

Southwest Economy



▶ **Risks Mount for Eleventh District
Banks amid Energy Weakness**

PLUS

- ▶ **On the Record: Playing to Houston's Strengths:
Internationalism, Energy, Innovation**
- ▶ **Houston Grinds to a Halt as Oil Industry Declines**
- ▶ **Spotlight: Central American Population Soars in Texas,
U.S.; Migrant Profiles Evolve**
- ▶ **Once-Robust Wage Growth Stops as Texas Economy Slows**



▶ *As the nation's leading producer of oil and natural gas, Texas is no stranger to the booms and busts of commodities markets. But the economy's resilience is notable this time.*

Texas is not in recession, but the Eleventh District economy continues to sort through the fallout from the collapse of oil prices. I am confident that the region's economy will continue to expand but, as the articles in this issue of *Southwest Economy* indicate, we still face significant headwinds before we can return to trend growth.

Houston, our district's biggest metropolitan area and the nation's de facto energy capital, continues to deal with the adverse effects of the oil bust, as Jesse Thompson describes in "Houston Grinds to a Halt as Oil Industry Declines." Fortunately for Houston and the state, the downstream energy industry, led by petrochemicals, has held up well, and job creation in the metropolitan area's service sector has offset most of the job losses in the energy and manufacturing sectors.

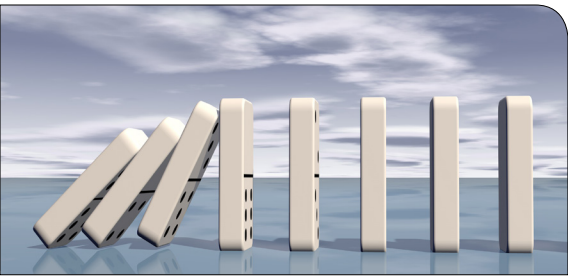
In "Once-Robust Wage Growth Stops as Texas Economy Slows," Amy Jordan and Emily Gutierrez describe how weekly wages rose sharply in the oil boom but have since fallen regionally while continuing to grow nationally. The decline in compensation affects consumer demand, which has weakened in energy-intensive regions of the state such as Houston and South and West Texas.

The energy sector downturn and slower economic growth are also affecting Eleventh District banks, as Kelly Klemme and Ed Skelton explain in "Risks Mount for Eleventh District Banks amid Energy Weakness." Loan growth slowed markedly in 2015 and, while the region's banks remain profitable, bankers are setting aside more in provision expense to cover possible loan losses. Commercial real estate lending is also receiving additional scrutiny from regulators.

As the nation's leading producer of oil and natural gas, Texas is no stranger to the booms and busts of commodities markets. But the economy's resilience is notable this time; the state is still adding jobs despite the largest drop in energy prices in 30 years. The inherent strength of the Texas economy is bolstered by the quality of its workers and firms and the resourcefulness and productivity of its people.

A handwritten signature in black ink that reads "Robert S. Kaplan". The signature is written in a cursive, flowing style.

*Robert S. Kaplan
President and Chief Executive Officer
Federal Reserve Bank of Dallas*



Risks Mount for Eleventh District Banks amid Energy Weakness

By Kelly Klemme and Edward C. Skelton

ABSTRACT: Relatively low energy prices have slowed economic expansion and diminished prospects for Eleventh District banks. Though regional institutions outperformed their peers nationally in 2015, loan growth slowed and profitability declined, leading to a guarded outlook for 2016.

The business environment has become more difficult for Eleventh District banks amid weak oil prices, challenging institutions that have heightened energy sector exposure.¹ Tepid economic growth and a downbeat forecast also point to commercial real estate lending as an emerging area of concern.

This trying environment follows a slight profitability decline and slowing loan growth among district banks in 2015. Even so, they outperformed their counterparts nationwide.²

Higher Provision Set Asides

From 2009 to 2014, district banks improved their asset quality and were able to set aside less money to ensure against possible loan losses (known as provision expense), thus boosting profitability. In 2015, banks began increasing loan-loss reserves amid concerns over energy-related credits.

