

# Southwest Economy



 **Robust Regional Banking Sector  
Faces New Economic Hurdles**

***PLUS***

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▶ *Shipments to Mexico and Canada make up half of all Texas exports, and a majority are intra-industry trade, which leverages each nation's competitive advantage through collaborative production.*

**A**fter serving as a growth engine for the national economy for several years, Texas is struggling with the impact of lower oil prices, a stronger dollar and, more recently, adverse weather. Federal Reserve Bank of Dallas regional economists have been working overtime to assess and understand the impact of these factors on Texas' future prospects. Particularly noteworthy has been weakening export trade; Texas is the nation's top exporting state.

The strong performance of the Texas economy over the past five years would not have been possible without our neighbors and top trading partners, Mexico and Canada. Shipments to Mexico and Canada make up half of all Texas exports, and a majority are intra-industry trade, which leverages each nation's competitive advantage through collaborative production. The magnitude of intra-industry trade with our North American Free Trade Agreement (NAFTA) partners helps insulate prices of our traded goods from fluctuations in the value of the dollar, at least in the short run.

The Dallas Fed has long noted the economic benefits of free trade, and our research chronicles its positive effects. While NAFTA clearly led to a surge in Texas exports and continues to support economic growth in the region, trade-related issues abound.

In this issue of *Southwest Economy*, we look at some of the implications of the U.S. government's Country of Origin Labeling on meat products. Although such labeling may be informative for consumers, the World Trade Organization, acting on a complaint from Canada, ruled last month that it unfairly restrains trade and discriminates against meat imports.

Other articles in this issue consider the impact of China's economic slowdown on Texas trade, the outlook for the region's banks and early measures of Texas employment growth.

Texas has encountered an unwelcome pause in what has been an extraordinary period of economic growth. While we at the Dallas Fed track the impacts of weak oil prices and the strong dollar, we remain mindful of sources of lasting economic vitality—foremost among these is the free movement of goods and services with our trading partners.

*Helen E. Holcomb  
Interim President, First Vice President  
and Chief Operating Officer  
Federal Reserve Bank of Dallas*



# Robust Regional Banking Sector Faces New Economic Hurdles

By Kelly Klemme and Edward C. Skelton

**ABSTRACT:** Profitability held steady at Eleventh District banks in 2014 as they continued outperforming their counterparts nationwide. However, rising interest rates and lower oil prices have emerged as potential tests for the region's institutions.

**C**ommunity banks enjoyed a good 2014, particularly in the Federal Reserve's Eleventh District, continuing the steady improvement seen over the past five years.<sup>1</sup> Profitability was stable, loan growth was strong and balance sheets grew more resilient.

During the financial crisis and its aftermath, from 2007 to 2013, almost 500 U.S. banks failed and about one in eight nationwide was considered a "problem bank" by the Federal Deposit Insurance Corp. (FDIC), based on a measure of financial well-being that includes capital adequacy, asset quality and liquidity.<sup>2</sup> A return toward precrisis levels for bank failures and problem banks provides an indicator of improved system health (*Chart 1*).

Although institutions overall appear well-positioned, challenges loom. They include rising interest rates and, particularly for Texas banks, the effects of the oil price decline.

## Outperforming U.S. Banks

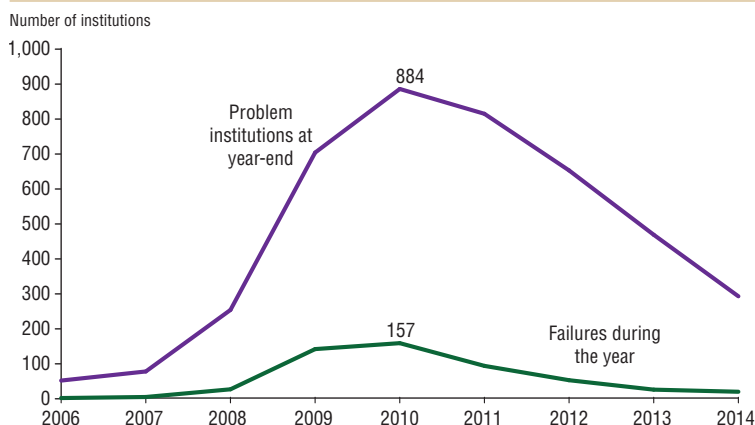
Nationally, banks' net income as a percent of average assets shrank

slightly in 2014, the first drop in five years (*Chart 2*). The largest institutions drove the profitability decline, reflecting diminished revenue from mortgage sales, securitizations and servicing as well as an increase in litigation expense. The latter includes fines for manipulating benchmark interest rates such as the Euro Interbank Offered Rate (EURIBOR) and the London Interbank Offered Rate (LIBOR) and faulty loan sales, particularly involving mortgages, leading up to the financial crisis.

The six largest U.S. banks paid approximately \$115 billion in fines between 2009 and September 2014, with U.S. regulators assessing 98 percent of all fines, according to the Boston Consulting Group.<sup>3</sup> About half of the penalties were assessed in the first nine months of 2014.

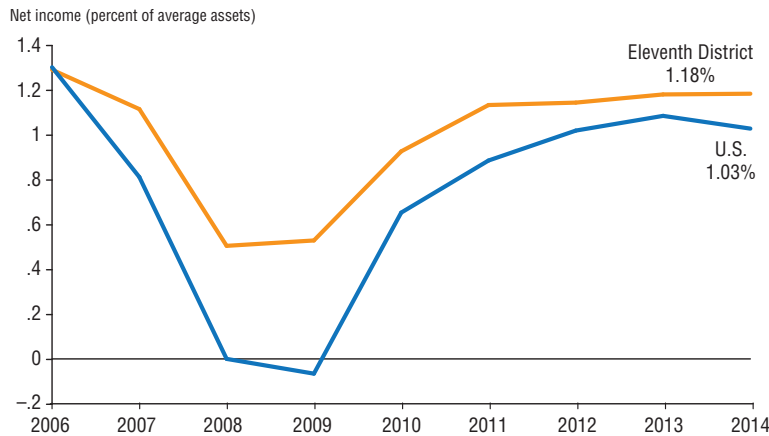
Although the struggles of large banks dominated headlines, the vast majority of banks and savings and loans reported increased earnings. Profitability held steady in 2014 at Eleventh District banks as they continued outperforming their counterparts nationwide.<sup>4</sup>

**Chart 1** Problem Institutions and Failures Near Precrisis Lows



SOURCE: Federal Deposit Insurance Corp.

**Chart 2** District Banks Continue to Outperform U.S. Banks



SOURCE: Quarterly Reports of Condition and Income, Federal Financial Institutions Examination Council.

Increased profitability over the five-year period beginning in 2009 reflected declining set-asides for expected losses in loan portfolios, known as provision expense (*Chart 3*).

