the Border

While the developing world is ripe for microfinance, the economic structure and labor force characteristics in the U.S. make it difficult for microfinance to succeed. The Texas–Mexico border, however, encompasses the need for microfinance and the economic, cultural and geographical advantages that encourage it. The region offers a growing market for small business enterprise and small-scale financing.

Microfinance has the potential to bolster standards of living and economic education to advance the poor, the financially disenfranchised and the unemployed from

the fringes to the mainstream. Despite its minimalist approach, microfinance can play a significant role in economic development and complement the larger-scale efforts in promoting education, infrastructure development and business investment in the Texas–Mexico border region.

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Notes

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¹ “Measuring the Impact of Microfinance: Taking Stock of What We Know,” by Nathanael Goldberg, Grameen Foundation, 2005.

² “An Assessment of the Impact of SEWA Bank in India: Baseline Findings,” by Martha Chen and Donald Snodgrass, Assessing the Impacts of Microenterprise Services (AIMS) Project, USAID Office of Microenterprise Development, August 1999.

³ “Latina Microenterprise and the U.S.–Mexico Border Economy,” by Barbara J. Robles, *The Estey Center Journal of International Law and Trade Policy*, vol. 3, no. 2, 2002, pp. 307–27.

⁴ “Banking the Poor: Policies to Bring Low-Income Americans into the Financial Mainstream,” by Michael Barr, The Brookings Institution, 2004.

⁵ Association of Enterprise Opportunity, 2003, with data from Census Bureau's Non-Employer Statistics and Commerce Department's County Business Patterns.

⁶ *Replicating Microfinance in the United States*, by James Carr and Zhong Yi Tong, eds., Woodrow Wilson Center Press, Washington, D.C., 2002, p. 240.

⁷ “Economic and Community Impact of Acción Texas, 1994–2005,” by Acción Texas and TXP Inc., July 2006.

⁸ Robles (2002).

⁹ There is evidence that Hispanic-owned enterprises, especially female-owned, grew faster along the U.S.–Mexico border than in the rest of the U.S. See “Emergent Entrepreneurs: Latina-Owned Businesses in the Borderlands,” by Barbara Robles, *Texas Business Review*, October 2004.

¹⁰ See “Partnership Focus: The El Paso Collaborative—Partnering to Build Assets,” <http://www.cdpn.org/resources/publications.asp#memberpapers>.

¹¹ “Asset Building in Latino Communities,” Federal Reserve Bank of Philadelphia *Cascade*, Spring 2006; “Financial Access for Immigrants: Lessons from Diverse Perspectives,” by Anna Paulson, Audrey Singer, Robin Newberger and Jeremy Smith, Federal Reserve Bank of Chicago and the Brookings Institution, May 2006.

¹² “Mexican Immigrant Self-Employment along the U.S.–Mexico Border: An Analysis of 2000 Census Data,” by Marie Mora and Alberto Davila, *Social Science Quarterly*, vol. 87, March 2006, pp. 91–109.

¹³ “Self-Employed Immigrants: An Analysis of Recent Data,” by Maude Toussaint-Comeau, Federal Reserve Bank of Chicago *Fed Letter*, April 2005; “The Earnings of Self-Employed Mexican Americans along the U.S.–Mexico Border,” by Chrystell Flota and Marie Mora, *Annals of Regional Science*, vol. 35, no. 3, 2001, pp. 483–99.

¹⁴ Robles (2002), Toussaint-Comeau (2005), and Flota and Mora (2001).

¹⁵ “SELP Longitudinal Survey of Microentrepreneurs,” The Aspen Institute, April 1998.

¹⁶ Flota and Mora (2001).

Charting the Course for RFID

Former Dallas Fed board member Julie England, vice president and general manager of Texas Instruments' RFID business, discusses the emergence of a new technology with Texas ties and ripples spreading far beyond the streamlining of global supply chains.

Q: What are the basics of radio frequency identification, or RFID?

A: RFID is the oldest new technology, in the sense that it was actually created during World War II. The British used it on their air-planes so they could distinguish friend from foe. In modern applications, a very small integrated circuit—sometimes less than a square millimeter—is attached to an antenna. The vast majority of RFID tags are passive, meaning they have no power source. When in the presence of a reader emitting electromagnetic radiation, the tag gets charged through a capacitor on board, wakes up and says, “Hi, here’s my number.” The reader senses that data and uploads it to a server that may be connected to a software application.

Q: If RFID has a long history, why has it only now become commercially viable?

