

# Southwest Economy



## Did Home Equity Restrictions Help Keep Texas Mortgages from Going Underwater?

### **PLUS**

- ▶ **Getting Prices Right: Addressing Mexico's History of Fuel Subsidies**
- ▶ **For Hispanics, Border Wage Gap Reflects Education, English Divide**
- ▶ **On the Record: Outgoing D/FW Airport Chief Cites International Growth as Key to Future**
- ▶ **Spotlight: Firms Expect Health Act to Raise Labor Costs**



▶ *Texas escaped the worst of the housing bubble's excesses, and it may provide policymakers some guidance on how the nation can avoid another such calamity.*

A period of easy mortgage financing and sub-prime lending was among the catalysts of the financial crisis of 2007–09, our nation's worst downturn since the Great Depression. Relaxed credit standards contributed to a housing-frenzy-fed bubble that ultimately burst, leaving our financial system in disarray and homeowners "underwater" on their mortgages, owing lenders more than their houses were worth. The resulting wave of foreclosures—from which we have only recently begun to emerge—contributed to a tepid economic recovery.

Texas escaped the worst of the housing bubble's excesses, and it may provide policymakers some guidance on how the nation can avoid another such calamity, economists Anil Kumar and Ed Skelton write in this issue of *Southwest Economy*.

Since becoming part of the United States in 1845, Texas has ascended from frontier state to economic powerhouse. But the legacy and laurels of our early days are imbedded in the very fabric of the state. We have remained fiercely protective of personal property and opposed to its forced seizure by creditors. Under the homestead exemption, the Texas Constitution offers hallowed protections from the forced sale of house and land. Similarly, the Texas Property Code exempts from confiscation some personal property, including "two firearms" and "two horses, mules, or donkeys and a saddle, blanket, and bridle for each."

A quarter century ago, Texans' strong ethic of personal responsibility was challenged, when loose lending and risky bets attacked our financial underpinning. From 1987 through 1991, Texas experienced 729 bank failures—including most of the state's biggest institutions—representing 38 percent of the nation's bank closures. From pain, grew wisdom: Texans took on relatively less household leverage and laid the foundation for a more resilient economy. And with lessons learned about the need for prudent oversight following our state's oil and real estate bust of the 1980s, the Texas Legislature wisely decided to constrain home equity lending to no more than 80 percent of a home's value. The limit effectively restrained the borrowing that figured in much of the collapse elsewhere. For Texas, the difficult lessons of a previous era were aptly applied.

A handwritten signature in black ink that reads "Richard W. Fisher". The signature is fluid and cursive, with a large initial 'R'.

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



# Did Home Equity Restrictions Help Keep Texas Mortgages from Going Underwater?

By Anil Kumar and Edward C. Skelton

▶ *With relatively stable house prices in Texas, the incidence of underwater mortgages was a fraction of what occurred in hard-hit states.*

**T**he bursting housing bubble heralded the onset of the Great Recession in December 2007, bringing record post-war joblessness and long-term unemployment. As house prices sharply declined, so did home equity, an important source for funding consumer spending. Many homeowners discovered their mortgages were “underwater”—they owed more than their houses were worth. A rising incidence of such negative equity helped produce soaring mortgage default rates and foreclosures.

In Texas, the story was different. The Federal Housing Finance Agency house price index fell less than 1 percent in Texas from its peak in 2007 to its trough in 2011, while it plunged 20 percent nationally (*Chart 1*). With relatively stable house prices in Texas, the incidence of underwater mortgages was a fraction of what occurred in hard-hit states such as California, Florida, Arizona and Nevada. Even among subprime borrowers—those consti-

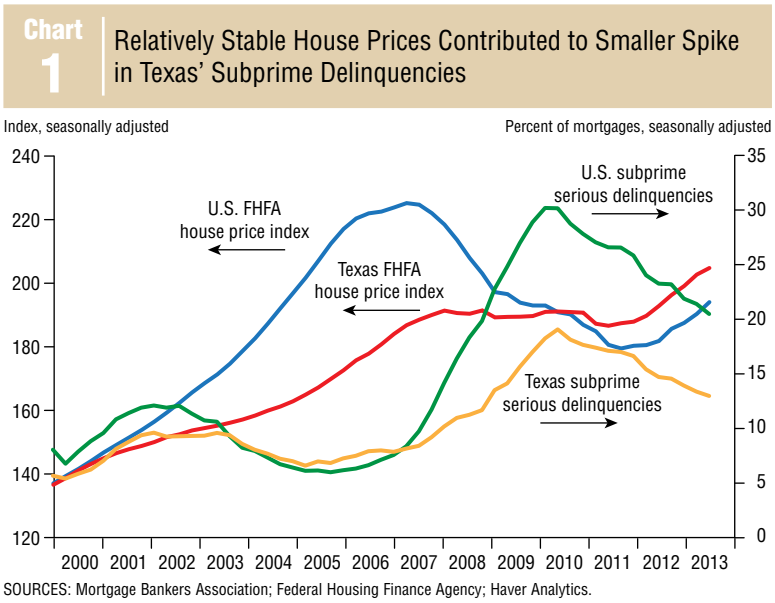
tuting the greatest credit risk—Texas default rates remained well below the national average during the recession and subsequent tepid recovery.

The Texas experience presents an important case study, in part because of a unique state law. Texas is the only state with a regulation limiting home equity borrowing. After purchase, mortgage debt along with any new borrowing—including home equity loans—cannot exceed 80 percent of a home’s market value unless the new debt funds home improvements.

Consequently, the state has lower levels of “cash-outs”—owners taking money out of their houses during a re-financing. Through the boom, the rates of mortgage debt growth and consumer spending in response to house price appreciation were more restrained in Texas. And during the downturn, the state’s cap on home equity borrowing may have also helped homeowners avoid incurring negative equity and, with it, the excessive mortgage default rates that occurred elsewhere.

There has been little research that statistically analyzes the role of the home equity regulation in keeping underwater mortgages, default rates and foreclosures in Texas below the national average. Understanding the impact of the state’s restrictions on home equity borrowing may aid policymaker efforts to protect consumers and rein in risky lending practices that led to the mortgage and financial crises.<sup>1</sup>

Two additional factors have been widely cited to explain the Texas soft landing amid the Great Recession. First, house price expectations were less exuberant in the early to mid-2000s, as Texans recalled the significant correction in the late 1980s that followed the mid-1980s oil price bust.



► *Texas homeowners were less aggressive in taking money out of their homes during the 2002–06 housing boom than others nationally.*

Second, during the recent housing boom, Texas price pressures were more contained than in many other states because of an abundance of land and less-stringent zoning requirements that made it easier to meet demand.

Overall, the state’s relatively stronger economy also played a role, with a smaller rise in the unemployment rate and a shorter downturn.

### Mortgage Debt Growth

Texas homeowners were less aggressive in taking money out of their homes during the 2002–06 housing boom than others nationally, patterns of mortgage debt and house price

growth indicate.<sup>2</sup> Chart 2 plots the growth of mortgage debt and house prices using county-level data constructed from a large consumer credit database assembled by the Federal Reserve Bank of New York.

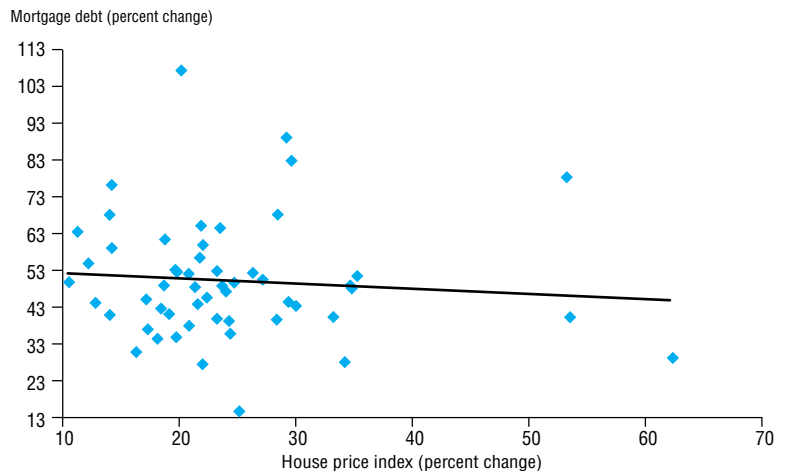
The upward-sloping line overlying the data points in Chart 2A suggests that as house prices rose nationally during the boom, homeowners increased their mortgage debt. On the other hand, the line in Chart 2B for Texas counties has a small negative slope, indicating that Texas homeowners did not increase their mortgage obligations in response to modest house price gains.

**Chart 2** House Price, Mortgage Debt Relationship Holds for U.S., Misses for Texas

#### A. Mortgage Debt Growth Responds to House Price Increases in U.S.



#### B. Little Correlation Between Mortgage Debt, House Prices in Texas



SOURCES: Authors’ calculations based on Federal Reserve Bank of New York Consumer Credit Panel/Equifax data.