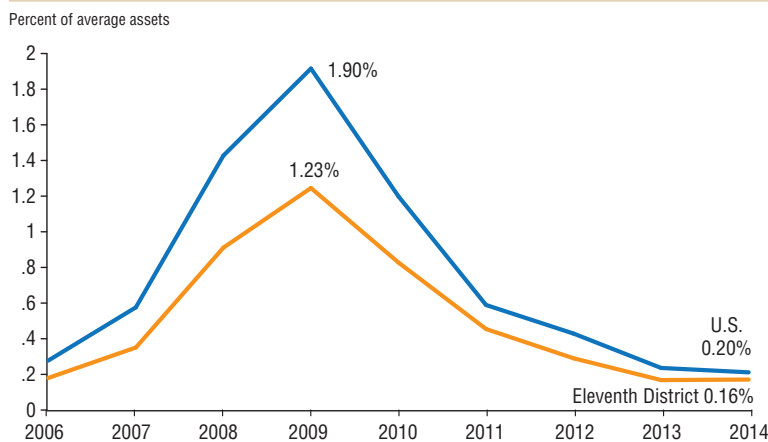
Nationally, provision expense peaked in 2009 at \$248 billion (1.9 percent of average assets), falling to \$29 billion (0.2 percent of average assets) in 2014. Thus, the decline in provision expense alone contributed 170 basis points (1.7 percentage points) to banks' improved return on assets over the period.

Similarly, provision expense in the district fell from \$5 billion, or 1.23

percent of average assets, in 2009 to \$703 million, or 0.16 percent of average assets, last year. The decline was driven by improved asset quality; banks' balance sheets have strengthened as problem loans and impaired assets continue falling.

Not only have district banks achieved greater profitability than their counterparts nationwide, but their loan portfolios also have grown twice as fast (*Chart 4*). District banks returned to lending sooner than banks in the rest of the country and experienced more rapid loan growth due to the region's economic strength.

**Chart 3** Provision Expense Declines Contribute to Profitability



SOURCE: Quarterly Reports of Condition and Income, Federal Financial Institutions Examination Council.

While nationwide loan growth has accelerated the past few years, it remains more subdued, mostly because U.S. economic and labor market conditions have not been as robust as those locally. Overall, community banks were responsible for more than a quarter of industry loan growth in 2014 despite accounting for less than 18 percent of all bank assets.

### Rising Interest Rate Risk

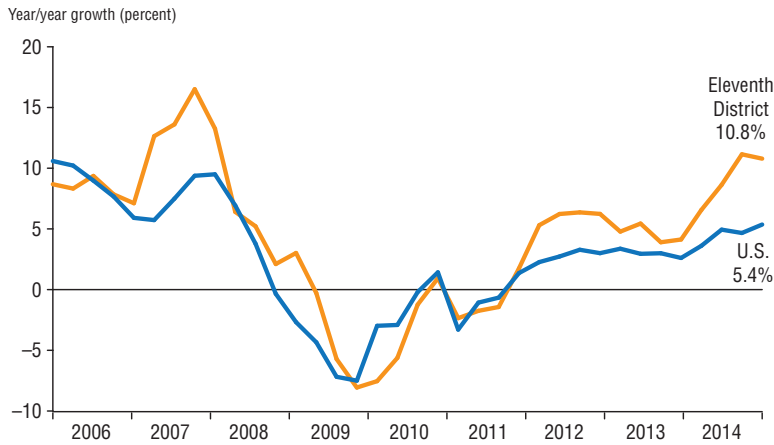
The Federal Open Market Committee's federal funds rate (the policy rate) has been near the zero lower bound since December 2008, leading to a five-year period of very low interest rates. Falling or very low rates may encourage banks to reach for yield, tempting them to acquire more long-term assets—which carry a higher nominal or stated rate of return—to boost profits.<sup>5</sup>

Possibly reflecting banks' quest for yield in a low-interest-rate environment, the so-called three-year asset/liability gap has been growing, particularly for district banks (*Chart 5*). This measure subtracts liabilities with maturities greater than three years (certificates of deposit, for example) from loans and securities with maturities greater than three years and divides the difference by total assets. A bigger gap means that banks would be hurt by rising interest rates because their assets are tied up for a longer time relative to their liabilities. Consequently, when interest rates rise, banks' funding costs could rise while interest income remains stagnant, squeezing profitability.

Conversely, a shrinking gap, such as that experienced from 2004 through 2006, suggests that banks were responding to the then-rising interest rate environment by trying to hold more long-term liabilities, increasing their exposure were interest rates to fall.

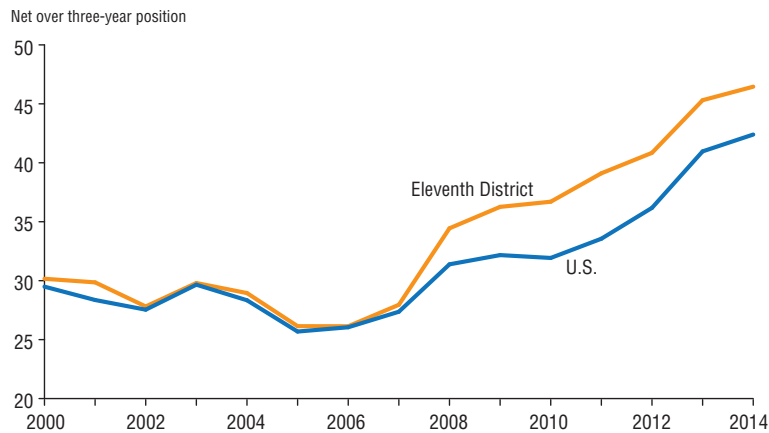
Still, the analysis is a static exercise, essentially taking a picture of the current balance-sheet structure and doesn't include the adjustments banks would make were interest rates to rise. Also, the gap doesn't reflect hedges (either on or off balance sheet) held by banks. While community banks generally don't use hedges, the banks that

**Chart 4** | Loan Growth Is Picking Up



SOURCE: Quarterly Reports of Condition and Income, Federal Financial Institutions Examination Council.

**Chart 5** | Banks May Have More Exposure to Rising Interest Rates



NOTE: The "net over three-year position" is equal to loans and securities repricing in more than three years, less liabilities repricing in more than three years, as a percent of assets.

SOURCE: Uniform Bank Performance Report, Federal Financial Institutions Examination Council.

▶ While the state's economy has become more diverse and thus less reliant on the oil and gas industry, the oil price drop has still negatively affected the Texas economy and labor market.

do find them to be an effective tool for managing interest rate risk.

**Low Energy Prices**

The other big concern is potential fallout from recent dramatic oil and gas price declines, which affects Texas banks in particular. In July 2014, the West Texas Intermediate (WTI) spot price exceeded \$105 a barrel; by March, it had tumbled to below \$50 before bouncing back to near \$60 at the start of May. The size and rapidity of the decline raised concerns about the impact on the Texas economy and Texas

banks, especially given the experiences of the energy and financial collapses of the 1980s.<sup>6</sup>

While the state's economy has become more diverse and thus less reliant on the oil and gas industry, the price drop has still negatively affected the Texas economy and labor market.<sup>7</sup> Some pockets of the state remain heavily dependent on the energy sector, making local industries vulnerable to spillover effects. And because of community banks' close ties to the areas they serve, they are more exposed than large banks.

## Lessons from the Past

While the Texas economy has diversified, it can be helpful to look at the effect of past oil price slides on area banks to estimate the potential fallout from the recent drop. Specifically, the WTI spot price can be plotted alongside the number of failed and distressed banks in the state (*Charts 6 and 7*).