A: Over the course of several decades, the technology has gone from closed-loop applications and proprietary approaches to global standards. Countries around the world have now set similar regulations and power levels, so that the same type of product can be moved from country to country and still be useful. Setting global standards opened up more market opportunities; more competitors came into the market, and prices fell. With lower prices, RFID became more popular by promising a greater return on investment.

Q: So this technology offers a big improvement over bar codes?

A: RFID is much more than a bar code on steroids. There are really three benefits to using RFID. One, it’s non-line of sight. You don’t have to get right in front of it to read



it. Two, you can read multiple tags at a time, up to hundreds of tags in seconds. Three, it’s mobile. You can move a product and read it simultaneously—for example, through a loading dock door.

Q: What are the uses of RFID?

A: When you’re dealing with chief information officers, who are typically the decision-makers on RFID adoption, they’re basically looking for return on investment for the part of the business using RFID. Usually, RFID stops pain points, such as high labor costs, as seen, for example, in ski ticketing on slopes in the Alps.

The best-known use was spurred by Wal-Mart’s mandate in 2003 requiring RFID use in their supply chain, starting with the top 100 suppliers in 2005. That gave huge visibility to RFID and opened the minds of a lot of competitors. The second biggest

application is actually cattle ear tags, mostly outside the United States, to protect the food chain. The oldest application in our 15 years in the business is automobile immobilizers, where you unlock your car remotely with a key fob.

We see RFID fighting counterfeiting in what we call the vice and vanity market, where even in China the use of RFID for cigarettes, cosmetics and liquor is very popular. And, of course, there is anti-diversion, which is part of the incentive for Wal-Mart and the big pharmaceutical companies to use it. Anything that can stop the diversion, or skimming, of products solves a pain point.

What we find is that many of the companies complying with mandates are actually trying to find value for RFID beyond mere compliance. They’re finding RFID can give them faster business processes or increase flexibility in fulfilling orders or perhaps personalize a product. In contactless commerce, a credit card today is a simple square, but in the future it will take on a multitude of 3-D shapes, like the fob you see from Exxon Mobil for SpeedPass. So a lot more creativity is coming into the market as many more companies adopt RFID, and I believe the rate of innovation will accelerate through the next decade.

Q: How big is the industry today?

A: According to ABI Research, the industry is \$6 billion overall, but that’s broken down into hardware, software and service. Hardware is about \$3.2 billion of the total. Forecasters have predicted rapid adoption, but as in most new markets, the rate has actually been more gradual as customers explore what they can do with RFID, how they can benefit from its use and even invent new money-saving approaches by adopting the technology.

Q: Has RFID lived up to expectations?

A: There was a lot of hype when Wal-Mart mandated RFID for its suppliers in 2003. I

*“RFID is much more than
a bar code on steroids.”*



do think we're out of the hype phase, and the reality of the adoption has set in. In 2005, Wal-Mart's suppliers started complying without a global standard. Last year, an industry standard was adopted, called Generation 2. Now many suppliers are equipped with Generation 2 transponders, readers and printers. This has allowed broader adoption, lower prices and more choice in the market.

The main barrier revolves around this industry standard being adopted globally so that RFID tags can be used worldwide. The adoption of the standard by ISO—the International Organization for Standardization—certainly helped. A key will be getting alignment with China. In a lot of ways, the Wal-Mart supply chain begins in Asia—China and India primarily—so until China aligns on the global standard, we're really not going to tag at the manufacturing level. We're still tagging at the loading dock.

Q: Where does Texas fit into this new technology?

A: More than 121 companies in the Dallas-Fort Worth area work on RFID at different levels, whether hardware, software, system integration or service. We believe we have the largest cluster of RFID companies in the U.S. We also host RFID World, the largest RFID conference in the U.S., here every year. The Metroplex Technology Business Council has adopted RFID as a special work-

ing group and started to brand the Dallas-Fort Worth area as the RFID hub.

Q: Why did Dallas-Fort Worth become a hotbed for RFID?

A: A couple of things happened. First, Wal-Mart picked Texas distribution centers to start RFID deployment in 2005. Second, a lot of telecom employees were displaced in the first half of this decade, and their backgrounds made them an especially good fit for this technology.

Q: What future applications do you feel have significant possibilities?

A: Once you identify an item, you want to know more about it. We're convinced that RFID plus sensors for temperature, pressure, time and even location will be the next big thing in little things. Right now, the most broadly used application involving sensors is measuring pressure in tires.

RFID combined with sensors often requires a tag that's active or semipassive, which means batteries are present. Those applications are going to be slightly more expensive than a passive tag on a box or pallet. When active, RFID tags can relay in real time the pertinent information to a central database, and the benefit for companies is access to that data.

Another combination we're seeing is RFID plus biometrics, which involves measurements of the human body. That's already happening in electronic passports in countries outside the U.S.