## Texas' Home Equity Regulations

Under the 1876 Texas Constitution, residents could only borrow against the equity in their home for improvements (see “Texas’ Homestead Exemption Evolves Through the Years”). Aside from very limited exceptions, cash-out refinancings were prohibited. The only reliable way to get money out of a house was to sell it.

A 1997 constitutional amendment allowed closed-end home equity loans—an obligation to repay by a specified date—but the loan plus the primary mortgage could not exceed 80 percent of the value of the home.<sup>3</sup> Although such lending increased after 1997, the state’s regulations capping home equity extraction are believed to have played an important role in helping the state navigate the post-2007 mortgage crisis. Homeowners in many states, meanwhile, extracted a significant portion of their house price gains during the housing boom.

## Measuring Negative Equity

Before the 1997 amendment, Texans borrowed aggressively when acquiring a house. One way to measure the law’s impact is to see if the mortgage-loan-to-home-value ratio declined. Analyzing a sample of first liens confirms the hypothesis that it did.<sup>4</sup> First mortgages originating in Texas before 1997 had an average initial loan-to-value (LTV) ratio of 86 percent, 9 percentage points higher than in the rest of the nation. Texans, on average, are relatively more credit constrained and need a larger first mortgage to buy a house. But the average initial LTV ratio among mortgages originating after 1997 declined to 80 percent in Texas, and the gap with the nation shrank to 6 percentage points.

The decline in the proportion of mortgages with initial LTV exceeding 80 percent is even more striking since 1997, further suggesting that the reform likely induced Texans to limit their initial loan amount on first mortgages as home equity loans became available (Chart 3).

All else equal, mortgages with a smaller initial LTV ratio are significantly less likely to default. Consequently, the 1997 amendment set the stage for

## Texas’ Homestead Exemption Evolves Through the Years

Texas’ ban on home equity lending was based on the state’s broad homestead exemption, which excluded a portion of a property’s value from property taxes and protected a primary residence from forced sale or seizure as long as mortgage and tax payments were current. The exemption, however, also prevented homeowners from withdrawing equity from their homes.

**1839:** The Republic of Texas passed a prohibition on the forced sale of homesteads for all but a very limited number of reasons. This prohibition was a reaction to the Panic of 1837, when a number of people lost their farms and homes to foreclosure.

**1845:** After joining the United States, Texas enshrined the homestead exemption in the first Texas Constitution. The 1845 Texas Constitution forbade the forced sale of a homestead of up to 200 acres or a value of up to \$2,000. This prohibition continued in the 1861 and 1865 Texas Constitutions. The 1869 Constitution maintained the prohibition and raised the protected value to \$5,000.

**1876:** Initially, the Texas Constitution allowed homeowners to borrow against equity for home improvements. More broadly, a lien could be granted on the homestead to fund:

- The initial purchase or to secure the mortgage.
- Unpaid taxes.
- Home improvements.
- Owelty of partition (to convert to full property ownership from part ownership, most commonly after divorce).
- Refinancing of existing liens plus refinance costs.

The exemption applies to 10 acres for urban homesteads, 100 acres for rural households held by a single adult and 200 acres for a rural homestead occupied by a family. The homestead exemption has no dollar limit.

**1986:** The federal Tax Reform Act of 1986 made home equity loans more attractive by phasing out the tax deductibility of interest paid on other, nonmortgage consumer loans. However, Texas’ homestead exemption precluded such home equity lending.

**1997:** Texas voters passed a constitutional amendment allowing closed-end home equity loans effective Jan. 1, 1998. It stipulated that a home equity loan plus the primary mortgage be less than 80 percent of the value of the home.

**1999:** Another amendment made the guidelines for reverse mortgages consistent with those outlined in federal law. Because of inconsistencies between the U.S. and Texas, reverse mortgages weren’t made in Texas before 2000.

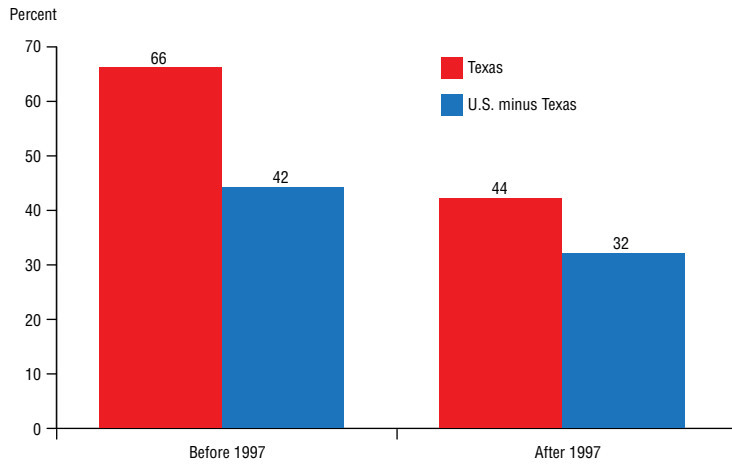
**2003:** Texas voters passed an amendment allowing open-end home equity loans, so-called home equity lines of credit.<sup>1</sup> Total debt secured by the home still cannot exceed 80 percent of a home’s value. Funds from a home equity credit line cannot exceed 50 percent of the value of the home at the time the home equity line of credit is made. Advances must be in increments of \$4,000 and cannot be made via debit card, credit card or preprinted check.

**2007:** Minor revisions in the home equity lending amendment were passed. The changes modified the procedures for obtaining and granting a home equity loan and changed the deadline for designating property as agricultural.

### Note

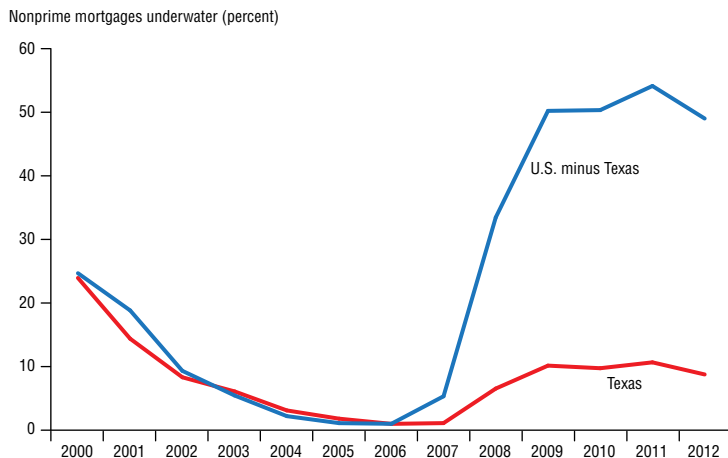
<sup>1</sup> A home equity line of credit works like a credit card. Borrowers can borrow up to a set limit determined by the lender. The loans have a variable interest rate, so payments vary according to the interest rate and amount of credit used.

**Chart 3** Share of Mortgages with Loan-to-Value Ratio Above 80 Percent Dropped in Texas



NOTE: Home purchase mortgages before and after 1997 Texas Constitution change.  
SOURCES: Authors' calculations based on data provided by LPS Applied Analytics.

**Chart 4** As the Housing Bubble Burst, Underwater Nonprime Mortgages Skyrocketed Outside of Texas



SOURCES: Authors' calculations based on data provided by CoreLogic.

long-term benefits to Texans in terms of avoiding a severe housing slump.

### Texas vis-à-vis the Nation

Underwater mortgages are a key factor contributing to default, recent research suggests. Households owing more than a house is worth may engage in “strategic default”—choosing to walk away even though they can still make their payments. Although mortgage balance information was current in the database used for Chart 3, home value data pertained only to the date of pur-

chase. To overcome this limitation, we updated initial home values using monthly house price data by ZIP code compiled by CoreLogic, a financial analytics firm.<sup>5</sup>

When U.S. house prices peaked in 2006, the incidence of underwater first mortgages was less than 1 percent of all first mortgages in Texas and the U.S. The national share of underwater first mortgages reached 12 percent in 2008 and continued climbing before peaking at 27 percent in 2011. That compared with 7 percent in Texas in 2011.

Looking just at first mortgages understates the extent of negative equity because there could be two or more mortgages secured by a house. It is possible for a home to be worth more than the first mortgage but less than all the mortgages combined. Information on all mortgages securing a house is available for nonprime borrowers—a group believed to be at the center of the mortgage crisis.

The gap in the incidence of underwater mortgages between Texas and the rest of the nation among nonprime borrowers is particularly striking (Chart 4).<sup>6</sup>

The proportion of nonprime borrowers underwater in the other 49 states reached a high of 54 percent in 2011, while in Texas it peaked at 10 percent. The depth of negative equity among underwater nonprime mortgages was also significantly lower in Texas. Mortgage debt among Texas' underwater homeowners exceeded the home value by an average 14 percent in 2008 compared with 32 percent for the rest of the country.