One measure of potential distress is the so-called Texas ratio, the book value of an institution's nonperforming assets as a percent of its tangible equity capital and its loan-loss reserves.<sup>8</sup> Essentially, the Texas ratio compares an institution's bad assets to its available capital. A Texas ratio above 1 (expressed as 100 percent) indicates that probable and potential losses exceed an institution's immediate loss-absorbing cushion, putting it at greater risk of bankruptcy. There have been two instances of dramatic oil price declines since 1980; one gives rise to concern and the other to hope.

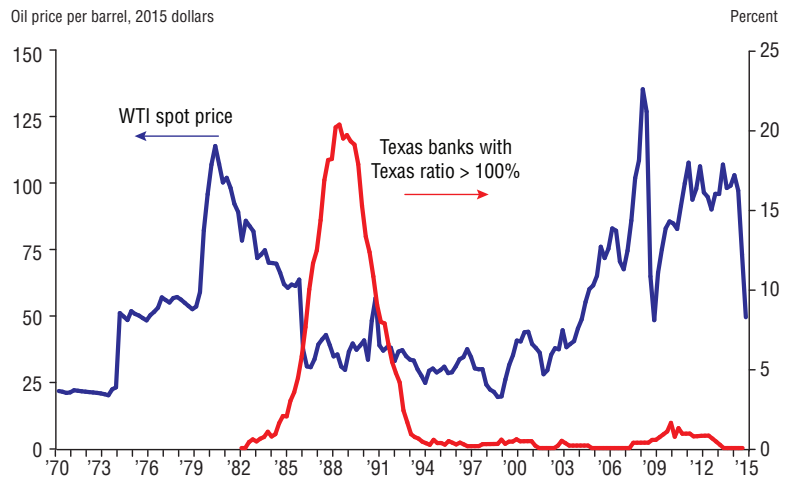
Between June 1980 and September 1986, the WTI price declined 74 percent in real (inflation-adjusted) terms. Roughly 20 percent of all Texas institutions had a Texas ratio greater than 100 percent by year-end 1988. A staggering 706 Texas banks and thrifts failed—including nine of the 10 largest banking institutions—between September 1986 and year-end 1990.<sup>9</sup>

A more recent oil price decline, in the second half of 2008 and early 2009, was also dramatic, but in a different way. Over a nine-month period beginning in June 2008, the price fell more than 71 percent. Yet less than 1 percent of Texas banks had a Texas ratio exceeding 100 percent and only seven failed in 2008–09. The slight pickup in bank troubles in 2010 is likely attributable to generally difficult financial and economic conditions that year.

From June 2014 through March 2015, the price of WTI fell 58 percent. Nevertheless, not one Texas bank had a Texas ratio greater than 100 percent as of the first quarter and only one bank had failed as of March.

The bottom line: The persistence of low oil prices seems to matter more

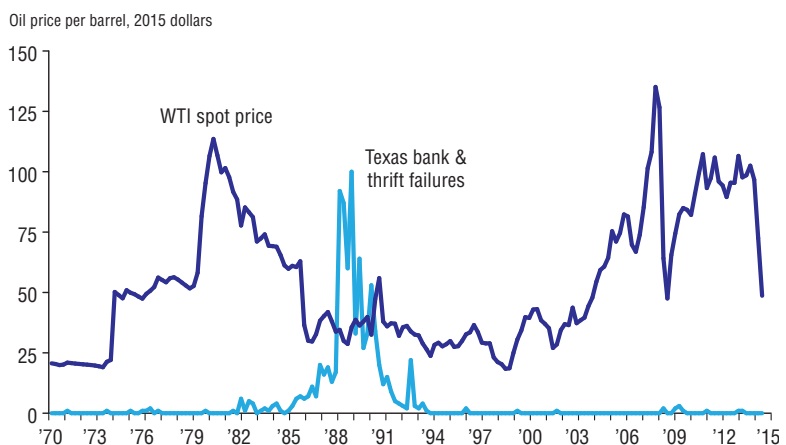
**Chart 6** Latest Oil Price Plunge Hasn't Caused Texas Bank Distress



NOTE: The Texas ratio is equal to loans past due 90 days or more, nonaccrual loans and other real estate owned as a percent of tangible capital plus loan loss reserves.

SOURCES: Energy Information Administration, CME Group; Quarterly Reports of Condition and Income, Federal Financial Institutions Examination Council.

**Chart 7** Texas Bank Failures Follow Oil Price Decline in the 1980s



SOURCES: Energy Information Administration, CME Group; Federal Deposit Insurance Corp.

for banks than the magnitude of falling prices. A precipitous, but short-lived, decline is likely to have only a minor impact on the banking industry. Even a longer-term decline similar to that seen in the 1980s is unlikely to provoke the same scope of disruption now as it did then.

In the 1980s, the Texas economy was more tied to energy and was also experiencing a mortgage and commercial real estate lending boom.<sup>10</sup> As oil prices fell and the state went into

recession, the economy suffered from an oversupply of housing and other buildings constructed in anticipation of strong growth. Banks were hit not only by the inability of underemployed borrowers to make loan payments, but also by a decline in the value of lender collateral in the real estate and energy sectors. The excess real estate inventory in much of Texas continued into the early 1990s.

The regulatory environment has also improved in recent years. Capital



and loan loss standards are stricter, and there are new rules limiting banks' ability to use short-term deposits to fund long-term lending.

## Reducing Immediate Risk

Mitigating factors also make Texas banks better able to weather falling oil prices. Memories of the 1980s crisis linger, and the 2008–09 financial crisis is also fresh in the minds of bankers and regulators. Apart from regulatory changes, Texas bankers manage their risks more prudently, using better risk diversification. The Shared National Credit (SNC) program is one example. Generally, large loans are held by multiple institutions through the SNC program, allowing individual institutions to spread the risk of large credit exposures.<sup>11</sup>

While the SNC program has been around since 1977, it has grown in importance and coverage. SNC industry trends by sector show that commodities credits, including those tied to the oil and gas industry, increased from \$395 billion in 2002 to \$798 billion in 2014. Regulatory filings and investor conference calls suggest that energy exposure at the larger banks in Texas is now predominantly through these shared credits.

The increased use of shared credits helps the state's banks diversify geographically so they are not as exposed to regional downturns. In the 1980s, Texas banks couldn't open branches outside the state, leaving them unable to diversify their asset mix beyond the state's borders. But these limits largely disappeared, permitting Texas banks to open branches and operate outside the state and thus better manage local risk.

Hedges provide additional cushion against falling oil prices. Hedging can lock in prices, protecting investors and creditors from declines, but only in the short to medium term. Therefore, the longer oil prices remain relatively low, the less effectively hedges function.

## Industry Challenges

Banks in the region have outperformed those nationwide since 2006, and business conditions have improved markedly over the past five years. Profits

are up, balance sheets are stronger and banks seem to have overcome the problems that plagued the industry before and during the financial crisis. Recently, new challenges have appeared.