The increase in provision expense at district banks parallels increased losses in commercial and industrial (C&I) loans, which include loans to

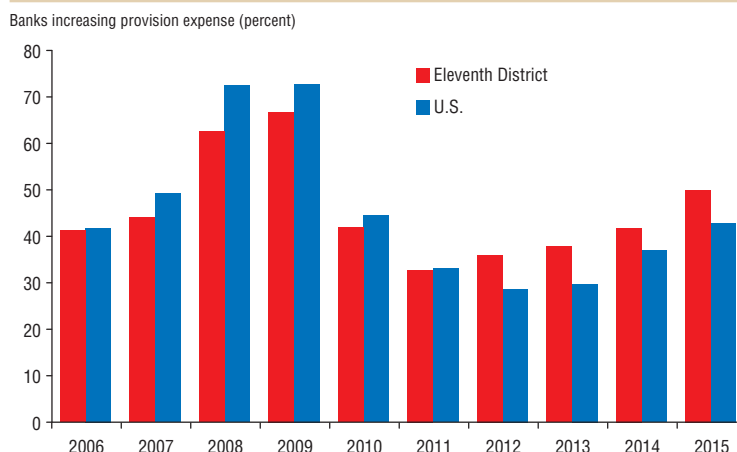
oil and gas companies. Half of district institutions—275 in all—increased provision expense last year, up from 42 percent, or 240, in 2014 (*Chart 1*).

Nationally, 43 percent of institutions boosted provision expense in 2015, up from 37 percent in 2014. Within the district, the increase was concentrated among so-called regional banks, those with assets greater than \$10 billion. District banks in this size group accounted for two-thirds of the uptick in provision expense, well above their market share, which amounted to 46 percent of bank assets.

District institutions also reported an increase in the percent of loans that are noncurrent—past due 90 days or more or no longer accruing interest. At year-end, 0.93 percent of loan portfolios at district banks were noncurrent. While well below the national level of 1.53 percent, this was up from 0.85 percent at year-end 2014 and the pre-financial-crisis low of 0.54 percent in 2006.

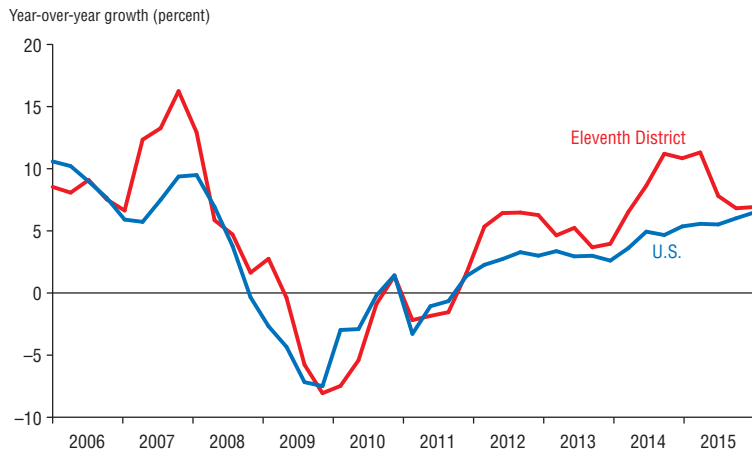
C&I loans played a role in the rise. While noncurrent C&I loans have

Chart 1 More Banks Increase Loan-Loss Provisions



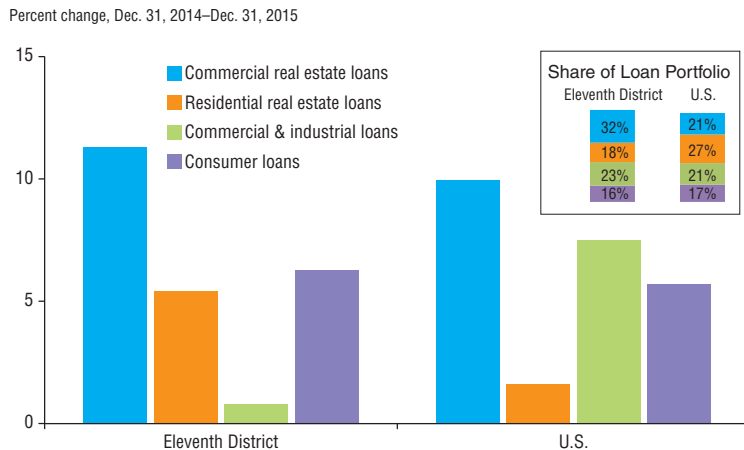
SOURCE: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council.