The state's restrictions on home equity borrowing cannot be given all the credit for the lower incidence of negative equity in Texas. The absence of a housing bubble in Texas clearly contributed but cannot possibly account for the entire difference. Nationally, borrowers extracting equity from their homes played a major role in pushing homeowners underwater; the 80 percent cap on home-equity-based borrowing in Texas mitigated that urge to pull money out.<sup>7</sup>

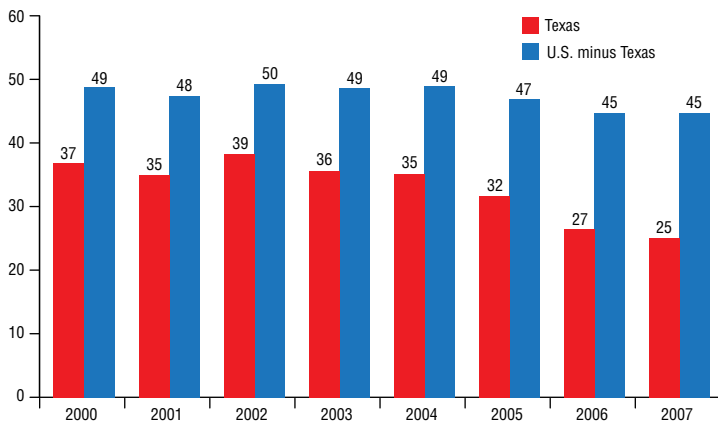
### Extracting Home Equity

At some point after purchase, home equity consists of three components: initial equity at the time of purchase plus any change in house price since mortgage origination minus any change in mortgage balance since origination. Initial equity is often positive since LTV at origination is typically less than 100 percent. House prices fell sharply after 2006 in many states, eroding much of the 2000–06 boom's home equity gains.

Detailed homeowner-level data on the amount of home equity extracted is not readily available. But a close look at the purpose for which a lender approved

## Chart 5 | Texas Subprime Borrowers Lagged the Nation in Cashing Out During Housing Boom

Subprime mortgages involving cashout refinancing (percent)



SOURCES: Authors' calculations based on data provided by CoreLogic.

a mortgage can shed some light on how much of the house price gains Texans extracted vis-à-vis the nation.

Most mortgages are either for outright purchase of a home or for refinancing into a new mortgage to take advantage of lower interest rates. Many other borrowers refinance to increase their mortgage amount and withdraw accumulated equity in their homes. About half of the subprime mortgages that originated across the nation, excluding Texas, between 2000 and 2006 involved cash-out refinancing. In Texas, this share was much smaller (*Chart 5*).

Texas has a younger population and homeowners with lower credit quality, who typically borrow more aggressively against their home equity. Alone, these factors would imply a higher incidence of cash-out refinancing. The below-average share of such activity among Texas' subprime mortgages lends credibility to the explanation that the 80 percent home equity borrowing cap likely contributed to the lower incidence of negative equity.

### Likely Mortgage Default Impacts

It is difficult to precisely assess the impact of home equity restrictions on Texas' relatively lower mortgage default rates. The state restriction was in place well before the onset of the housing and mortgage crisis. Additionally, since the

regulation covered all Texans, there is no unaffected group to contrast with those impacted. Comparisons with the rest of the nation cannot fully disentangle the role of the home equity borrowing restrictions because states differ in many other ways.

Nevertheless, at the peak of the housing crisis, the share of subprime mortgages underwater in Texas was 40 percentage points below the rest of the nation, with serious delinquencies among subprime borrowers about 10 percentage points lower. Much of this difference remains even after accounting for such factors as the state's relatively lower unemployment rate, differences in credit scores, smaller house price declines and differences in other demographic and economic factors such as age, sex, race, education and household income.

Rules governing home equity borrowing are not uniform across the U.S., and Texas' rules are significantly more stringent. The data suggest that the tighter regulations in Texas helped keep underwater mortgages and default rates from rising by as much as they did elsewhere. By extension, lower default rates and fewer underwater homeowners might also have helped Texas avoid the subsequent sharp drop in home prices other states experienced.

To be sure, these benefits did not come without attendant costs. Just as the

restrictions helped Texas navigate the housing downturn, the same restrictions could have constrained consumer spending growth during the boom by preventing homeowners from fully tapping their housing wealth. At the same time, this may have helped limit swings in consumer spending. Moreover, the inability to access housing wealth may have driven some credit-constrained Texans to more-expensive credit card debt, unsecured consumer debt or even payday loans. Any estimate of net benefit of Texas' home equity regulations must also account for such costs.

*Kumar is a senior research economist and advisor in the Research Department and Skelton is a business economist in the Financial Industry Studies Department at the Federal Reserve Bank of Dallas.*

### NOTES

<sup>1</sup> Internationally, loan-to-value limits seem to lead to more stable housing markets. See "Cycle-Resistant Credit Systems: Learning from Hong Kong's Experience," by Ying Guan, Jeffery W. Gunther and Sophia Tsai, Federal Reserve Bank of Dallas *Economic Letter*, vol. 5, no. 6, 2010.

<sup>2</sup> For the nation, a recent paper found that every 10 percent increase in home equity caused household borrowing to increase by 5 percent. See "House Prices, Home Equity-Based Borrowing and the U.S. Household Leverage Crisis," by Atif Mian and Amir Sufi, *American Economic Review*, vol. 101, no. 5, 2011, pp. 2132–56.

<sup>3</sup> Closed-end home equity loans usually have a term of between five and 15 years, with a fixed interest rate and the same payments each month.

<sup>4</sup> To confirm the hypothesis, we analyzed a 5 percent random sample of first-lien mortgages from a large database provided by LPS Applied Analytics. The database covers about two-thirds of all installment-type loans in the U.S.

<sup>5</sup> For methodology used, see "Below the Line: Estimates of Negative Equity Among Nonprime Mortgage Borrowers," by Andrew Haughwout and Ebiere Okah, Federal Reserve Bank of New York *Economic Policy Review*, vol. 15, no. 1, 2009, pp. 31–43.

<sup>6</sup> The analysis is performed using a 5 percent sample of a private-label securities database available from CoreLogic. The data mainly consist of approved loans given to nonprime borrowers based on insufficient documentation (subprime) or alternative documentation (alt-A). Unlike the data used for Chart 2, this database does have information on combined LTV on the first mortgage as well as all subordinate liens on the home securing the first mortgage.

<sup>7</sup> See "Recovering from the Housing and Financial Crisis," by John V. Duca and David Luttrell, Federal Reserve Bank of Dallas *Economic Letter*, vol. 5, no. 7, 2010.

*A Conversation with Jeff Fegan*

## Outgoing D/FW Airport Chief Cites International Growth as Key to Future

*Jeff Fegan, chief executive officer of Dallas/Fort Worth International Airport, is retiring after 19 years of leading what has become the world's fourth-busiest airport. He reflects on the facility's evolution and its impact as a driver of regional economic activity.*

### **Q. How much have D/FW Airport's operations grown during your tenure and how has the airport's stature changed in the past two decades?**

At the time of my appointment as CEO for D/FW, it had flights to 24 international destinations and 113 domestic markets and was listed among the busiest airports in the world. Today, D/FW has service to 201 total destinations; 53 of those are international cities and the other 148 are domestic. More importantly, D/FW continues to serve the economic interests of the Dallas-Fort Worth region by attracting new air service, giving our community direct access to five continents and connectivity to the entire world.

D/FW has now become one of the most highly regarded airports in the world for customer service, having been ranked among the top 10 large airports worldwide for seven straight years in surveys by Airports Council International. That organization constantly asks hundreds of thousands of international passengers about their airport experiences.

### **Q. What makes D/FW different from other large U.S. airports? What role does the vision of the airport's early backers have in its continuing operations?**

D/FW Airport differs through its governance; it is owned by the cities of Dallas and Fort Worth and operated by a board of directors that includes the mayors of the two owner cities. That

governance and the board's support of our management team make it possible for D/FW to seek continuous improvement and a culture of excellence and to look for ways to set itself apart from other airports. That kind of culture of excellence shows itself in many ways, such as when you see D/FW leading the airport industry on initiatives like sustainability, airfield safety, fire training, research and customer satisfaction.

The airport's founders had a vision that it needed a lot of land. They were very wise to gather 18,000 acres of farmland and put it to use as an airport—that land continues to pay dividends to this day. D/FW uses it not only as a buffer zone for noise, but also for appropriate commercial development—leases and warehouses, for example—that we are doing in cooperation with our city neighbors. As D/FW develops its land, those projects add revenue, making the airport more cost competitive for airlines to operate here.

### **Q. In the early 1980s, D/FW was a hub to three airlines; now it's just American Airlines. How did that happen, and what are the trade-offs of single-carrier dominance?**

When Braniff Airways collapsed in 1982, the hub-and-spoke-system we know today [in which an airline feeds its passengers into a hub for connecting service] was really in its infancy. It was an outgrowth of airline deregulation from the late 1970s, as was Braniff's collapse. American Airlines really developed the

hub system to its full potential using D/FW as its largest hub and home base, to the point that Delta eventually shrank its hub at D/FW in 2005.