The low-interest-rate environment and a flat yield curve with relatively little difference in interest rates across various maturities have pressured bank earnings over the past five years. Banks have responded by extending their maturity profile in an attempt to generate more robust returns. As interest rates normalize, regulators will need to monitor banks' ability to restructure their maturity profiles and adapt to the new environment.

The impact of recent oil price declines on banks also bears watching, particularly in Texas. While banks appear to be managing their energy exposure well—and a relatively short spell of low energy prices is not expected to have a severe, adverse effect on local banks—the importance of energy in certain regions points to the possibility of relatively large localized disruptions.

The banking system has navigated a postcrisis path to recovery. Conditions have improved markedly, but the industry must remain vigilant to potential risks to its financial health and stability.

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## Notes

<sup>1</sup> Community banks are defined as banks with assets of less than \$10 billion. The banking industry as discussed here includes commercial banks and savings associations, or thrifts.

<sup>2</sup> The FDIC defines problem banks according to its CAMELS rating system. The CAMELS rating assesses bank condition by grading an institution according to its capital adequacy, asset quality, management, earnings, liquidity and sensitivity to market risk. The rating is from 1 to 5. Banks with a 1 or 2 rating are judged to present few, if any, supervisory concerns. Banks rated 3, 4 or 5 present moderate to extreme degrees of supervisory concern; a problem bank is rated 4 or 5. For more detailed information about the CAMELS rating system and methodology, see [www.fdic.gov/regulations/laws/rules/5000-900.html](http://www.fdic.gov/regulations/laws/rules/5000-900.html).

<sup>3</sup> The six banks are JPMorgan Chase, Bank of America, Citigroup, Wells Fargo, Goldman Sachs and Morgan Stanley. The Boston Consulting Group study included only fines and settlements exceeding \$50 million.

<sup>4</sup> The Eleventh Federal Reserve District consists of Texas, northern Louisiana and southern New Mexico.

<sup>5</sup> See "Banking Recovery Could be Vulnerable to Interest Rate Increases," by Kenneth J. Robinson, Federal Reserve Bank of Dallas *Southwest Economy*, Second Quarter 2014.

<sup>6</sup> For a detailed analysis of the 1980s crisis, see "Banking Problems in the Southwest," by Brian Lamm and John O'Keefe, in *History of the Eighties—Lessons for the Future*, vol. 1, Federal Deposit Insurance Corp., December 1997, [www.fdic.gov/bank/historical/history/291\\_336.pdf](http://www.fdic.gov/bank/historical/history/291_336.pdf).

<sup>7</sup> See "Lower Oil Prices Weaken Prospects for Job, Economic Growth in Texas," by Michael D. Plante, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2015, and "Regional Economy Moderates," by Emily Gutierrez and Anil Kumar, Federal Reserve Bank of Dallas *Regional Economic Update*, March 19, 2015.

<sup>8</sup> Nonperforming assets include loans past due 90 days or more, nonaccrual loans and other real estate owned. The calculation of tangible equity capital excludes intangible assets such as goodwill.

<sup>9</sup> For detailed information on the costs of the 1980s crisis, see "The Cost of the Savings and Loan Crisis: Truth and Consequences," by Timothy Curry and Lynn Shibut, Federal Deposit Insurance Corp., *FDIC Banking Review*, vol. 13, no. 2, 2000.

<sup>10</sup> See "Texas Real Estate: From the 1980s Oil Bust to the Shale Oil Boom," by John V. Duca, Michael Weiss and Elizabeth Organ, and "The Evolution of Texas Banking," by Kory Killgo and Kenneth J. Robinson, in *Ten-Gallon Economy: Sizing Up Economic Growth in Texas*, Pia Orrenius, Jesus Cañas and Michael Weiss, ed., New York: Palgrave Macmillan, forthcoming September 2015.

<sup>11</sup> Formally, SNC is any loan or formal loan commitment that totals at least \$20 million and is shared by three or more unaffiliated, supervised institutions. For more information on the SNC program, see [www.federalreserve.gov/bankinforeg/snc.htm](http://www.federalreserve.gov/bankinforeg/snc.htm).

*A Conversation with Colin Woodall*

## Trade Advocates, Cattlemen Have Beef with Meat Labeling Rules

*Texas, as the nation's top cattle producer, has a stake in regulations governing beef sales. Besides meat products, federal Country of Origin Labeling (COOL) rules cover labeling of fresh fish, fruits, vegetables and nuts. Colin Woodall, National Cattlemen's Beef Association senior vice president of government affairs, discusses requirements for labeling designed, in part, to provide consumers with information about the source of foods they prepare.*

### **Q. What is COOL and how long has it been in effect?**

Under the federal COOL program, beef must be labeled with the locations where the animal, from which the beef was processed, was born, raised and slaughtered. COOL proponents see it as a marketing program that promotes U.S. beef to customers.

COOL was originally passed by Congress as part of the 2002 farm bill, but implementation was delayed. After the 2006 congressional elections, COOL was included in the 2008 farm bill. This time, the program was implemented and USDA began enforcement in March 2009. The National Cattlemen's Beef Association has not supported COOL. While the measure's supporters have suggested food safety is involved, we believe in the reliability of the preexisting food safety program that has ensured that all beef served in the United States, regardless of its origin, is safe to eat.

### **Q. Labeling seems like a good thing—consumers get more information and can make better choices. Why do the beef producers and meat-packers that you represent want to repeal COOL?**

Labeling is a tremendous marketing tool, but not necessarily when it involves the government. The basic fundamentals of marketing tell you to take your product, develop a brand and label that grabs

the consumer's eye and deliver such a high-quality eating experience that the consumer remembers your brand/label and actively seeks it out in the future.

With COOL, we just get small black print on a label that is already crowded with information. It does little to actually brand our product or make it stand out to the consumer. This is why we don't believe COOL has worked as a marketing program. In a recent study conducted by Kansas State University, over 70 percent of the respondents didn't know that COOL is currently found on packages of beef.<sup>1</sup>

There are some groups that continue to cite polls showing Americans want to know where their beef comes from. Still, we need more than a simple poll question on which to base federal policy. The Kansas State study also found that although consumers may say they want to know the origin of their beef, their behavior and priorities change once they actually reach the meat case and buy steaks or ground beef. At that point, price becomes the focus. Cattle producers are shrewd businessmen and women who expect a return on their investment. They view COOL as costing money without boosting revenue.

### **Q. How are the costs of regulation split? How is production from farm to market affected?**

Different segments of the beef industry are bearing the costs of COOL.

At the retail level, investments have to be made in new or modified scale printers and the recordkeeping tools to prove compliance. At the packer level, processing lines have been modified to ensure that cattle from the United States, Canada and Mexico are each processed separately.

Processors must also invest in recordkeeping tools. Cattle feeders must show origin, and they must sort their cattle to ensure the different origins are accounted for. Cow/calf producers must prove the origin of every animal they market. All of these actions add costs to our system. Given all the costs, one would expect beef prices to increase, but they haven't due to COOL alone. The costs are being borne by the production chain.