We need to think about an Internet of things. Just like we're all connected with our handy cell phones and BlackBerrys, ultimately we're going to be able to connect things. That's got a lot of appeal for significant breakthroughs in

how companies do business and how they reduce costs.

A big idea being kicked around in the industry is near-field communications, which combines cell phones with the electronic payment systems the credit card companies are now rolling out. If we put that same chip and antenna in the cell phone, the phone becomes an electronic payment device. It's already being done in Japan. It's being discussed in the U.S. and Europe.

Q: What's the holdup in the U.S.?

A: There are two main barriers to adoption. One is working out the business model between the credit card issuer, the telecom operator and the handset maker. The second is deciding who owns the customer when there's a service issue on a payment application. Is it the telecom operator who owns the wireless network? Or is it the credit card company?

Q: Will RFID become a truly global product?

A: The globalization of RFID is being propelled by retailer use. By the end of the decade, Wal-Mart and other retailers that have mandated RFID use in their supply chains will help drive the first truly global implementation, where RFID tags move data between customers, between companies and across boundaries.

The next wave will probably happen because of cell phones and credit cards. We're going to want to take our payment instruments and use them when we travel anywhere in the world. So consumers will join retailers as future drivers of RFID-enabled functions.



Dip May Reflect Decline in Education

Although North Texas' economy has been growing much faster than the nation's for more than two years, the region's median household income fell in 2005, while the U.S. as a whole held steady.

Falling income during an expansion is unusual, but the decline probably reflects fewer years of schooling among new residents, rather than lower earnings for existing workers.

Adjusted for inflation, North Texas' median household income dropped \$1,084, or 2.1 percent, from \$51,419 in 2004 to \$50,335 in 2005 (*Table 1*).¹ The state's household income fell at a similar rate, slipping \$1,033, or 2.4 percent. Meanwhile, the nation didn't see much change—with income increasing \$46, or 0.1 percent.

Despite last year's decline, North Texas' median income remains substantially higher than the state's and the nation's. This is partly due to the area's high share of college-educated adults—31.5 percent (*Table 2*).

Although wages and salaries make up the bulk of the income measure, it also includes money from self-employment, interest and dividends, Social Security, public assistance and other sources.

The median is the midpoint of the income distribution. Half of households have income below it and half above it. Economists usually prefer the median to the mean, or average, which can be distorted by such factors as a handful of households with very high incomes.

Table 1
Real Median Household Income

	2004	2005	Percentage change
North Texas	\$51,419	\$50,335	-2.1
Texas	\$43,172	\$42,139	-2.4
U.S.	\$46,196	\$46,242	.1

NOTES: North Texas numbers are based on American Community Survey data for Collin, Dallas, Denton and Tarrant counties, weighted by population. All income is in 2005 dollars.

SOURCE: American Community Survey.

Table 2
Population and Educational Attainment

	Population 2005	Population growth (percent) 2004-05	At least high school diploma (percentage of population 25 years+)		At least bachelor's degree (percentage of population 25 years+)	
			2004	2005	2004	2005
North Texas	5,063,300	1.9	82.4	81.8	32.5	31.5
Texas	22,270,165	1.6	78.7	78.8	25.6	25.1
U.S.	288,378,137	.9	83.9	84.2	27.0	27.2

SOURCE: American Community Survey.

Median income can rise or fall because of changes in existing households' incomes or changes in the population of households. The latter is usually the result of in-migration and leads to changes in household characteristics.

Paychecks do not appear to be the key factor in North Texas' declining incomes in 2005. Real median earnings held steady—good news, given that they fell 1.1 percent in the U.S. and 3.5 percent in Texas.²

That leaves household characteristics. Educational attainment fell slightly in North Texas in 2005. The share of the adult population with at least a high school diploma slipped from 82.4 percent to 81.8 percent (*Table 2*). Those with at least a bachelor's degree declined from 32.5 percent to 31.5 percent. Nationally, the percentages of both groups rose slightly in 2005.

Migration can affect income statistics, particularly if the newcomers differ significantly from the existing population. High population growth rates combined with falling education rates suggest this may be happening in North Texas.

The region's population jumped 1.9 percent in 2005, more than double the U.S. growth of 0.9 percent. North Texas' population gains include transplants from other countries and states; in both cases, a substantial fraction of migrants are foreign-born. About a third of U.S. immigrants lack a high school degree, making it likely that high

rates of in-migration to our region have pushed down overall education levels.

Because education and income are highly correlated, these changes may be showing up in lower total income.