American holds about 85 percent of the market share at D/FW. However, that does not mean that airlines don't have competition at D/FW because our airport has low-cost carriers serving about 40 markets and competitive flights to most major cities. We've added a record amount of new airline service in recent years, including international carriers such as Qantas and Emirates, and we've seen a lot more low-cost service, with carriers such as Virgin America, JetBlue and Spirit Airlines starting service. With single-carrier dominance, as you put it, the D/FW market also enjoys a lot more air service than other population centers of its size because it is American's largest hub.

### **Q. How will D/FW's competitive position change with the end of Wright Amendment limitations on flights at nearby Dallas Love Field in 2014?**

We don't anticipate we will see a lot of changes at D/FW based on the end of these restrictions. The airlines already serving D/FW today will continue to do so. You might see some additions of new cities from Love Field, but those cities are already served by airlines out of D/FW, so the competition will simply increase.

We are working very hard on improving our facilities, primarily through the Terminal Renewal and Improvement Program. We will renovate D/FW's four original terminals with new infrastructure, new parking, new concessions, new technology and new amenities for passengers, to be completed in 2017. The terminals date back to the opening of the airport, in 1974, and a lot has changed since then, so we are adapting to the new needs of the modern traveler.

### **Q. How has the revenue stream from more than 100 natural gas wells on airport property changed how D/FW does business? Do they provide a buffer against the cyclical nature of air travel?**





The revenue stream from the natural gas wells has not changed anything about D/FW business operations. From the start, the natural gas revenues were earmarked for capital accounts, and so the money [\$15 million in royalties in 2011, about \$8 million in 2012 and an anticipated \$4 million this year] is saved and invested in new projects or new construction, and not day-to-day operations. The gas revenue doesn't provide any buffer against ups and downs in the air travel market because the revenue is set aside.

**Q. What flights are D/FW's biggest revenue generators? How have the sources of airport income changed during your tenure?**

Our most popular destinations continue to be Cancun, Las Vegas, London, Orlando and some of the major population and business centers such as New York, Chicago, Los Angeles and Washington, D.C. Regarding airport income, one of the major changes that we have engineered at D/FW over the years is the model of how our revenue is generated. At one point, we earned 65 percent of revenue from airline sources, such as landing fees and rents. Over the past 15 years, we've managed to reverse that so that D/FW earns 65 percent of its revenue from our own sources such as concessions, parking, rental cars or commercial development. That was a significant achievement because by diversifying and increasing nonairline revenue sources, D/FW has remained a very cost-competitive airport for airlines to do business.

▶ *"D/FW continues to serve the economic interests of the region by attracting new air service, giving our community direct access to five continents and connectivity to the entire world."*

**Q. How well has D/FW competed against other airports for international routes? Why was Chicago O'Hare able to get Beijing and India flights that D/FW sought?**

D/FW has competed very well for new international routes. There's not another airport in America that has added 15 new international routes and seven new passenger carriers in the past 30 months. We've done very well in adding service to regions of the world that we were most interested in, such as Dubai and Australia. We're still keenly interested in new service to China or other Asian destinations, and we hope to see something materialize there soon. All this additional service means we've seen our international passenger traffic grow by 11 percent this year, and we are seeing new flights to emerging economies, such as the new, expanded service from American Airlines into South America, specifically Brazil and Peru, with new service to Bogota, Colombia, later this year.

D/FW is really helped in the pursuit of new air service primarily by the strength of our home travel market, connectivity through our hub and the airport's cost-competitive structure. As to why D/FW was not able to get service to Beijing or India as Chicago O'Hare did, one of those decisions was driven by a labor [union] issue and the other by the strength of the market in relation to how it could serve the destination. We do have a growing market in the Dallas-Fort Worth area—the fastest-growing metropolitan area in the U.S.—and that fact will also help D/FW gain more air access to more air markets in the future.

**Q. How has the air freight business changed and what does D/FW offer freight customers that the newer Fort Worth Alliance Airport doesn't?**

The international air freight business is really a key driver for us in terms of revenue, and we think it can improve with more efforts to integrate our services with the needs of cargo carriers and freight forwarders. The international air freight industry is currently in a bit of a downturn, but we've managed to keep pace with the world trends, so we think cargo will continue to be a strong slice of our market. The biggest change we are seeing is the effort to adopt new technologies to make shipping more efficient.

D/FW and Alliance Airport are both great, providing outstanding locations and services to their customers. I think what sets D/FW apart is the ability to interact with a more diverse portfolio of freight forwarders and shippers here, a lot more capacity for flights and faster access to more major highways.

**Q. How do you assess the future of D/FW? What changes are planned in the near term and the long term?**

I think the future is very bright for D/FW. Our team is really working hard to update our original terminals. For the long term, major projects such as Dallas Area Rapid Transit rail service from Dallas are underway, and we hope to have the Fort Worth Tex Rail project on the planning cycle sometime soon. We've already begun adding new gates to Terminal B and have plans in the works if other new gate needs arise. We've never wanted to be an impediment to economic growth for the D/FW area, and by having capacity for airlines to grow, D/FW can continue to drive the local economy forward.

# Getting Prices Right: Addressing Mexico's History of Fuel Subsidies

By Michael D. Plante and Amy Jordan

▶ *In recent years, Mexico's retail gasoline and diesel prices lagged behind skyrocketing crude oil prices, creating a de facto government subsidy.*

**T**he government of Mexico, the world's eighth-largest oil producer in 2011, and its oil and gas sector are practically inseparable. Petróleos Mexicanos, or Pemex, is the Mexican state-owned monopoly responsible for producing and refining crude oil in the country. It also imports and distributes petroleum products, such as gasoline and diesel.

Mexican President Enrique Peña Nieto has sought a range of reforms through the Pact for Mexico initiative, the product of a broad-based coalition of the nation's main political parties. Substantial energy sector changes are a significant part of the ongoing overhaul. Although the way fuel prices are determined is not explicitly discussed in the pact, it is one aspect of Mexican energy policy that could face reform. In Mexico, as in many other developing countries, the government sets fuel prices, which can then behave very differently from those in a country such as the U.S.,

where prices are determined in a free market (*Chart 1*).

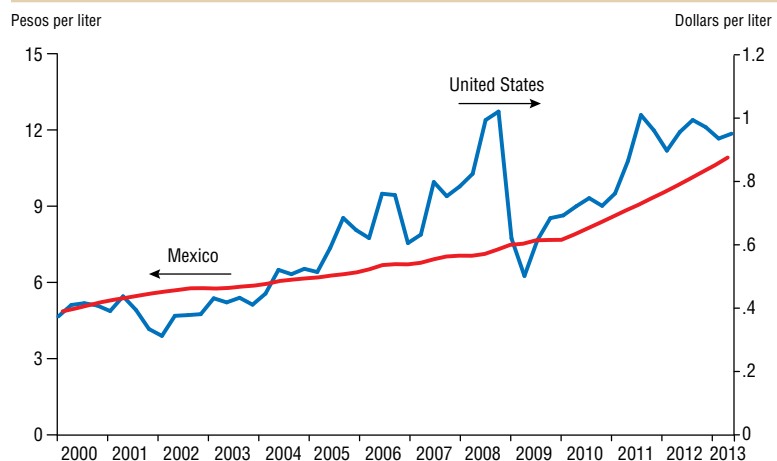
In recent years, Mexico's retail gasoline and diesel prices lagged behind skyrocketing crude oil prices, creating a de facto government subsidy.<sup>1</sup> This support seeks to protect vulnerable groups in society, such as the poor, from high fuel prices or to provide them with extra income. However, in Mexico, as in many other countries, the subsidies have mainly benefited higher-income groups. These subsidies, among the largest in the world, have cost billions of dollars in recent years.

While ongoing government increases have brought domestic prices closer to true economic cost, experience shows that subsidies often reappear if the government controls prices. Mexico's spate of major reforms presents a unique opportunity to reexamine how domestic fuel prices are set in the country.

Several options could produce a more economically efficient out-

Chart  
1

Mexico's Gasoline Prices Reflect Price Controls



SOURCES: Bureau of Labor Statistics; Bloomberg; authors' calculations.

**Chart 2** Mexico Tax on Gasoline, Diesel Indicates Emerging Subsidy



NOTE: Zero tax rate means retail cost equals cost of producing the fuel; negative tax rate implies consumer subsidy.  
 SOURCES: Organization for Economic Cooperation and Development; authors' calculations.

come—for example, automatic adjustment of fuel prices based on strict application of a formula that keeps retail prices in line with the true cost, or a more radical reform that liberalizes the production, distribution and sale of petroleum products (a measure that has been recently proposed).

**Fuel Price Systems**

Retail fuel prices are set in a free market in the U.S. and in many other countries. Prices change frequently in response to market conditions, and in extreme situations they can rise or fall dramatically in a short period. Under this system, retail prices generally reflect the cost of the fuel being sold.

Not every country follows this approach. Some use a formula, calculated periodically and taking into account factors such as cost of production, to determine retail fuel prices.

In still other countries, the government sets retail fuel prices in an ad hoc manner. Prices change infrequently and unpredictably and can remain fixed for long periods. For example, in Indonesia diesel prices have been fixed at 4,500 rupiah per liter since 2008—a period over which the currency depreciated 9 percent against the dollar.