### **Q. Does labeling apply just to beef products sold in grocery stores? What about restaurants or processed food?**

COOL only applies to unprocessed beef sold in a retail grocery store. It does not apply to food service, restaurants or processed beef. Although COOL is supposed to satisfy consumers' right to know, there is a problem when more than half of the beef sold in this country isn't covered.

Additionally, processed beef is exempt from COOL. Let's take a steer that is processed into individual cuts of beef. On each side of the spine you will find a tenderloin. Take one of those tenderloins, vacuum pack it and put it in the retail meat case. Take the other one, roll it in peppercorns or other seasoning and put it in the retail meat case. Even though those tenderloins came from the same animal, the one with the additional seasoning is considered processed and exempt from COOL. Another thing to note is that most of the imported beef is sold through food service or restaurants.

### **Q. How big is the U.S. beef industry and what states are the biggest beef producers? How much is exported?**

The U.S. beef industry has an economic impact of \$66 billion. This figure represents sales of beef cattle and cattle





and calves from feedlots as reported in the U.S. Department of Agriculture's *Census of Agriculture*. We have approximately 90 million head of cattle in the country, and Texas is consistently the top state in cattle production, with Nebraska, Missouri, Oklahoma and South Dakota rounding out the top five. International trade is a priority focus for our industry as we try to get more U.S. beef to the 96 percent of the world's population that resides outside of our country.

The middle class in many countries is increasing. With this comes more disposable income, and when people have more money to spend, they usually like to eat better. Eating better means an increase in the consumption of protein, and we want that protein of choice to be U.S. beef. We currently export approximately 14 percent of our total beef production. The value associated with that trade adds \$350 to the value of each marketed beef animal. Our top five export markets are Japan, Mexico, Hong Kong, Canada and South Korea.

### **Q. What are the implications of COOL for Texas, the nation's largest beef producer?**

Because of the business model many Texas cattle producers use, they are particularly adversely affected by COOL. Many producers across the state will buy feeder cattle (animals destined for feedlots for fattening prior to slaughter) from Mexico and bring them into Texas. When those cattle cross the border, they are not ready to be processed at a packing plant. These

▶ So far, the WTO has ruled four times that Country of Origin Labeling (COOL) violates U.S. trade commitments.

cattle need to be fattened up and finished on ranches and feedlots from the Rio Grande to the Panhandle. Because of COOL, though, these animals have to be sorted out and handled differently than U.S.-born cattle to be in compliance.

After these cattle have been finished in Texas, many of them match the quality of cattle born and raised solely in the state. When they are marketed, however, they fetch a lower price because of their origin. Such discounts range from \$35 to \$60 per head.

### **Q. How do you reconcile COOL with the free-trade agreements the U.S. has with its trading partners, particularly Mexico and Canada?**

Mexico and Canada filed a complaint against the U.S. COOL program with the World Trade Organization (WTO). So far, the WTO has ruled four times that COOL violates U.S. trade commitments. [The most recent decision, released May 18, was in response to a complaint from Canada.] What does that ultimately mean and why do we care about the WTO? We care because the WTO can authorize retaliation against the United States by Canada and Mexico.

Retaliation can be in the form of closing the border to the import of our product or the addition of a tariff. Canada and Mexico, as two of our top five cattle export markets, constitute approximately one-third of our total exports. Loss of access to those markets could cost America's cattle producers approximately \$115 to \$120 per head.

### **Q. If labeling beef products "Made in the USA" helps sales, why don't U.S. producers voluntarily label their beef products?**

Labeling beef as "Made in the USA" doesn't help sales. If there was true consumer demand for an origin label, coupled with a willingness to pay

for it, our industry would have voluntarily added that label years ago. The demand for that label just is not there, and we think our experience with COOL over the past six years proves it. There is a place for voluntary labels in our industry. We currently have several USDA-approved labels or branded programs that are voluntary and based on consumer demand and market forces.

While these labels don't always include an origin, they cover things such as the breed of cattle, whether the product is natural or organic beef and if the beef was produced without antibiotics or hormones.

There are also many state and regional programs that have been hugely successful and have resulted in premiums being paid to producers who participate in them. These labeling tools give consumers the information they truly desire and are willing to pay for. I would argue that beef labeled with the Texas Department of Agriculture's "Go Texan" label has meaning for consumers.

### **Note**

<sup>1</sup> See "Mandatory Country of Origin Labeling: Consumer Demand Impact," by Glynn T. Tonsor, Jayson L. Lusk, Ted C. Schroeder and Mykel R. Taylor, Department of Agricultural Economics, Kansas State University, November 2012.

# ADP Payroll Processing Data Can Provide Early Look at Texas Job Growth

By Keith R. Phillips and Christopher Slijk

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**ABSTRACT:** A monthly estimate of state job growth prepared by payroll processor ADP is a reliable advance indicator of changes in official employment data released by the Bureau of Labor Statistics. The ADP figures are useful in providing timely analysis of the Texas economy.

**M**onthly job growth is among the most important and timely indicators available to measure economic conditions at the state level. Official employment data are usually available about three weeks following month's end. But Automatic Data Processing (ADP) Inc., a national payroll processing company, provides estimates of private sector job growth that are released 10 days earlier.

ADP's payroll processing operations in Texas are a subset of the 23 million employees covered nationwide, accounting for approximately 20 percent of national private sector employment.

While ADP's estimates of private sector job growth do not exactly match the official data, an analysis of the firm's estimates shows they are correlated and can be used in a simple model to obtain useful preliminary estimates of Texas job growth.

## Measuring Job Growth

Texas nonfarm employment from the Current Employment Statistics (CES) program, produced by the Bureau of Labor Statistics (BLS) in cooperation with the Texas Workforce Commission (TWC), is generally available the third Friday of the month.<sup>1</sup> These data reflect the number of jobs on company payrolls for the week that includes the 12th day of the month. For example, Texas employment data for May 2015 will be released on June 19 and will reflect the number of jobs at firms and government agencies during the week of May 8–12.

At the same time May figures are released, the data for April are revised. Besides the month-earlier revision, the only other official revision occurs at the annual benchmark, which coincides each year with the release of the

January data. The benchmark, which aligns the CES survey data with the more comprehensive Quarterly Census of Employment and Wages, provides a better measure of actual job growth but lacks timeliness.

Timely, comprehensive employment data are critical to evaluating economic activity in real time. Other indicators of economic activity, such as Texas real gross domestic product (RGDP), are more delayed. RGDP is released annually with about a six-month lag.<sup>2</sup> As of May 2015, Texas RGDP data were only available for 2013.

Because of the importance of the employment data, the Dallas Fed takes steps to improve the series and make it more useful. Improvements include early benchmarking and applying a two-step seasonal adjustment to the data at the fine industry and metropolitan levels. These processes reduce revisions when the annual benchmark occurs and ensure proper adjustments for seasonality.<sup>3</sup>

Arriving at an estimate of private sector job growth 10 days sooner than the official data—as the ADP data do—can be important to analysts who track the economy and to businesses that plan for labor and capital changes. This is particularly true during times of significant economic adjustment, such as the recent decline in the energy sector.