Chart 2 District Loan Growth Off Lofty Highs



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

Chart 3 Eleventh District, U.S. Bank Loan Growth Differs in 2015



NOTES: Commercial real estate loans are loans for construction and land development, loans secured by multifamily property and loans secured by nonfarm nonresidential property. Residential real estate loans are loans secured by one- to four-family residential property. Shares do not sum to 100 because a small "other" loan category was excluded.

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

increased since the beginning of 2014, the pace quickened in the second half of 2015. They now account for 32 percent of district banks' noncurrent loans, up from 19 percent in 2014 and 13 percent in 2013.

C&I loans have become the largest single component of noncurrent loans at district banks, surpassing both noncurrent residential real estate and commercial real estate loans for the first time since 2005. District banks with assets exceeding \$10 billion—many with a relatively high energy lending

exposure—accounted for almost three-fourths of the noncurrent C&I loan increase in 2015.

Bank call reports do not provide a detailed breakout of energy loans from the broader C&I loan category, but the increases in provision expense, noncurrent C&I loans and C&I loan losses are consistent with information from recent regulatory filings and investor conference calls indicating further increases in energy-related set asides.³ Rising energy-related provisioning reflects increased chances of

loan losses—a trend likely to continue through 2016.

District Loan Growth

Low energy prices have slowed economic expansion and likely affected district banks' C&I portfolios, contributing to sharply slower loan growth (Chart 2).

However, district banks still posted solid loan growth in 2015. The decrease in C&I portfolio health is also reflected in the low C&I growth rate among district banks (Chart 3). By comparison, U.S. banks' residential real estate portfolios grew the slowest.

Commercial real estate (CRE) portfolios have been an area of particular strength.⁴ Robust commercial real estate activity is a result of heightened demand for commercial projects and the resulting rising rental rates.⁵ Year-over-year growth was 11.3 percent at district banks in 2015 and 10.0 percent for banks nationwide. CRE loans make up 32 percent of loan portfolios in the district and 21 percent in the nation.

Moreover, noncurrent CRE loans remain very low—0.63 percent of the CRE portfolio in the district and 0.76 percent in the nation. However, noncurrent loans are a backward-looking measure and do not reflect current or future conditions. The strong CRE loan growth rate also improves the noncurrent rate because it increases the denominator with new loans that are unlikely to be noncurrent.

In spite of a more difficult environment, district bank profitability continued to exceed national bank profitability, although the gap narrowed (Chart 4).

District banks earned a return on average assets of 1.09 percent in 2015, down from 1.16 percent in 2014 but still slightly higher than the 1.05 percent nationally. Greater profitability among district banks has been driven by higher net interest income. For district banks, net interest income was almost 60 basis points (0.6 percentage points) higher than for banks nationwide at an annualized 3.31 percent of average assets (Chart 5). With the help of slightly lower tax expenses, this was more than

enough to offset lower noninterest, or fee, income and higher noninterest, or overhead, expense.

Higher net interest income and lower fee income reflect the concentration of banks with assets less than \$10 billion—so-called community banks—in the district. Their profits are driven by lending rather than fees or trading activities.

Commercial Real Estate Concerns

Fueled by strong loan growth, banks' commercial real estate lending concentrations are rising again. Although CRE lending has been generally driven by fundamentals and backed by more capital, the increase has raised concerns about the relative amount of such lending. In December, regulators issued a statement reinforcing prudent risk management practices for CRE lending.⁶