When fuel prices are not set in a free market, retail prices may not reflect the underlying costs of the

fuel for an extended period. When production costs exceed retail costs, consumers benefit while some other entity sustains a loss—typically the government or a government-run oil company.

**Pricing in Mexico**

The Mexican government sets retail gasoline and diesel prices monthly. A formula provides an estimate of Pemex's production, distribution and retailing costs, but the government can choose a different price if it so desires. Retail prices can be set above cost

(consumers essentially pay a tax on the fuel) or below cost (consumers receive a subsidy).

Surging crude oil prices in recent years have increased production costs for gasoline and diesel. Mexican retail prices, however, haven't kept pace. The result: Gasoline and diesel, which were consistently taxed before 2006, have been largely subsidized since then (Chart 2). The gasoline subsidies have averaged 1.2 pesos per liter per year since 2006 (about 40 U.S. cents per gallon); 1.8 pesos for diesel (59 cents per gallon).

**Misplaced Help**

Officials often implement fuel subsidies to protect vulnerable groups of society from high fuel prices or to provide extra income to those groups at a low cost. However, the research on fuel subsidies shows that they are usually ill-targeted—that is, the poor do not typically receive a large portion of the benefits. Higher income groups can afford greater fuel consumption while poor households often lack the income to even purchase the goods that use the fuel—such as a car.

Mexico is confronted with this problem, data show. The bottom 20 percent of the income distribution purchased only 3 percent of the gasoline and diesel in 2010, the last year for which such figures are available (Table 1). Because

**Table 1** Mexico's Distribution of Spending on Gasoline and Diesel by Income Decile in 2010

Decile	Total (percent)
1	1.2
2	1.8
3	2.4
4	3.6
5	4.7
6	6.6
7	8.6
8	12.5
9	19.1
10	39.4

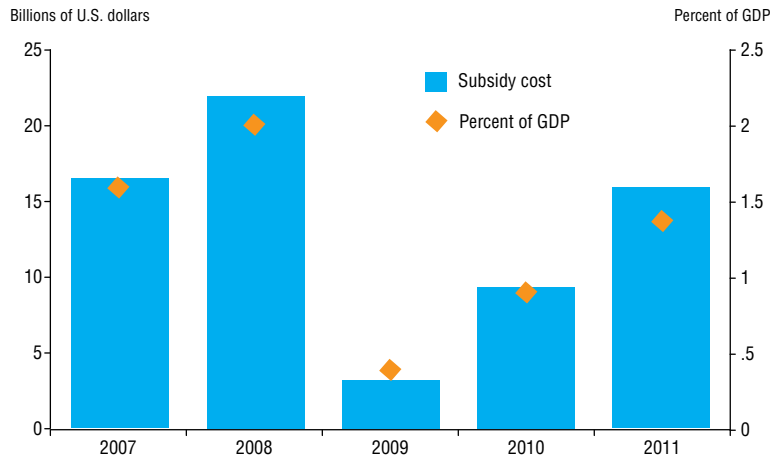
NOTE: Deciles are increasing in income, where decile 1 represents the lowest 10 percent of the income distribution and decile 10 represents the highest 10 percent of the income distribution.

SOURCE: Mexican Secretariat of Finance and Public Credit.

► If the goal of the subsidies is to protect the lowest income brackets, the cost to do so is heavy.

### Chart 3

#### Mexico's Spending on Oil Subsidies Rises Again



NOTE: The IEA includes subsidies on gasoline, diesel and other oil products, such as LPG (propane).  
 SOURCES: International Energy Agency; International Monetary Fund; authors' calculations.

the subsidy is applied per unit of fuel, the data show that 97 percent of the assistance went to the top 80 percent of income earners in Mexico.

This is in line with other countries. The International Energy Agency (IEA) estimated that out of the \$409 billion spent globally in 2010 on all subsidies covering consumption of fossil fuels (oil, natural gas and coal as well as the electricity they produced), only \$35 billion, or 8 percent, reached the bottom 20 percent of the income distribution.

If the goal of the subsidies is to protect the lowest income brackets, the cost to do so is heavy. Of the \$15.9 billion Mexico spent on subsidies in 2011, roughly \$15.4 billion went to higher income groups—in other words, it cost \$15.4 billion to provide about \$500 million in aid to Mexico's poorest.

#### Costly Subsidies

Mexico's subsidies have been expensive on an absolute dollar basis (*Chart 3, left axis*).<sup>2</sup> While Mexico's fuel subsidies in recent years were below the peak levels in 2008 (when subsidies exceeded \$20 billion), they still exceeded \$15 billion in 2011. Preliminary Mexican government data suggest that the 2012 total will be close to the cost in 2011.

Sometimes it's useful to consider the size of a subsidy relative to gross domestic product (GDP). This method

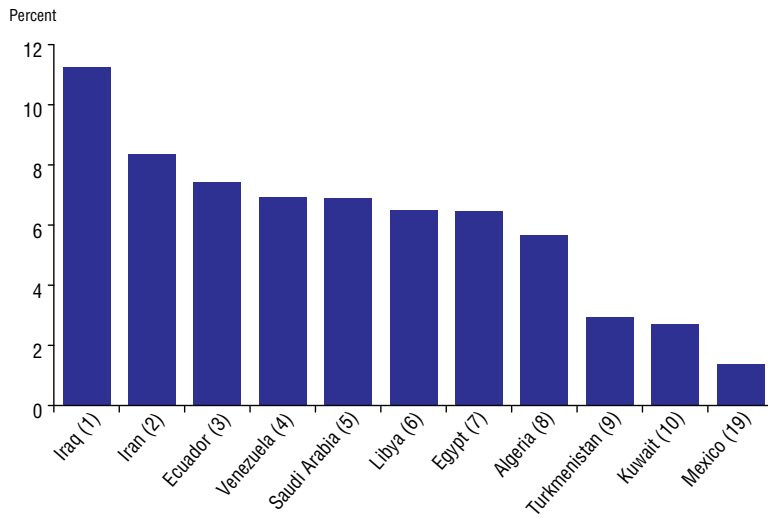
helps illustrate how big a burden the subsidy might impose on the economy, taking into account the country's ability to pay. As a share of GDP, Mexican fuel subsidies were at least 1 percent of GDP in four of the last five years for which data are available (*Chart 3, right axis*). By comparison, expenditures on education amounted to 3.5 percent of GDP in 2010; health spending, 2.8 percent; and pensions, 1.2 percent.

Relative to other countries, Mexico typically ranks high in terms of the subsidies' dollar value. Mexico ranked seventh in such spending in 2011, according to IEA data. Only Saudi Arabia (\$46.12 billion), Iran (\$41.39 billion), India (\$30.86 billion), Venezuela (\$21.97 billion), Iraq (\$20.35 billion) and China (\$18.45 billion) spent more. However, on the basis of subsidies as a percentage of GDP, Mexico ranked relatively low—19th out of 33 countries in 2011 (*Chart 4*).

#### Other Negative Impacts

Subsidies work by artificially reducing prices for fuel, making it relatively cheaper than other goods. Households and firms respond, changing their economic decisions. This introduces distortions in the economy that can hinder performance. For example, households may choose to consume an outsized amount of fuel and to consume less of other goods because of pricing,

**Chart 4** Subsidies Spending as a Percentage of GDP in 2011: Top 10 Countries and Mexico



SOURCES: International Energy Agency; International Monetary Fund; authors' calculations.

► For Mexico, the best way to prevent subsidies from reoccurring would be liberalization of fuel production and product distribution.

negatively impacting non-energy sectors of the economy.<sup>3</sup>

Fuel subsidies can also negatively affect the environment. Burning gasoline and diesel produces air pollution. To the extent that fuel subsidies lead to over-consumption, air pollution increases. This can impose a cost on the population in general because many forms of air pollution negatively affect public health.

### Protecting the Poor

The International Monetary Fund has worked with a number of countries to reform fuel pricing and currently recommends removing subsidies and replacing them with measures that specifically aid the poor. Transfers of cash targeted at lower-income households—rather than applying the subsidies to the entire population—is one preferred method. Mexico, in fact, could implement such a reform through its already-established antipoverty program *Oportunidades*. It has operated since 1997 and is specifically geared to provide aid to Mexico's poorest.<sup>4</sup>

There is also an important theoretical justification for using targeted transfers instead of fuel subsidies. Unlike fuel subsidies, transfers do not artificially reduce fuel prices. Instead of being induced to purchase more fuel,

households are free to use the extra income to purchase what they most desire. They may buy more fuel, but they might also spend the extra income on something they value more, such as food or clothing. By not affecting the price of fuel, transfers may avoid other negative implications of fuel subsidies, including environmental problems.

### Recent Events

The Mexican government has had an explicit policy of increasing retail prices by small monthly increments since 2010, aiming to eventually remove subsidies. Contrary to what has occurred in many other fuel-subsidizing countries, no major political upheaval has accompanied the price increases, which as of 2013 brought prices to near global parity.