Healthy job growth and low living costs will continue attracting U.S. and foreign-born workers to North Texas. This is a positive trend as new workers complement the highly skilled existing labor force, producing goods and services that are in growing demand. More disconcerting and difficult to explain is the wage stagnation suggested by the declining real median earnings of workers at the national level.

—Anna Berman and Pia Orrenius

Notes

¹ Income is from the American Community Survey (ACS), which provides detailed, annual data at the county level. In 2005, the survey was based on a sample of about 3 million households. ACS data cover topics similar to those on the long-form federal census taken every 10 years, including demographic, social and economic indicators.

² Firm-based data suggest no change in average earnings in Texas in 2005, while Current Population Survey data on median earnings show a decline. See "Two Views on How Texans Are Doing," by Pia Orrenius and Anna Berman, *Southwest Economy*, May/June 2006, p. 10.

NAFTA, Trade Diversion and Mexico's Textiles and Apparel Boom and Bust

By William C. Gruben

A fourth to a fifth of Mexico's million-plus maquiladora workers once produced textiles and apparel, many of them in factories near the U.S. border. Employment peaked at nearly 300,000 workers in early 2001. Since then, widespread layoffs have slashed jobs. By December 2005, they'd fallen to 174,000, a 41 percent drop in five years (*Chart 1*).

The industry's massive downsizing has evoked great concern on both sides of the border, with hand-wringing about unbeatable Chinese competition and the imminent demise of Mexican apparel operations. The situation isn't that grim, though.

Mexico's textile and apparel export industry isn't going to disappear, although it has shrunk in response to market realities related to trade policy changes. What's happened reflects a facet of trade liberalization little understood by the general public: trade diversion. Coined by economist Jacob Viner, the term describes how discriminatory tariff policies can undermine the benefits of free trade, leading to inefficient allocation of resources and higher costs for consumers.¹

Before joining the European Union, for example, Britain imported most of its lamb from New Zealand, the cheapest producer. Adopting the common EU tariffs made New Zealand lamb more expensive in Britain, opening the door for producers in member countries, particularly the French. For exporting nations, trade diversion can lead to dramatic ups and downs in sales—which is just what occurred with Mexico's textiles and apparel.

When the North American Free Trade Agreement took effect in 1994, its proponents emphasized the pact's efficiency and growth effects. Their arguments rested on the findings of long-dead economists whose writings still ring true. Adam Smith, David Ricardo and others had shown that increased international trade would allow economies to direct resources toward what they produced relatively efficiently, exporting what they didn't consume at home and

importing what their trading partners could produce more effectively. World efficiency would increase. Products would be cheaper. Everyone would be better off.

To achieve these mutual gains from trade requires a world in which all economies are open and each nation treats all others the same. While regional free trade agreements like NAFTA do lower prices for their members, they are quite different from universal free trade.

By their very nature, regional accords lower tariffs and regulatory burdens for members, giving them an edge over nonmembers. Trade diversion occurs when these preferential trade agreements encourage higher-cost imports of member countries to replace the lower-cost imports of nonmembers.

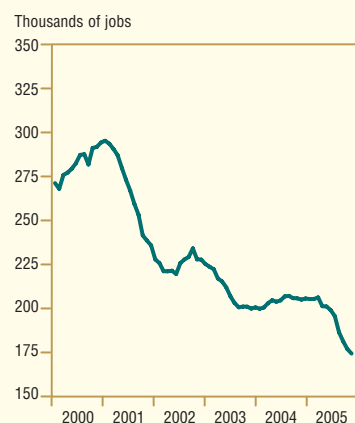
Where trade diversion exists, economic theory suggests that all good things must end—at least for those that have benefited from the trade preferences. As an industry's imports increase under a regional trade deal, resistance to opening markets falls off. At the same time, those excluded from the preferential arrangement lobby for the same benefits. More countries receive such deals and then even more do. This result suggests that a little bit of trade opening can lead to a lot.

When the importing countries extend preferential trade benefits to more nations, the boom from the original diversion may be followed by a bust as new trading patterns emerge and the world's low-cost producer regains its advantage. This may not always occur, but it's exactly what happened with Mexico's textiles and apparel. With the erosion of Mexico's NAFTA edge, China increased U.S. sales. Mexico lost market share—and as a result, employment fell in the textile and apparel maquiladoras.

Mexico's Experience

Comparing the trends in U.S. apparel imports from Mexico, China and countries that eventually became part of the Domini-

Chart 1
Jobs in Mexico's Textile and Apparel Maquiladoras Plunge



SOURCE: Instituto Nacional de Estadística, Geografía e Informática.

Mexico's textile and apparel export industry isn't going to disappear, although it has shrunk in response to market realities related to trade policy changes.