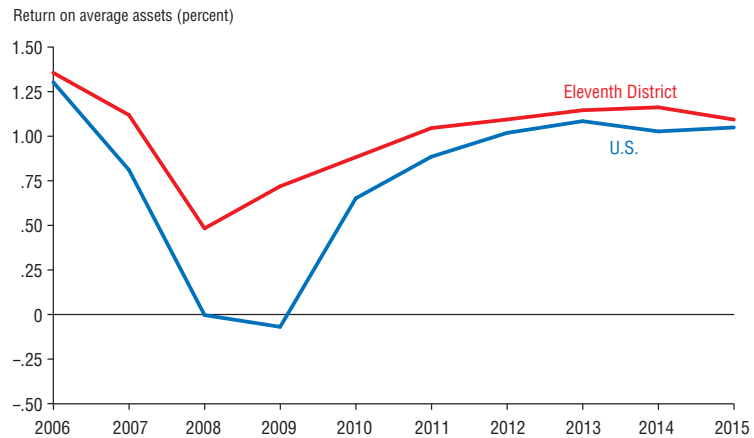
The increase in CRE loan concentration has been particularly pronounced among district institutions (*Chart 6*).

CRE loans were 188 percent of risk-based capital at district institutions at year-end 2015, up from 170 percent at the end of 2012 and above the 111 percent for institutions nationwide at the end of last year.⁷ (Risk-based capital is a regulatory measure of bank capital available to protect an institution against loss.) Higher levels of CRE lending are nothing new, and regulators generally are sensitive to the risks this portfolio poses.

The CRE buildup pales in comparison to banks' exposure 10 years ago, when CRE loans were 245 percent of risk-based capital at district banks and 145 percent of risk-based capital at banks nationwide. In response to these elevated levels, federal banking regulators in December 2006 issued guidance on concentrations in commercial real estate.⁸

The guidance, used to identify institutions for further supervisory analysis, says a potentially significant CRE concentration exists if: 1) Construction and land development loans equal 100 percent or more of risk-based capital, or 2) If total non-owner-occupied CRE

Chart 4 Profitability of District Banks Drifts Lower in 2015



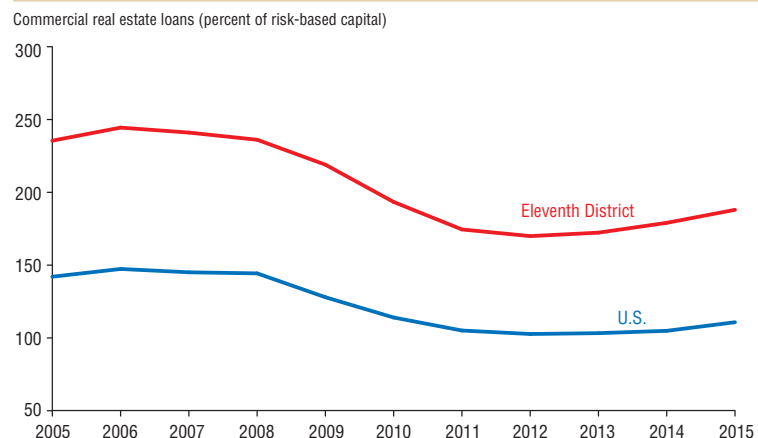
SOURCE: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council.

Chart 5 Net Interest Income Drives District Banks' 2015 Profit



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

Chart 6 Commercial Real Estate Loan Concentration Rising



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

loans equal 300 percent or more of risk-based capital and have grown 50 percent or more over the past three years. The overriding goal of the guidance is to ensure institutions manage commercial real estate risks prudently.

To the extent low energy prices hurt economic activity, commercial real estate weakness could be a byproduct.

Following the 2006 guidance, banks' commercial real estate concentrations, weighted by risk-based capital, declined steadily for about five years. While CRE loan concentration is up since 2012, strong capital growth has limited the relative rise. Among district institutions, CRE loans have expanded 25 percent since 2006, but capital has jumped 62 percent; nationally, CRE loans have risen 12 percent, while capital has increased 49 percent.

So, while banks have extra cushion to address potential problems, a cycle of higher real estate prices is generating more CRE activity (and lending). The question becomes when and how the cycle will be interrupted.

Observing the share of banks with CRE concentrations above the regulatory thresholds can shed light on both the impact of the initial guidance and the recent rise in concentrations (*Chart 7*). By year-end 2015, the share of district institutions

with CRE concentration measures above at least one of the thresholds had grown to 16 percent.