Although the subsidies are fading, price rises don't guarantee the subsidies' permanent elimination. In other countries where governments control fuel prices, energy subsidies have often reappeared over time, often after an event caused sharply higher world fuel prices. Governments generally hesitate to pass on such rapidly rising costs.

For Mexico, the best way to prevent subsidies from reoccurring would be liberalization of fuel production and product distribution. As long as the market is

reasonably competitive, retail prices in Mexico would reflect the true economic costs of producing and distributing fuel. A second-best option would be implementation of a more mechanical fuel-pricing formula that automatically adjusts monthly. This would smooth short-term, retail-price fluctuations while ensuring that they reflect the fuel's underlying cost over the medium term.

*Plante is a research economist and Jordan is a research analyst in the Research Department of the Federal Reserve Bank of Dallas.*

### Notes

<sup>1</sup> Although not the focus of this article, the Mexican government also subsidizes the purchase of LPG (propane).

<sup>2</sup> Comprehensive estimates on the costs of fuel subsidies, in dollars, are available from the IEA from 2007 to 2011 for more than 30 countries. More information on how these estimates are calculated can be found on the IEAs website, [www.worldenergyoutlook.org/resources/energysubsidies/methodology/](http://www.worldenergyoutlook.org/resources/energysubsidies/methodology/).

<sup>3</sup> For a more detailed analysis on how fuel subsidies can distort an economy, see "The Long-Run Macroeconomic Impacts of Fuel Subsidies," by Michael D. Plante, Federal Reserve Bank of Dallas Working Paper no. 1303, March 2013.

<sup>4</sup> For more information on *Oportunidades*, see "As Mexico's Social Safety Net Grows, Issues Arise," by Melissa LoPalo and Pia Orrenius, Federal Reserve Bank of Dallas *Southwest Economy*, Second Quarter, 2013.



**WATER: Lawmakers Seek Funds to Expand Supplies, Ease Growing Demand**

**T**exas’ increasing thirst for water can’t continue. Demand is projected to rise 5.4 percent by 2020 while supply contracts 3.3 percent, according to the Texas Water Development Board, the agency responsible for water planning and data collection.

State lawmakers will ask voters in November to fund \$2 billion in water conservation and infrastructure improvements that backers say would increase supplies 50 percent by 2060.

Farmers use the most water in the state, about 56 percent, while urban areas account for 27 percent of consumption.

Texas water comes from two sources. Surface water in lakes and rivers supplies 62 percent of municipal water, and groundwater drawn from underground aquifers supports 80 percent of farm use.

The state owns surface water, holding it in trust for the public. Residents and water authorities apply for the right to use the water. Rights holders then sell the surface water to the public, pricing it to reflect purification and transportation costs, but not its scarcity.

The state does not assign rights to groundwater, which largely depends on rain for replenishment. Aquifer water becomes private property once landowners draw it from the ground and hold it.

—Edward Rodrigue



**IMMIGRATION: Border Apprehensions in Rio Grande Valley Surge**

**F**or the first time in almost 50 years, the Rio Grande Valley sector is the most active section of the 2,000-mile U.S.-Mexico border for migrant apprehensions. While arrests along the entire border were down 78 percent in 2012 from a peak in 2000, apprehensions in the border’s easternmost section rose 55 percent in the October 2012–June 1 period, compared with a year earlier. The Border Patrol arrested 282,414 crossers over the length of the Mexican border in the recent period, 94,305 of them in the Rio Grande Valley sector, which extends 120 miles and includes McAllen and Brownsville, Texas.

Border Patrol statistics suggest the South Texas crossers are not the same migrants who came in through the Arizona desert, previously the most active section of the border. Migrants from countries other than Mexico have traditionally favored the lower Rio Grande Valley; Reynosa, across the border from McAllen, is the endpoint of a railroad that Central American migrants ride from southern Mexico. Apprehensions of migrants from countries other than Mexico accounted for half of all Rio Grande Valley sector apprehensions in fiscal 2012, approaching levels last seen in 2006.

A lack of economic opportunities in Central America, along with increasing drug violence and instability, has prompted young workers to migrate, even as some of those factors have ebbed in Mexico.

—Melissa LoPalo



**TRADE: Along Texas Gulf, Exports Pick Up as Oil Imports Decline**

**O**il imports, including crude oil and refined products such as gasoline and diesel, totaled 52 million barrels at the Houston–Galveston Customs District in June 2013, the latest U.S. International Trade Commission data show. The amount has declined by 20.4 million barrels, or 28 percent, since the beginning of 2012, and was off 8.4 million barrels from January 2013, a 14 percent decrease. Oil imports accounted for more than half the total value of all district imports in June 2013. The customs district is made up of the ports of Corpus Christi, Freeport, Galveston, Houston, Port Lavaca and Texas City.

By themselves, crude oil imports to the district totaled 44.3 million barrels in June 2013, down 10 percent from the beginning of the year and 29 percent from January 2012. The decrease in oil imports comes amid rising domestic crude production, particularly in Texas and North Dakota.

Increased domestic crude production has led to sharply higher exports of petroleum products. Product exports from the district reached 32.2 million barrels in June 2013—up 10 percent since June 2012. U.S. exports of petroleum products have consistently exceeded imports since June 2011. Total U.S. exports reached 82.6 million barrels in May 2013—a 14 percent increase from January 2012, according to U.S. Energy Information Administration data.

—Amy Jordan

# Firms Expect Health Act to Raise Labor Costs

By Amy Jordan and Pia Orrenius

Federal and state regulations govern many aspects of health insurance, which 159 million U.S. residents obtain through an employer. The Affordable Care Act (ACA), signed into law in 2010, imposed conditions that include a requirement that companies employing 50 or more full-time-equivalent workers provide affordable, broad-based insurance.<sup>1</sup>

The act stipulates that coverage be of “minimum value”—paying at least 60 percent of medical costs—and affordable—with a premium representing no more than 9.5 percent of a worker’s annual earnings. It also imposes fines on companies of 50 or more workers that fail to offer coverage for full-time employees starting in January 2015 and on individuals who go without health insurance.<sup>2</sup>

For small companies—those with fewer than 50 full-time-equivalent employees—the law provides incentives to offer coverage, including a tax credit and access to a small-business health insurance exchange.<sup>3</sup>

Some employers and legislators are concerned that the ACA’s provisions will drive up labor costs, which could damp hiring and economic

growth. Others worry that the law may distort the labor market, providing incentives to convert full-time workers to part-time or trim payrolls to below the 50-employee threshold. However, the impact on hiring could be muted if employers shift compensation from wages to health benefits, leaving total compensation unchanged. To discern the sentiments of area firms, the Federal Reserve Bank of Dallas asked respondents to its Texas Business Outlook Surveys (TBOS) a series of special questions about the act.

More than 400 Texas businesses in manufacturing (Texas Manufacturing Outlook Survey), services (Texas Service Sector Outlook Survey) and retail (Texas Retail Outlook Survey) participate in the monthly TBOS surveys, and 262 responded to questions regarding how health care reform will affect their labor costs, wages and benefits, and staffing decisions.<sup>4</sup> The great majority of respondents—77 percent—said they expect labor costs to increase. By sector, the results were 81 percent in manufacturing, 75 percent in services and 77 percent in retail.

To counteract new cost pressures, more than half (54 percent) indicated they would adjust compensation struc-

tures. Of those anticipating adjusting compensation, 28 percent said they will likely pass on some or all additional health care costs to employees, while 12 percent said they will likely reduce employee wages or other benefits to offset the costs (*see chart for results by sector*).

The Dallas Fed also asked companies to report on planned staffing changes. A majority (64 percent) said they expect no change or are uncertain. However, 28 percent anticipate reducing the number of full-time employees, with 18 percent planning to increase part-time, contract or temporary workers.<sup>5</sup>

Implementation of the ACA employer mandate may not significantly affect large companies that already offer workers health insurance.

Initially, some employers may experience increased labor costs as more workers sign up for coverage. This surge could temporarily hurt profits and hiring. However, according to the TBOS survey, the increased cost may cause firms to shift compensation from wages to health care, which is what happened in Massachusetts following implementation of a similar law there.

## Notes

<sup>1</sup> The ACA defines full-time workers as those working at least 30 hours per week. Under the law, combinations of part-time employees count toward the threshold; for example, two half-time employees (15 hours per week) are equivalent to one full-time employee.

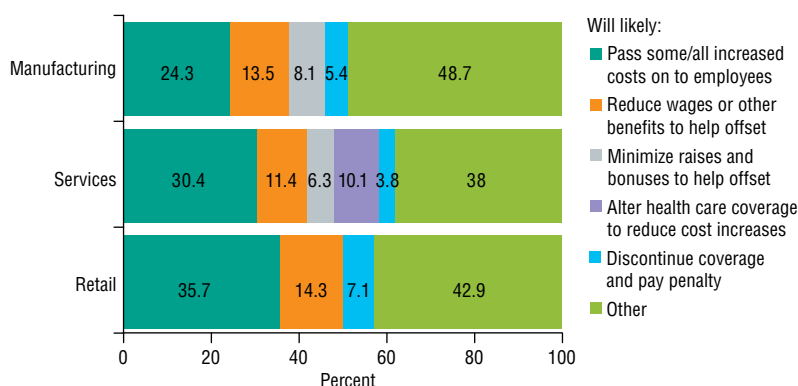
<sup>2</sup> The government announced July 2 that it would implement the employer mandate in January 2015, one year later than originally planned. Plans are still on track for uninsured individuals to sign up for coverage through individual insurance exchanges starting Oct. 1, 2013, for coverage beginning Jan. 1, 2014. Fines for individuals who decline coverage will begin in 2014 and become payable in 2015.