On a leveled playing field, China regained market share at the expense of both Mexico and Central America.

can Republic–Central American Free Trade Agreement suggests that trade diversion was behind the boom-and-bust cycle in Mexico's textile and apparel maquiladoras.

In the early 1990s, China topped Mexico in apparel exports to the U.S. (*Chart 2*). A shift toward Mexico began with NAFTA's signing in 1993 and accelerated with implementation in 1994.

Under NAFTA, Mexican apparel enters the United States duty-free, provided all its components from the thread forward are made in the United States, Canada or Mexico. This provision was included in the agreement to benefit not only Mexican apparel manufacturers but also U.S. textile and fiber companies.

When NAFTA lowered U.S. barriers,

Mexican producers could compete in the huge market north of the border, even though other countries could produce textiles and apparel more cheaply. By the late 1990s, Mexico was picking up market share so rapidly against China that it briefly became the No. 1 apparel supplier to the U.S.

With NAFTA in place, Mexico also began to increase its U.S. sales more rapidly than the Central American nations. The gains continued until 2000, when the U.S. offered low-wage Caribbean and African countries some of the same benefits it had bestowed on higher-wage Mexico under NAFTA. Last year, the United States signed a broader preferential trade agreement with DR-CAFTA.

Meanwhile, China had developed highly competitive apparel export industries, helping it become the world's low-cost producer. In 2001, China joined the World Trade Organization, just as the group was dismantling the Multifiber Arrangement, the textile and apparel quotas rich countries had maintained to protect their industries from imports. On a leveled playing field, China regained market share at the expense of both Mexico and Central America.

Maquiladora Jobs

The NAFTA-created trade diversion benefited Mexican textile and apparel workers. Comparing employment indexes

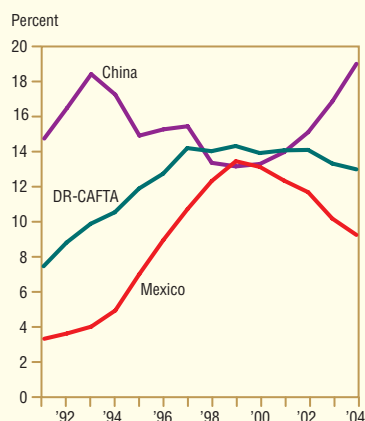
for textiles and apparel and other maquiladora industries since 1990 shows jobs surged when Mexico had a NAFTA edge and increased its U.S. market share (*Chart 3*). As the U.S. economy gained momentum after July 2003, employment in all other maquiladoras climbed steadily. Textile and apparel job growth, however, has faltered (*see box*).

But the sector's employment since NAFTA belies fears of an industry on the brink of demise. The early NAFTA-driven boom gave the industry a big lift, but the gains could not be sustained. Even with the recent declines, however, the number of textile and apparel jobs remains much further above its pre-pact level than other maquiladora employment.

NAFTA no longer provides Mexican textiles and apparel much benefit. The trade diversion has ended. To show this, we created an economic model that compares how the industry's employment would fare in two scenarios—one assuming NAFTA continued to give Mexico the same edge it had before 2001, the other assuming NAFTA didn't exist.

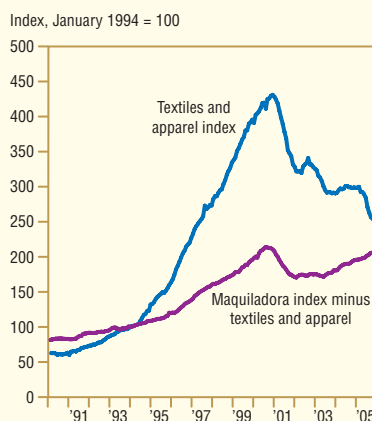
We needed to control for other variables that can affect apparel trade. The first is manufacturing wages in Mexico, the U.S. and a sample of Asian countries. If Mexican pay fell relative to U.S. or Asian wages, the country's textile and apparel maquiladora employment would likely rise. In a global world, when the cost of doing

Chart 2
China Gains as Trade Diversion Unwinds



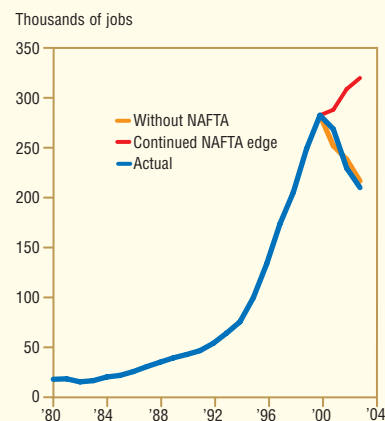
SOURCE: Organization for Economic Cooperation and Development.