Nationwide, the share of institutions exceeding at least one of the thresholds had also grown, but only to 8 percent. In fact, 4 percent of district institutions were above both thresholds, compared with 1 percent of banks nationwide.

By comparison, in the previous five-year period, 2007–12, the share of institutions exceeding the guidelines fell from 27 percent to 6 percent in the district and from 28 percent to 5 percent nationwide.

Energy Takes Its Toll

The persistence of relatively low oil prices has begun taking a toll on district bank customers. Oil-price hedges become less effective the longer prices stay low, and the cushion built by energy firms during the good times gets thinner. Cash flow becomes stretched and collateral loses its value, further pressuring borrowers.

Regional banks with high energy concentrations have been the hardest hit. Credit evaluators Standard & Poor's and Moody's took negative ratings actions on several regional banks with high energy exposure in February, citing weaknesses in their energy port-

folios and the effects of the prolonged price slump. At the same time, regional banks increased their energy-related provisions and accelerated the pace of previously announced provisions. This combination of ratings agency actions and bank public statements sends a signal that losses are building faster than previously anticipated.

The Office of the Comptroller of the Currency issued regulatory guidance in March to address the risks associated with lending to upstream oil and gas exploration and production companies and provided examiner guidance on prudent risk management of this lending activity.⁹

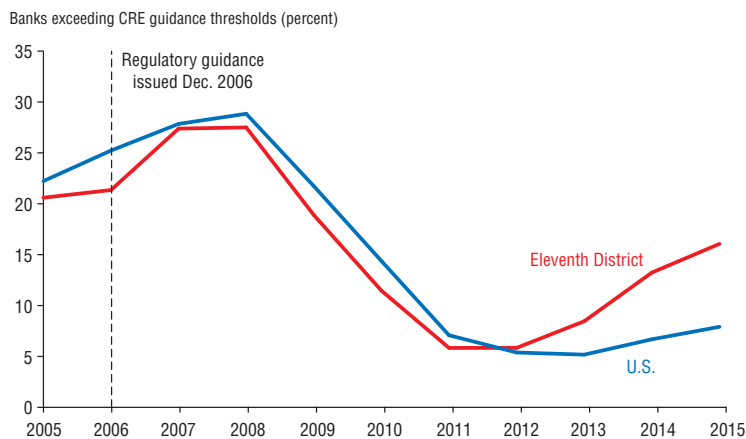
The guidance codifies standards related to leverage, debt service, controls, the borrowing base and borrower repayment capacity, including liquidity, collateral valuation and cash flow. Additionally, banks must treat exploration and production loans as reserve-based loans rather than asset-based loans, as some banks previously treated them.

This is an important distinction because under the formerly used asset-based valuation, a loan can be judged on either the borrower's financials or the collateral backing the debt, while reserve-based loans are primarily graded on the borrower's repayment capacity.¹⁰ Eliminating the value of the collateral backing the loans tightens the loan grading methodology, making it more likely that a loan will be downgraded and a bank will be forced to provision against future losses.

Market participants view the guidance as regulatory tightening. However, this perception more likely stems from the extended oil price decline's erosion of energy loan performance and the resulting regulatory response. One part of the guidance—regarding the treatment of proven undeveloped reserves—represents an easing of standards. The guidance now gives 25 to 50 percent credit for proven undeveloped reserves, which were previously excluded from the loan grading.

Recent energy portfolio trends stand in marked contrast to the initial reaction to falling oil prices. The original assessment was that the decline

Chart 7 Greater Share of Eleventh District Banks Exceed Commercial Real Estate Thresholds



NOTE: Regulatory guidance suggests a potentially significant commercial real estate (CRE) concentration exists if: 1) construction and land development loans equal 100 percent or more of risk-based capital, or 2) if total non-owner-occupied CRE loans equal 300 percent or more of risk-based capital and have grown 50 percent or more over the past three years.

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

would be transitory, with borrowers and lenders well-positioned to weather the storm. Even a relatively sharp decline was expected to cause only limited damage, provided it was a short-term event. Through early 2015, borrowers who faced a loan-to-value squeeze due to falling collateral values were able to access the debt market or pay down their loans. Banks also benefited from their customers' use of hedges that shielded borrowers from falling oil prices.