Nationally, ADP releases an estimate of seasonally adjusted private sector job growth two days before the official BLS data are released. In 2013, ADP began releasing data for 29 states and the District of Columbia. Because the ADP's seasonally adjusted private sector employment data do not represent a comprehensive sample of private sector jobs, a statistical evaluation is necessary to provide guidance on the data's efficacy as an earlier estimate of job growth.



## ADP Job Estimates

Because ADP does not process payrolls for the government, the ADP estimate is an assessment of private sector employment. In Texas, private employment represents 84.2 percent of total nonfarm jobs. Thus, the ADP report can be used by itself to estimate private sector job growth or can be added to an estimate of government sector growth to approximate total nonfarm job growth.

Since ADP began tracking this data in January 2005, the seasonally adjusted series has moved closely with official BLS estimates of Texas private sector employment (*Chart 1*). Year-

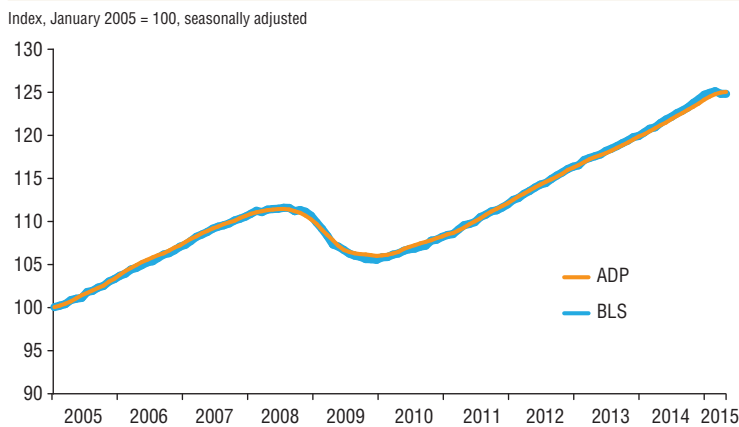
over-year growth rates in ADP and BLS data tell a similar story—the two are very closely related (*Chart 2*).

However, if one were simply to use the growth rate in the ADP as an early estimate of growth in the official data, *Chart 2* shows there would be recurring periods of persistent overestimation and underestimation. This implies that a model using changes in the ADP as well as past values in official job growth estimates would provide better forecasts than one using growth in the ADP alone.

There is another important issue to consider: The data in *Charts 1* and *2* show the final revised values of

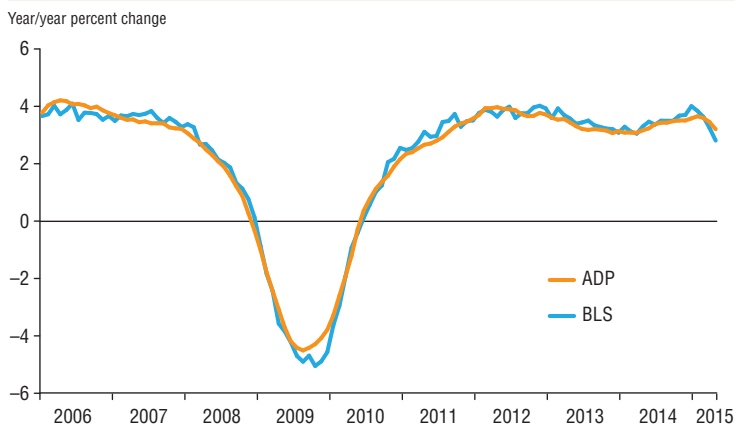
▶ *The ADP report can be used by itself to estimate private sector job growth or can be added to an estimate of government sector growth to approximate total nonfarm job growth.*

**Chart 1** | ADP Employment Tracks Official Data Closely



SOURCES: Automatic Data Processing (ADP); Bureau of Labor Statistics (BLS).

**Chart 2** | Employment Series Similar, but Official Data More Volatile



SOURCES: Automatic Data Processing (ADP); Bureau of Labor Statistics (BLS).

► *There is a strong, statistically significant relationship between changes in the ADP data and the first estimate of Texas private sector job growth.*

employment. Yet in real time, what we are estimating with a 10-day advance is the *first* estimate of job growth—not the second revised estimate or the final benchmark estimate. It could be that a model fit on the current BLS series—which is benchmarked through September 2014, has second estimates through March 2015 and a first estimate for April 2015—does not perform well when used to fit only first estimates (the most recent month).

Given that the focus of this examination is the use of ADP data for timely current analysis, we are most interested in obtaining an early estimate of what the official estimate will be 10 days later. Hence, we construct a model based only on first estimates of monthly growth of the official employment data going back to 2005. ADP data are also subject to revision, and this exercise draws on as much first-estimate ADP data as possible.<sup>4</sup>

### Model Performance

The model indicates that ADP data are useful in estimating Texas private sector job growth. There is a strong, statistically significant relationship between changes in the ADP data and the first estimate of Texas private sector job growth. This relationship holds up in different variations of the model. The version of the model used considers past changes in private employment

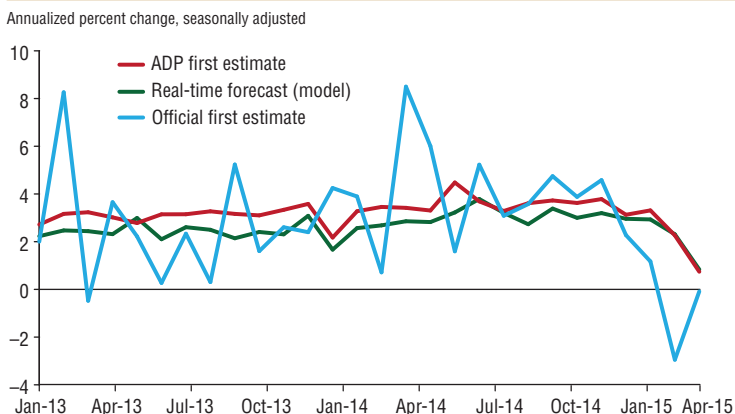
growth along with the current-month ADP estimate. (For more information on the model, see the appendix “Using ADP Data to Estimate Texas Private Job Growth,” [www.dallasfed.org/assets/documents/research/swe/2015/appendix.pdf](http://www.dallasfed.org/assets/documents/research/swe/2015/appendix.pdf).)

Chart 3 illustrates how the model would have performed if used from January 2013 through April 2015. The first value of the green line shows the result of running the model using official private employment data through December 2012 and January ADP data released in early February 2013.

Moving forward from January 2013, the model is reestimated using only the data available at the time of the given month. Hence, the green line is a replication of what the actual forecast would have been had the model been run each month on the day that the ADP estimate was released. It is clear that the official first estimates of job growth are much more volatile than the ADP estimate and the model forecast.

Additionally, the average error from the forecast is smaller than if the ADP growth rate were used as a direct estimate of private sector job growth. During this 28-month, real-time forecast exercise, the estimate was also unbiased—meaning that the average error was not statistically different from zero. While in some months the error can be quite large, the forecast is useful

**Chart 3** | Model Predicts Employment Changes Better than ADP Alone



SOURCES: Automatic Data Processing (ADP); Bureau of Labor Statistics (BLS); authors' calculations.



overall in producing an early estimate of private sector job growth.