Chart 3
Textiles and Apparel Lead Maquiladora Job Growth



SOURCE: Instituto Nacional de Estadística, Geografía e Informática.

Chart 4
No-NAFTA Scenario Predicts Actual Textile and Apparel Employment



SOURCES: Instituto Nacional de Estadística, Geografía e Informática; Federal Reserve Bank of Dallas.

business in one place becomes cheaper than in another, producers migrate. The second variable is U.S. apparel output. As production increases in the U.S., it will also go up in Mexico. This occurs whether Mexican apparel factories are suppliers to U.S. producers or Mexico's industry is swept higher by the same retail demand that boosts U.S. apparel employment.

Using our model for 1980–2000, we can estimate what happened in 2001–03 under two scenarios. We find that Mexico's textile and apparel manufacturing employment would have continued to rise sharply if other trade agreements hadn't eroded Mexico's preferred position in the U.S. market (*Chart 4*). Taking away NAFTA, however, produces an estimate of textile and apparel maquiladora employment that nearly matches the actual experience of 2001–03.

The same supply, cost and demand variables that once explained fluctuations in Mexico's maquiladora employment still seem to pick up much of what happens. Mexico's export industries will continue to benefit from being on the doorstep of the greatest consumer market on earth. But for textiles and apparel, NAFTA isn't what it used to be.

It's hard to predict what will happen to Mexico's textile and apparel maquiladoras now that China and the Caribbean countries have increasingly open routes to the U.S. market. Many analysts argue that Mexico maintains a competitive advantage based on its ability to deliver products to the U.S. quicker than China can. Because both countries stitch garments under contract with U.S. labels, it may be that the more trendy clothes will be made in Mexico. Any way you look at it, competition will be intense.

Gruben is a vice president and senior economist at the Federal Reserve Bank of Dallas.

Note

¹ *The Customs Union Issue*, by Jacob Viner, New York: Carnegie Endowment for International Peace; London: Stevens & Sons, 1950.

Textiles Aside, Maquiladoras Back on Growth Path

Textile and apparel maquiladora employment has continued to decline at a time when the rest of the industry is expanding. Overall, Mexico's assembly-for-export sector has been adding jobs since it bottomed out at a seasonally adjusted 1,042,085 workers in July 2003. The most recent employment count stood at 1,213,841 in June.

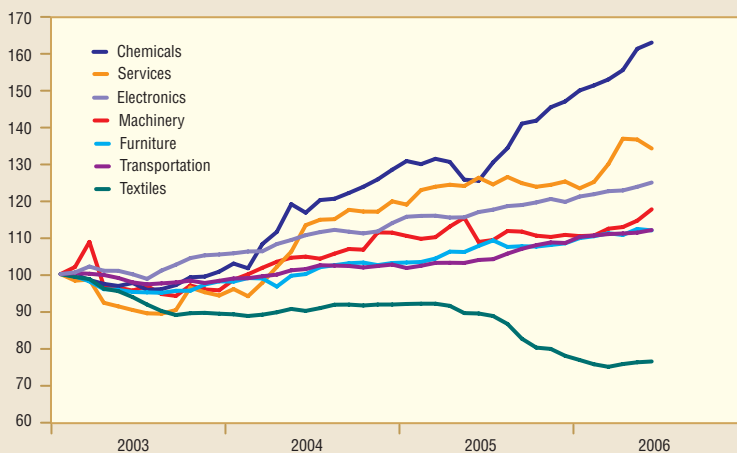
The strongest sector has been chemicals, up 67.8 percent since January 2003, followed by services at 45.1 percent, electronics at 25.4 percent, machinery at 21 percent, furniture at 17 percent and transportation at 14.9 percent. By contrast, textiles and apparel declined 15.6 percent over the same time span.

The maquiladora sectors' varying fortunes have geographic implications. The industry is growing in Mexican border cities that cater to mainstream U.S. manufacturers. Since January 2003, for example, maquiladora employment is up 40.9 percent in Reynosa and 25.8 percent in Ciudad Juárez. Elsewhere, border cities' maquiladora industries have been held back by various impediments, such as infrastructure deficiencies. Matamoros' job gains were 2.8 percent. Employment fell by 30.8 percent in Piedras Negras and 13.6 percent in Ciudad Acuña.

Because maquiladoras supply U.S. companies, their employment ebbs and flows with industrial production in the United States. The 1990s boom helped propel jobs to a record 1,332,147 in October 2000, right before the U.S. economy tumbled into recession. Maquiladoras resumed hiring as U.S. industrial production picked up in 2003.