The impact of the 2008–09 oil price decline—a 65 percent drop—provided the basis for the consensus initial expectations. While noncurrent C&I loans and C&I loan losses both increased in 2009, asset quality bounced back quickly (*Chart 8*). Only seven banks failed during that period.

A year ago, district banks appeared to have a heightened resiliency to lower oil prices due to better risk management, a more diverse economy and an improved regulatory environment.¹¹ But as the oil price decline that began in the second half of 2014 has lingered into 2016, its impact on some banks has become more pronounced.

Continuing Pressure

Last year, the gap between district and nationwide bank performance narrowed notably. At the same time,

district-specific risks posed by CRE and oil prices seemed to gather steam.

Increased CRE lending suggests district banks' risk management should be monitored closely. Commercial real estate tends to follow a boom-and-bust cycle. The drop in energy prices is affecting CRE activity in energy-centric pockets of Texas. Some banks could be negatively affected if the economy slows further and developers struggle to fill projects financed during the CRE boom.

Another district-specific risk comes from persistently low oil prices. The impact could be severe in the energy-intensive regions of the state. Even banks with minimal direct exposure to energy could be adversely affected due to the broader importance of energy in localized markets. Households in energy-dependent regions face increasingly difficult employment and income prospects the longer oil prices remain low, even if they don't directly participate in the energy sector. As their financial situations are stressed, they are more likely to default.

Whether the risks posed by commercial real estate and oil prices will have a large adverse effect on district bank performance remains to be seen, but the banking industry confronts this challenging period in a strong financial position after a robust performance over the past six years.

Klemme is a financial industry analyst and Skelton is a business economist in the Financial Industry Studies Department at the Federal Reserve Bank of Dallas.

Notes

¹ The Eleventh Federal Reserve District consists of Texas, northern Louisiana and southern New Mexico. Data for the Eleventh District banking industry have been adjusted for structure changes such as mergers, acquisitions and relocations.

² The banking industry includes commercial banks and savings and loan associations.

³ Call reports, formally referred to as Reports of Condition and Income, are quarterly regulatory reports containing detailed balance sheet and income statement information.

⁴ CRE loans are loans for construction and land development, loans secured by multifamily property and loans secured by nonfarm nonresidential real estate.

⁵ For a more detailed discussion of commercial real estate trends, see "Texas Office, Industrial Markets Mostly Healthy Despite Energy Bust," by Laila Assanie, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2016.

⁶ "Statement on Prudent Risk Management Practices for Commercial Real Estate Lending," joint press release, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corp. and Office of the Comptroller of the Currency, Dec. 18, 2015, www.federalreserve.gov/newsevents/press/bcreg/bcreg20151218a1.pdf.

⁷ Risk-based capital is used in the calculation of regulatory capital adequacy. For a detailed calculation of risk-based capital, see FFIEC Report Form 31 and Report Form 41, Schedule RC-R, Federal Financial Institutions Examination Council, at www.ffiec.gov/pdf/FFIEC_forms/FFIEC041_201603_f.pdf.

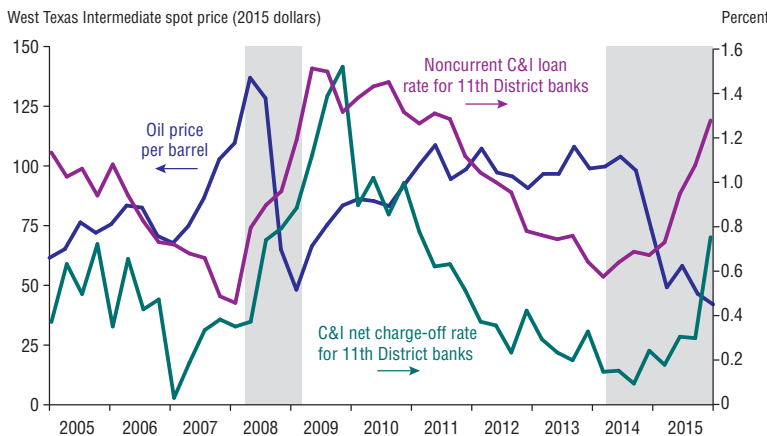
⁸ The policy statement was issued Dec. 6, 2006 (as Supervisory Letter SR 07-1) and can be found at: www.federalreserve.gov/boarddocs/srletters/2007/sr0701.htm.