This analysis shows that the ADP data can provide useful information about the current month's growth in private sector jobs 10 days before official data are released. However, another interesting question is whether the errors in the forecast can tell us anything about the revisions in the official data from the first estimate to the second.

In other words, if the model with the ADP data suggests that private job growth is likely to strengthen, while the CES first estimate shows a weakening, does this imply that the data are more likely to be revised upward when the second estimate of official growth is released the following month?

Chart 4 plots the percentage-point error in the annualized growth forecast and the revision from the first to second estimate and indicates a positive relationship between the two. To quantify this, the official data revision from the first estimate to the second is statistically compared through regression on the model's forecast error.<sup>5</sup> It appears that the error in the model is statistically significant in explaining the revisions in the official data. That is, the bigger the error from the ADP model (if the first estimate of official job growth is much higher than the ADP model

forecasts), the more likely the first estimate will be revised downward the following month.

As an example of the timely application of the model, data through April 2015 were used. The first estimate of April private sector job growth is lower than the model forecasts, as Chart 3 shows. Based on the relationship between forecast errors and official revisions in Chart 4, the official annualized growth rate from March to April will likely be revised higher by 0.2 percentage points.

### Challenges and Related Research

Analysis shows that the ADP data appear to provide early insight into very recent growth in private sector jobs in Texas. The estimate is much smoother than the formal CES data and, thus, when monthly job growth experiences large swings, the early growth estimates based on the ADP can be quite different than the official data released 10 days later.

Smoothness in the ADP data may be due to an overrepresentation of large firms that tend to be less volatile than smaller firms or an overrepresentation of industries that fluctuate less than average.

These results are consistent with similar national studies. Previous re-

search on employment data for the U.S. shows that incorporating national ADP data into a short-term forecasting model improves the accuracy of projections for first-estimate BLS data.<sup>6</sup>

*Phillips is an assistant vice president and senior economist and Slijk is an economic analyst in the San Antonio Branch of the Federal Reserve Bank of Dallas.*

### Notes

<sup>1</sup> The job estimates for January and February are delayed due to the annual benchmark processes—the remaining months follow the third Friday schedule.

<sup>2</sup> In September 2015, the Bureau of Economic Analysis plans to release quarterly state GDP with a six-month lag.

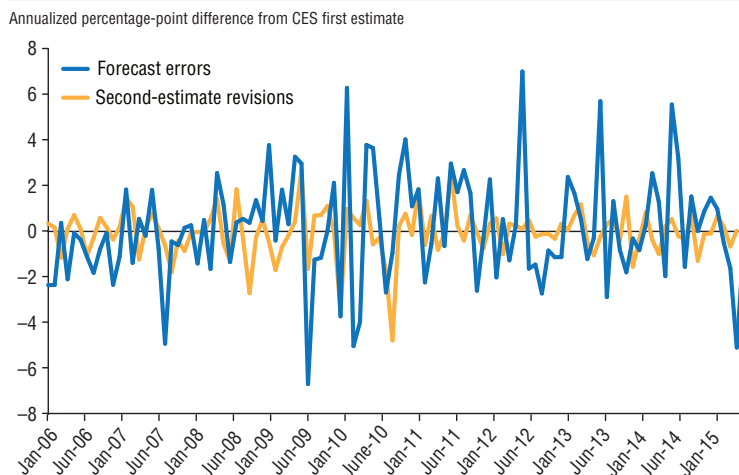
<sup>3</sup> For further information on these processes, see "Reassessing Texas Employment Growth," by Franklin Berger and Keith R. Phillips, Federal Reserve Bank of Dallas *Southwest Economy*, July/August 1993, [www.dallasfed.org/assets/documents/research/swe/1993/swe9304a.pdf](http://www.dallasfed.org/assets/documents/research/swe/1993/swe9304a.pdf). Also see [www.dallasfed.org/research/basics/index.cfm](http://www.dallasfed.org/research/basics/index.cfm).

<sup>4</sup> Each month when the ADP estimates are released, the prior two months are revised. Monthly releases of Texas ADP data are available online back to July 2014. We use these releases to create a real-time first-estimate series from that date.

<sup>5</sup> Second estimates of December data are not available from the same generation of data prior to the BLS benchmark. Due to the October 2013 government shutdown, the second estimate for August and first estimate for September are not available. These data were excluded from the model of the error terms and from Chart 4.

<sup>6</sup> "Testing the Value of Lead Information in Forecasting Monthly Changes in Employment for the Bureau of Labor Statistics," by Allan W. Gregory and Hui Zhu, *Applied Financial Economics*, vol. 24, no. 7, 2014, pp. 505–14.

**Chart 4** Forecast Errors Indicate Likely Revisions in Following Month



NOTES: December values and August–September 2013 values excluded. Data are seasonally adjusted.  
SOURCES: Automatic Data Processing; Bureau of Labor Statistics' Current Employment Statistics (CES).



## INCOME DISPARITY: Inequality Lower in Large Texas Cities

Within the nation’s 50 largest cities, the top-earning households (those making more than 95 percent of all households) earned 11.6 times what households at the bottom earned (those making more than the bottom 20 percent of households), Brookings Institution researchers have found. Overall, the ratio of income at the 95th percentile to the 20th percentile was 9.3, suggesting that the nation’s largest cities have greater income inequality than smaller communities and rural areas.

By most measures, U.S. income inequality has consistently grown since the 1970s. Partly in response to record disparity, 14 states and the District of Columbia have recently raised the minimum wage.

Using Census Bureau data, Brookings also ranked the 50 largest cities from most unequal to least. Dallas was seventh—the only one of Texas’ seven large cities to make the top 10. Houston was 15th, with Austin, San Antonio, El Paso, Fort Worth and Arlington in the lower half of the ranking. Atlanta led the list.

The household income of those at the 95th percentile in Dallas and Houston significantly advanced from 2012–13, with Dallas increasing 12.2 percent and Houston 6.3 percent. Those at the bottom 20th percentile in Houston and Austin also experienced significant income growth at 7.1 and 8.4 percent, respectively.

—Emily Gutierrez



## VISAS: Texas Metros Top List for Temporary Foreign Skilled Labor

Petitions for the 2016 allotment of H-1Bs—temporary work visas for high-skilled labor—reached the annual cap just six days after the filing period opened in April, according to U.S. Citizenship and Immigration Services (USCIS). With only 85,000 visas available for the private sector and an average of 130,000 petitions filed annually, many applicants are turned away.

Dallas–Fort Worth ranked second among U.S. metros for the highest number of approvals in fiscal year 2014, mostly due to large financial and technology sectors, while Houston placed 12th, according to a Brookings Institution report. College Station, home to Texas A&M University, ranked second nationally for the ratio of H-1B employees per 1,000 workers, while DFW was fifth. Nonprofit research and higher education institutions are exempt from the H-1B visa cap.

H-1B recipients tend to be young, highly educated professionals from Asia. In fiscal year 2014, 58 percent of applicants held a master’s degree or higher and 72 percent were 25 to 34 years old. About 70 percent of applicants were from India and 65 percent of applicants worked in systems analysis, computer programming or other computer-related occupations, according to USCIS. Among the largest H-1B employers are Tata Consultancy Services and Infosys—multinational corporations with operations in Dallas.