Maquiladora Employment by Sector

Index, January 2003 = 100*



*Seasonally adjusted.

SOURCE: Instituto Nacional de Estadística, Geografía e Informática; seasonal adjustment by Federal Reserve Bank of Dallas.

QUOTABLE *“Even as signs point to a slowing U.S. economy, Texas remains a shining star. In 2005, Texas’ gross state product rose 4.3 percent, compared with 3.2 percent growth for the U.S.”*

—Richard Fisher, Dallas Fed President



CONSTRUCTION: Nonresidential Projects Boost Industry in Texas

Texas’ homebuilding boom is showing signs of cooling, but a surge in nonresidential projects is helping keep the construction industry buzzing. Contract values set a one-month record at \$6.6 billion in May.

The latest reading shows \$5.9 billion in August contracts, according to McGraw-Hill Construction Research and Analytics. For the first eight months of 2006, contract values totaled \$43.4 billion, up from \$38.4 billion during the same period in 2005.

The Dallas Cowboys’ new stadium—the state’s biggest construction deal so far this year—accounted for two-thirds of May’s record increase. The \$650 million stadium project in

Arlington ranks ninth nationally through August, behind a couple of luxury hotels in Las Vegas, a large office building in New York, and power plant construction in Colorado, Wisconsin and Washington state.

Much of Texas’ recent construction activity has been groundbreaking for schools, apartments, retail stores, streets and highways. Ten school districts started major projects totaling more than \$300 million in May.

Although the residential market’s growth has cooled, homebuilding continues to account for \$2.5 billion to \$3 billion in contract values each month.

—Fiona Sigalla



TRANSPORTATION: Jobs Grow in Railroads, Trucking but Not Airlines

Houston operates the nation’s largest port in terms of foreign trade tonnage. Laredo is the leading port of entry for cargo flowing into Mexico, with 40 percent of U.S. cross-border shipments. El Paso is the No. 2 entry point for exports to Mexico, making up 20 percent of the market. Dallas/Fort Worth has the nation’s third largest airport.

Texas serves as a major distribution hub, transporting passengers and freight around the world—and it means paychecks for many Texans. The current economic expansion created vigorous demand for all types of transportation, but the railroad, trucking and airline industries have fared quite differently over the past five years. Texas’ railroad employ-

ment has increased 20 percent since September 2001, while the industry’s U.S. jobs are up just 1 percent. Trucking employment grew 6 percent, twice as fast as the nation’s.

While railroads and trucking companies have been prospering, airlines have faced stiff cost cutting in a competitive environment where bankrupt carriers shedding pension and other obligations continue to operate. The airline industry’s Texas employment share is nearly twice the size of the nation’s. Airline job cuts have hit the state hard, with employment falling 23 percent since the 9/11 terrorist attacks, or by nearly 18,000 workers.

—Fiona Sigalla



BANKING: District Profits Match Nationwide Performance

Southwest banks are reporting healthy profits, on par with the nation as a whole.

Eleventh Federal Reserve District banks’ second-quarter return on assets was 1.34 percent, just below the 1.37 percent for U.S. banks based outside the district.

The similarity in overall performance masks significant differences. The Eleventh District has a larger portion of smaller banks, which generally get more of their funding from core deposits, such as checking and saving accounts and small certificates of deposit. In the Eleventh District, core deposits fund 64 percent of assets, compared with 45 percent at banks elsewhere in the United States.

Because these deposits tend to reprice rather slowly when interest rates rise, larger banks are more affected than

smaller ones by changes in the spread between long- and short-term rates.

Net interest margin is the difference between a bank’s interest income and interest expense, scaled by its interest-earning assets. A higher net interest margin increases bank profitability. Because of their reliance on core deposits, Eleventh District banks were able to earn a net interest margin of 4.4 percent, significantly above the 3.4 percent for banks outside the district.

Larger banks turn a greater share of their profit on fees, including service charges on accounts and brokerage and underwriting commissions. U.S. banks located elsewhere reported fee income of 2.4 percent of assets, while Eleventh District banks trailed at 1.4 percent.

—Ken Robinson

High Energy Prices Spur Economy Despite Growing Labor Shortages

Although energy prices have come down somewhat, they're still high enough to support strong energy sector activity in Texas. Oil prices fell to \$61 per barrel the third week of September after reaching a high of \$77 in July. Natural gas prices were down to below \$5 per million Btu, from highs above \$8 in August.

Oil and gas employment continues to grow strongly despite widespread reports of labor shortages. Through August, extraction jobs were up 5.6 percent, and support activities rose 9.6 percent.