<sup>3</sup> Under the ACA individual mandate, everyone must have medical insurance, obtained through their own or their spouse’s employer, the government (Medicaid and Medicare) or health insurance exchanges.

<sup>4</sup> See current and historical releases of TBOS as well as the results of the April 2013 special questions at [www.dallasfed.org/research/surveys/index.cfm](http://www.dallasfed.org/research/surveys/index.cfm).

<sup>5</sup> Respondents were asked to select all options that apply, so percentages sum to more than 100 percent.

Employers Likely to Alter Compensation Structures Under Act



SOURCE: Texas Business Outlook Surveys, Federal Reserve Bank of Dallas.

# For Hispanics, Border Wage Gap Reflects Education, English Divide

By Christina English

▶ *While the earnings differences based on educational attainment may not be surprising, border wage gaps by ethnicity are remarkably large.*

**T**he Texas side of the U.S.–Mexico border is one of the nation’s poorest regions, with 30 percent of the people living in poverty, nearly double the national average. In this area, where 86 percent of the population is Hispanic, a wide gap separates the earnings of Hispanics and non-Hispanics.

Low educational attainment is the primary reason Hispanics on the border earn less, but low English fluency also matters. Adjusting for differences in English ability and education all but eliminates the border wage gap between Hispanics and non-Hispanics. This implies that lower overall skills are driving the Hispanic wage deficit along the border and that earnings can be increased by improving both English proficiency and education, particularly the high school completion rate.

## Low Education, Lower Earnings

Hispanic residents along the border are far less educated than their non-Hispanic counterparts and Texans overall. In the border region, about one-third of Hispanics did not complete high school, compared with 7 percent of non-Hispanics, according to the Census Bureau’s American Community Survey (*Chart 1*).<sup>1</sup>

The low number of Hispanics along the border pursuing higher education produces further differences. While more Hispanics than non-Hispanics have only a high school credential (25.8 percent versus 22.3 percent), far fewer have a college degree (15 percent versus 37.9 percent).

Education is highly correlated with wages. College graduates along the border make the most, with average annual earnings of \$71,000 among non-Hispanics and \$50,300 among Hispanics (*Table 1*). Among those with

less than a high school education, annual wages total \$23,300 for non-Hispanics and \$16,700 for Hispanics. In each group, those not completing high school earn only about one-third of college graduates’ wages.

## Drivers of Hispanic Earnings

While the earnings differences based on educational attainment may not be surprising, border wage gaps by ethnicity are remarkably large. The higher wages of non-Hispanics suggest that well-paying jobs exist in border cities, so what is behind the relatively low earnings for Hispanics?

One possible explanation is that 30 percent of Hispanics along the border were born outside the United States, usually in Mexico. Some may be in the country illegally, which likely depresses their wages. Further, college-educated immigrants may have trouble getting their foreign degrees recognized and valued by U.S. employers.

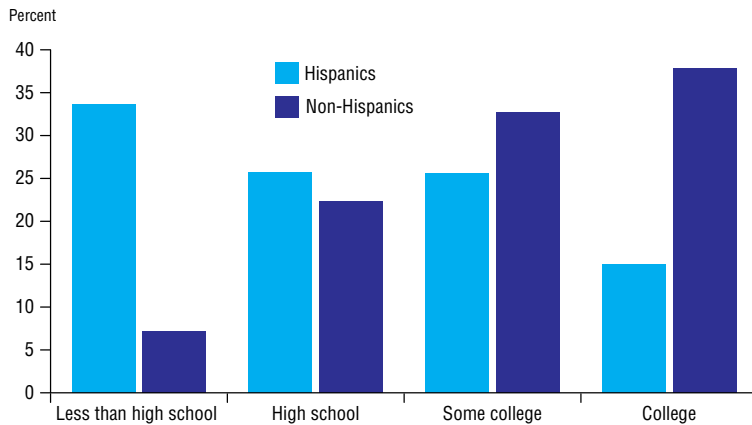
Previous research has suggested Mexican migrants in Texas border cities accept lower wages to be closer to family in Mexico.<sup>2</sup> So while 70 percent of Hispanic residents along the border are U.S. born, they may also have family or relatives in Mexico.

English fluency is another factor potentially limiting Hispanic earnings that hasn’t been fully explored. The American Community Survey queries respondents on English proficiency on a scale of 1 to 5, where 1 is “speaks no English” and 5 is “speaks only English.”

Hispanic border residents rated themselves a 3.2 on average, far lower than the 4.7 reported by non-Hispanic border residents. Even college-educated Hispanic border residents rate their English comparatively low, at 3.8, nearly a full point lower than similarly educated non-Hispanics (4.7). Hispanics along



**Chart 1** On Border, Hispanics Trail Non-Hispanics in Education



NOTE: Data include both native and foreign-born Texas border residents, age 25–64.  
 SOURCES: American Community Survey 2009–11; author’s calculations.

▶ Research has shown limited English proficiency puts certain jobs out of reach, with the least fluent working in relatively low-paying jobs requiring fewer skills.

**Table 1** Hispanics Along Border Earn Less at Each Education Level

	Hispanics	Non-Hispanics
Less than high school	\$16,700	\$23,300
High school	\$24,600	\$34,900
Some college	\$31,500	\$44,800
College	\$50,300	\$71,000

NOTES: Average yearly wages of people age 25–64 on Texas border who worked full time. Wages are inflation adjusted (expressed in 2011 dollars) and rounded to the nearest 100.  
 SOURCES: American Community Survey 2009–11; author’s calculations.

the border also rate their English skills slightly lower than Hispanics in the rest of Texas rank theirs (3.5). The difference in English skills is consistent across all education levels and persists even for native-born Hispanics along the border, who rate their skills at 3.7 versus 4.0 in the rest of Texas.

Research has shown limited English proficiency puts certain jobs out of reach, with the least fluent working in relatively low-paying jobs requiring fewer skills.<sup>3</sup>

Poor language skills also may be a reason some Hispanics stay in the Spanish-friendly border area rather than go farther into Texas, where lesser English skills would be a greater day-to-day problem.

### Wage Gap Causes

The wage gap between Hispanics and non-Hispanics illustrates just how much lower Hispanic earnings are across Texas.<sup>4</sup> Table 2, row 1 shows Hispanic

wages along the border and statewide without accounting for worker characteristics that influence earnings power and may narrow differences.<sup>5</sup> At first glance, Hispanic border residents earn about half the wages of non-Hispanics along the border; in the rest of Texas, Hispanics take in 40 percent less than non-Hispanics.

Age and gender do not explain much of the difference in Hispanic earnings. Adjusting for these demographic characteristics leaves the wage gap with non-Hispanics largely unchanged (Table 2, row 2).

Controlling for years of education (Table 2, row 3) drastically reduces the wage gap along the border from 49 percent to 19 percent. This means over half of the observed difference in earnings is due to the lower educational attainment of Hispanic border workers. In the rest of Texas, educational attainment has an even larger

► By raising their educational attainment to non-Hispanic levels, full-time Hispanic workers would increase average earnings by \$9,600 a year, a 34 percent jump to \$37,800.

**Table 2** Lower Education Accounts for Over Half of Hispanic Wage Gap

	Remaining wage gap with local non-Hispanics (percent)	
	Border residents	Non-border residents
Unadjusted	-51	-40
Adjusted for:		
Demographic differences	-49	-42
Add: educational attainment	-19	-6
Add: English skills	-5	-4

NOTE: Average yearly wages of people age 25–64 on Texas border who worked full time.  
 SOURCES: American Community Survey 2009–11; author’s calculations.

impact, shrinking the wage gap to 6 percent from 42 percent.

Adding controls for English ability (Table 2, row 4) further shrinks the wage gap for Hispanic border workers from 19 percent to 5 percent, suggesting a lack of English proficiency plays a large part in limiting earnings. But in the rest of Texas, differences in English ability reduce the wage gap only 2 percentage points because average English skills are higher than along the border.

While educational attainment is the primary driver of the wage gap in both locations, English ability is also an important factor along the border. Since controlling for English fluency and education level nearly eliminates the wage difference, Hispanics who work full-time have lower average earnings because the skill gap is so large.