—Sarah Greer



## ENERGY: Record Crude Supply Presses Storage Limits in Cushing, Okla.

Since oil prices began declining in mid-2014, hopeful producers—betting on higher oil prices in the near future—have stored more oil, pushing inventories at the Cushing, Okla., storage hub and elsewhere in the U.S. to levels not seen in more than a decade. Inventories have more than tripled at Cushing, the largest such storage facility in the U.S.

Cushing’s working capacity of 70.8 million barrels as of September 2014 equals the current seven-day output of U.S. oil producers. West Texas Intermediate, the domestic benchmark for crude oil, is priced in Cushing for sale to refineries and other downstream producers.

Cushing is a major pipeline transportation hub. Hundreds of thousands of barrels a day pour in from crude producers in the Permian Basin through pipelines such as the Plains All American Basin system, which is capable of carrying 450,000 barrels per day, or more than one-fifth of the basin’s current production. Crude oil then flows from Cushing to refiners. The largest outgoing pipelines, including the Seaway, with a capacity of more than 1 million barrels per day, carry crude to Texas Gulf Coast refineries.

High inventory levels put downward pressure on futures prices. If Cushing were to reach capacity, it could cause oil prices to tumble to new lows.

—Kristin Davis



# Chinese Slowdown Restrains Texas Exports

By Jack Wang

China has been Texas' fastest-growing export destination for more than a decade. Texas' exports to that nation have expanded at an inflation-adjusted average of 38 percent per year since 2001—the year China joined the World Trade Organization (*see chart*).<sup>1</sup> China's entry onto the world stage was accompanied by rapid domestic economic expansion, with average annual gross domestic product (GDP) growth exceeding 10 percent. Imports and exports both rose more than 600 percent from 2001 to 2013.

China is the fourth-largest Texas export destination after Mexico, Canada and Brazil, even as its economy weakened last year. While in 2014 Texas exports to China totaled \$10.9 billion, they declined for three consecutive quarters through fourth quarter 2014.

China's real (inflation-adjusted) GDP expanded only 7.4 percent in 2014 and an annualized 7 percent in first quarter 2015—the lowest rate in six years. Projections for future growth have been revised even lower. The International Monetary Fund anticipates real GDP growth of 6.8 percent in 2015 and 6.3 percent in 2016—the lowest since 1991. Of even greater concern are signs of a deflating housing market and mounting local government debt. Since the global financial crisis of 2007–09, China's overall debt-to-GDP ratio has risen from around 120 percent to roughly 200 percent.

Weakening Chinese demand will most affect Texas' agricultural and manufacturing industries. China imports chemicals, plastics and industrial machinery from Texas. Compared with other Asian or Latin American countries, China has a larger appetite for Texas agricultural products. About \$1.4 billion of Texas agricultural exports went to China in 2014. Mexico, the second-largest agricultural customer, imported goods worth \$840 million that year.

The relationship between Texas exports and the Chinese manufacturing Purchasing Managers Index (PMI) provides a way to quantify the impact of a decelerating Chinese economy. Manufacturing accounts for about 32 percent of the Chinese economy, making it a good proxy for economic activity. A PMI above 50 represents expansion over the period, while a reading of 50 or below represents no change or contraction.

Using data from first quarter 2005 to fourth quarter 2014, Texas exports appear highly correlated with changes in the Chinese PMI. A statistical analysis using regression indicates that in first quarter 2015, the 0.4-point drop in Chinese PMI would imply about a \$23 million impact on Texas exports to China.

A stronger dollar is another area of concern. It appreciated against China's renminbi (RMB) in 2014 after weakening in prior years. For China, a declining RMB could lead to capital outflows and damp officials' efforts to make the RMB a global reserve currency. However, if China's economic fundamentals deteriorate further, Chinese authorities may still seek to loosen ties to the dollar and further depreciate the RMB,

which would make Texas products more expensive in China.

China also affects Texas' economic relationship with other countries and states. For example, China's burgeoning demand for commodities over the past decade helped boost growth in Brazil's commodity-driven economy. A slowing China lessened Brazil's demand for Texas exports, which have declined over 20 percent from first quarter 2014 to fourth quarter 2014.

As China's economy decelerates, energy consumption is also expected to slow. China is the world's second-largest consumer of oil and is about to become the largest importer of the commodity.<sup>2</sup> Growing supply has contributed to falling global oil prices since mid-2014, with Texas energy sector employment falling. Further softening of Chinese energy demand will have consequences for oil prices, dimming prospects for a recovery and possibly depressing oil prices further.

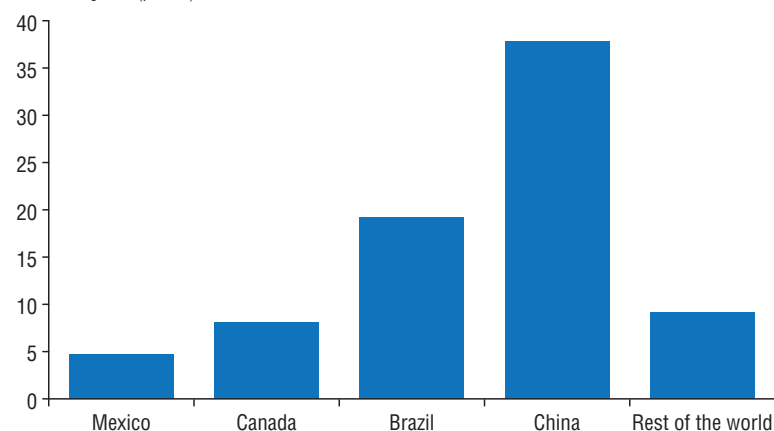
## Notes

<sup>1</sup> Inflation-adjusted export growth between 2001 and 2013. The nominal export values are adjusted using the U.S. export deflator reported by the Bureau of Labor Statistics.

<sup>2</sup> China surpassed the U.S. as the largest net oil importer in April 2015.

## Texas Exports to China Increase the Most

Annual average rate (percent) 2001–13



SOURCES: Census Bureau; WISERTrade; author's calculations.

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## SNAPSHOT

# Texas Growth Conference Series

**T**exas' outsized growth since the recession has been supported by a booming energy sector, strong exports and longer-term factors such as low costs of living and doing business. However, the recent fall in oil prices, a strong dollar and slowing growth in Asia and Europe loom over the state's prospects this year. How will Texas and its diverse regions respond?

The Federal Reserve Bank of Dallas is launching a conference series, *Sizing Up Texas' Growth*, examining economic trends and prospects for Texas and its major regions—South Texas, the Gulf Coast, West Texas and North Texas. Speakers will also address the national and global economies.

The initial one-day conference, "Vistas from Texas: An Economic Outlook," is sponsored by the Research Department's regional group and will be held at the Dallas Fed's Houston Branch on Aug. 7. Future installments of the series will rotate between the Dallas Fed and its branches in Houston, El Paso and San Antonio and will



feature topics of interest to the local area. In Houston, experts will discuss energy and trade and their importance for the region's long-term growth.

—Amy Jordan

## DALLAS FED



### Southwest Economy

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