The Texas rig count stood at 788 the third week of September, up 155 from a year earlier (*Chart 1*). The U.S. rig count is at 1,754, an increase of 303. Of these rigs, 82 percent are drilling for gas, down slightly from 86 percent a year earlier. Eighty-six rigs are drilling in the Gulf of Mexico, all for natural gas.

Weakness in natural gas prices relative to oil helps Texas petrochemical producers. They use natural gas as an input, while European producers rely on oil. Hence,

Texas producers have become more competitive. The Dallas Fed's Beige Book, an anecdotal report on Texas economic conditions, suggests this widening differential has reopened export markets for ethylene.

The energy industry has been reporting labor shortages for some time. The Beige Book notes that engineers and skilled craft workers—pipe fitters, welders and machinists—are in short supply and are the big constraint on expansion right now.

The shortages are consistent with a tightening labor market. So far this year, Texas employment has been growing twice as fast as U.S. jobs (*Chart 2*). The state's gains have been broad-based, with almost all sectors doing better than the nation.

Spending on Energy

For the nation, energy ate up about 6 percent of disposable income in the second quarter, the same as in 1974, when real oil prices were around \$35 per barrel (*Chart 3*).

High energy prices have been hitting Texans disproportionately. Beige Book con-

tacts note that soaring gasoline and air-conditioning bills have been absorbing discretionary income and are dampening consumer spending.

Texans spend more than the average American on energy. Monthly outlays on gasoline, residential natural gas and electricity are \$175 per capita in the state, compared with \$156 for the nation (*Chart 4*).

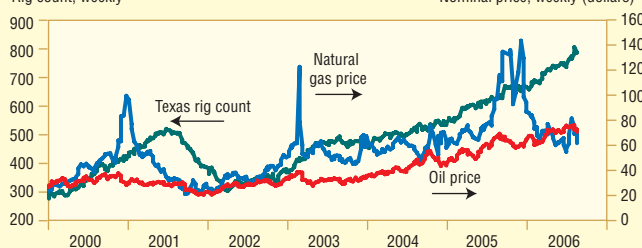
In general, Texans drive more than residents of most other states, but they usually pay less than the national average for gasoline. For a short while, however, Texas gasoline prices were higher because transport problems caused an ethanol shortage in some areas during the transition from the additive MTBE to ethanol.

Texas electricity prices are higher because state utilities use more natural gas for electricity generation than the nation, which relies more on coal. So the average Texan has a higher energy bill, especially in the summer when electricity use peaks.

—Mine Yücel

Chart 1 Industry Going Strong

Rig count, weekly

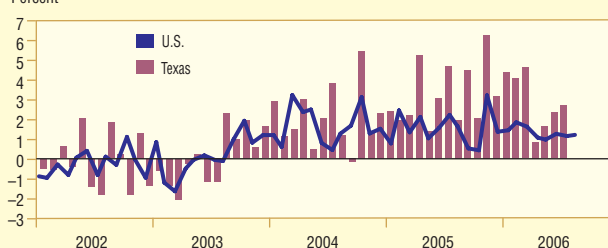


*Natural gas price is multiplied by 10.

SOURCES: Wall Street Journal; Baker Hughes.

Chart 2 Texas Beats U.S. in Employment Growth

Percent*

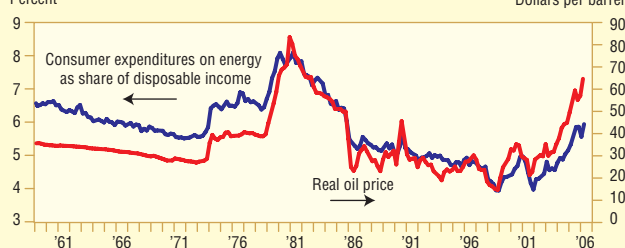


*Month-over-month, annualized rate, seasonally adjusted.

SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal adjustment by Federal Reserve Bank of Dallas.

Chart 3 Oil Prices Drive Energy Expenditures

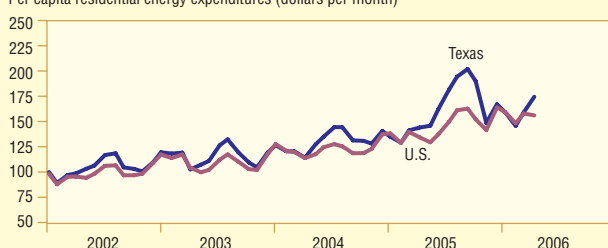
Percent



SOURCES: Department of Energy; Bureau of Economic Analysis.

Chart 4 Texans Spend More on Energy

Per capita residential energy expenditures (dollars per month)



SOURCES: Department of Energy; Census Bureau.

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