### Potential for Higher Earnings

The impact of more education on the earnings of Hispanic workers along the border can be extrapolated, based on the statistical analysis underlying the results in Table 2. By raising their educational attainment to non-Hispanic levels—holding all other characteristics the same (sex, age, experience, etc.)—full-time Hispanic workers would increase average earnings by \$9,600 a year, a 34 percent jump to \$37,800 from the current \$28,300.<sup>6</sup>

Much of the education difference reflects Hispanics’ lower college graduation rates. The typical Hispanic worker with a full-time job and some college,

but no degree, would increase annual earnings by \$12,700 by completing college—a 38 percent rise to \$46,000 from \$33,300 (see “Hispanic Women on Border Gain the Most from College Degree,” page 19).

Finishing high school also pays dividends. A full-time Hispanic worker on the border with a high school credential (diploma or General Educational Development certificate) could achieve a 72 percent earnings bump, to \$28,700 from \$16,700. This large percentage increase reflects the low earnings power of individuals with less than a high school education (who average just seven years of schooling). Improved English fluency would also raise income, although gains would not be quite as large.

This is a statistical exercise, and the scenarios are hypothetical. The full extent of projected gains won’t likely be attained; even if all Hispanics reached the education levels of non-Hispanics, some jobs would be out of reach without adequate English skills or legal status—something not captured by the data. Also, the statistical review assumes that, except for education, everyone is similar. However, education levels typically reflect other, unobserved factors that influence income, such as ability, family wealth and access to credit.

The hypothetical education increases are therefore likely to overestimate the true impact on earnings. Still, the broader impact on the wage gap is instructive. It is largely the product of education and English fluency, through which a solution also lies.

## Benefits of More Education

Hispanics along the Texas–Mexico border experience poverty rates that are more than double those of non-Hispanics. The income inequality partly results from a cycle of low English skills limiting educational attainment. When passed on to children, this can lead to reduced high school graduation rates among even U.S.-born Hispanics.<sup>7</sup>

Improving English fluency and educational attainment could help narrow the wage gap between Hispanics and non-Hispanics. Boosting Hispanic workers' self-reported English proficiency roughly 20 percent (to 4) and increasing high school attainment (to 12 years from 11.6) would increase annual average earnings 20 percent, or \$5,600.

This suggests policymakers should focus limited resources on improving English-language proficiency and raising the high school completion rate. Children can be targeted through the school system and adults via continuing-education classes.

*English is a research analyst in the Research Department of the Federal Reserve Bank of Dallas.*

## Notes

This article is based on research for "Immigration and Education: Setbacks and Opportunities for Earnings Along the Texas–Mexico Border," by Christina Daly, *Journal of Borderlands Studies*, vol. 27, no. 3, pp. 287–98.

<sup>1</sup> The data are from the U.S. Census Bureau's 2009–11 American Community Survey. The survey yields data on areas with populations exceeding 20,000. The data are organized by Public Use Microdata Area and are deemed to be border if they contain a county that borders Mexico. Mentions of the border refer to the Texas–Mexico border.

<sup>2</sup> See "Mexican Migrants Stay in Border Comfort Zone," by Pia Orrenius and Madeline Zavodny, Federal Reserve Bank of Dallas *Southwest Economy*, May/June 2008, pp. 10–13.

<sup>3</sup> See "English Skills, Earnings and the Occupational Sorting of Mexican Americans Along the U.S.–Mexico Border," by Alberto Dávila and Marie T. Mora, *International Migration Review*, vol. 34, no. 1, 2000, pp. 133–57.

<sup>4</sup> See "Texas' Latino Pay Gaps: Taking a Closer Look," by Emily Kerr, Pia Orrenius and Madeline Zavodny, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2010.

<sup>5</sup> The log of real yearly earnings among full-time border

workers age 25–64 is used as the dependent variable in least squares regressions on the Hispanic dummy variable (row 1), adding demographic information (row 2), education attainment (row 3) and English skills (row 4). The wage gap is the coefficient of the Hispanic dummy variable.

<sup>6</sup> To calculate the hypothetical wage, the mean of each variable is plugged into the regression equation used to generate Table 2, column 1, row 4. The education means of Hispanics are then replaced with average education for non-Hispanics. The benchmark earnings are simply the unconditional average earnings in the American Community Survey data for the relevant Hispanic population (all full-time Hispanic workers, age 25–64; those with some college; and those with less than a high school education).

<sup>7</sup> See "A Conversation with Richard Fry: Why Hispanic Education Deficits Persist," Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2010, pp. 8–9.

► This suggests policymakers should focus limited resources on improving English-language proficiency and raising the high school completion rate.

## Hispanic Women on Border Gain the Most from College Degree

Individuals completing college in the U.S. enjoy a "college premium"—a large increase in earnings over what high school graduates earn.

The premium is particularly significant for Hispanics along the Texas border. Estimates suggest that those who work full-time earn 90 percent more than if they had not received a college degree. The result matches non-Hispanics' experience in the rest of the state.<sup>1</sup> Meanwhile, Hispanic college graduates not on the border earn only 77 percent more than high school graduates, suggesting Hispanics along the border can gain relatively more by obtaining a college education.<sup>2</sup>

Hispanic women along the border have the highest college premium in Texas, earning 105 percent more than if they had not obtained a degree. One possible explanation is the overall scarcity of highly educated workers in the region, which is likely even more pronounced among bilingual Hispanic women.

For example, bilingual teachers along the border are paid more for their ability to communicate with Spanish-speaking students and English-speaking administrators.<sup>3</sup> Farther inland, the shortage of bilingual teachers may not be as large and, therefore, the premium is lower.

## Notes

<sup>1</sup> The college premium is the coefficient on the dummy variable for completing college, compared to the omitted category of high school graduate in least squares regressions with the log of real yearly earnings among full-time border workers age 25–64 as the dependent variable with controls for experience and gender.

<sup>2</sup> Other studies have also found higher returns to education along the border where highly educated workers are more scarce. See "The Border: Is It Really a Low-Wage Area?" by Lori L. Taylor, Federal Reserve Bank of Dallas *Border Economy*, June 2001, pp. 6–8.

<sup>3</sup> See "Districts Seek Bilingual Education Teachers in Mexico," by Cynthia Garza, *Houston Chronicle*, Feb. 21, 2007, [www.chron.com/news/houston-texas/article/Districts-seek-bilingual-ed-teachers-in-Mexico-1828254.php](http://www.chron.com/news/houston-texas/article/Districts-seek-bilingual-ed-teachers-in-Mexico-1828254.php).

## SNAPSHOT

### Republic of Texas Dollar Slumped when Public Doubted Its Worth

The saying “cash is king” is based on the assumption that as the most liquid form of exchange, money in hand is superior to, say, the debt obligations of private companies. The independent Republic of Texas tested that proposition during its existence, from 1836 to 1845.

The period coincided with a severe depression in the U.S. that lasted from 1837 to 1845 and influenced events in the republic, whose constitution gave lawmakers “the power to coin money,” provided it was gold or silver. Metal coins of any type were scarce in the U.S. and more so in Texas, which never issued them.

In January 1839, during the administration of Mirabeau B. Lamar, a new type of promissory note called the “red back” was authorized. As James Michener observes in his 1,000-plus-page historical narrative *Texas*, a fictional work grounded in fact, the currency didn’t garner wide acceptance during its three years of circulation:

“But always the limiting factor was this strangling lack of currency, and when the distressed nation, swamped with debt, tried to salvage itself by printing two million dollars’

worth of ‘red-back bills’ supported by no collateral except the government’s word and faith, citizens evaluated the situation realistically,” Michener writes.

“On the first day it was issued, a dollar bill was worth fifty cents, a few days later thirty cents, then ten cents and four cents, until it bottomed out at an appalling two cents.”

By February 1842, not even the republic’s government had any faith in its currency. The Texas dollar was no longer acceptable for payment of taxes. In its place, obligations issued by state banks were legal tender, along with “shinplasters,” company-issued notes in denominations of less than a dollar that first appeared in fall 1837. The Texas Congress had previously moved to restrict such currency to ensure the primacy of its own money.

—Adapted from the *Journal of Political Economy* (April 2013) and *Handbook of Texas*



## DALLAS FED



### Southwest Economy

is published quarterly by the Federal Reserve Bank of Dallas. The views expressed are those of the authors and should not be attributed to the Federal Reserve Bank of Dallas or the Federal Reserve System.

Articles may be reprinted on the condition that the source is credited and a copy is provided to the Research Department of the Federal Reserve Bank of Dallas.

*Southwest Economy* is available free of charge by writing the Public Affairs Department, Federal Reserve Bank of Dallas, P.O. Box 655906, Dallas, TX 75265-5906; by fax at 214-922-5268; or by telephone at 214-922-5254. This publication is available on the Dallas Fed website, [www.dallasfed.org](http://www.dallasfed.org).

**Harvey Rosenblum**, Executive Vice President and Director of Research

**Mine Yücel**, Director of Research Publications

**Pia Orrenius**, Executive Editor

**Michael Weiss**, Editor

**Jennifer Afflerbach**, Associate Editor

**Kathy Thacker**, Associate Editor

**Samantha Coplen**, Graphic Designer

**Ellah Piña**, Graphic Designer

FEDERAL RESERVE BANK OF DALLAS  
2200 N. PEARL ST., DALLAS, TX 75201