⁹ See "Oil and Gas Exploration and Production Lending," Office of the Comptroller of the Currency, March 2016, www.occ.treas.gov/publications/publications-by-type/comptrollers-handbook/pub-ch-og.pdf.

¹⁰ Generally speaking, traditional asset-based loans have accounts receivable, securities or another highly liquid asset as collateral. Collateral for reserve-based loans typically has a longer cash conversion cycle. In the case of exploration and production loans, collateral is usually oil reserves in the ground, which are both costly and require experienced operators to obtain.

¹¹ See "Robust Regional Banking Sector Faces New Economic Hurdles," by Kelly Klemme and Edward C. Skelton, Federal Reserve Bank of Dallas *Southwest Economy*, Second Quarter, 2015.

Chart 8 Oil Price Drop Impacts Asset Quality in Eleventh District



NOTE: Shaded areas denote oil price declines.

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

A Conversation with Annise Parker

Playing to Houston's Strengths: Internationalism, Energy, Innovation

Annise Parker's six years as Houston's 61st mayor concluded in January. She was previously city comptroller and served on the city council. Parker, a second-generation Houstonian, earlier spent 20 years in the energy industry. She reviews her time in public service and the challenges Texas' largest city confronts.

Q. Even as a native Houstonian, what was the most surprising discovery you made during your nearly two-decade career as an elected municipal official?

How international Houston is. The globalization of Houston has occurred at a phenomenal rate. It is really clear when you drive down a street with a Hindu temple, Buddhist shrine and African Episcopal church within eyeshot of each other.

I regularly saw parts of Houston I never knew existed. In part because Houston has grown so rapidly that there is more to know and see all the time. Also, because the "built" environment is so easily and routinely erased and replaced.

Q. How much can Houston move beyond its roots as the global energy capital?

We are and will remain the global energy capital. When I graduated from college in the late '70s, the oil and gas industry was 80 percent of the Houston economy. It is 40 percent today. Not because the industry declined, but because the other sectors of our economy have expanded and will continue to do so—some by design and strategic direction and some organically.

Houston focused on its strengths in medicine, the Port of Houston and NASA/aerospace and charted growth strategies in all of them. At the same time, manufacturing has taken off due to the combination of workforce, a positive regulatory climate and affordable land.

Q. What are the greatest challenges facing Houston and how can they be solved?

There are two, and they impact each other. Like many other government jurisdictions, Houston has a large and growing underfunded pension debt. Unless and until this is solved in a way that provides security to existing pensioners and stability and affordability to taxpayers, Houston will struggle with funding both the fundamentals of government and new challenges. Unfortunately, only the Legislature can solve this pension problem, and it has declined either to provide a solution or to allow Houston autonomy.

The other issue is flooding and drainage. Houston was built in a location that flooded long before there was a single human-erected structure here. It will always struggle with water management. Moving water in Houston is like trying to drain a pool table without tilting the table. It is flat, has gumbo clay soil that absorbs water poorly and lies between whatever rain falls in central Texas and the ocean. When the tide comes in, water flowing through Houston stops moving.

We can hold the line by continuing policies that encourage less use of impervious cover, more onsite detention, conservation of open space and sustainable infrastructure. Drainage can be improved by completing more local, state and federal detention and retention projects. This takes time. But it also takes money. ReBuild Houston, our street and drainage funding plan, and the drainage

fee instituted in 2010 will help; the fee added \$100 million more funding a year without increasing debt. But there are several billion dollars' worth of needed projects.

Q. Much has been made about Houston's absence of zoning. To what degree will that be an issue in Houston's future?

I started my adulthood as a believer in zoning. I bought my first house in the city of Bellaire—the largest of nine small, zoned city islands completely surrounded by Houston—and really liked the stability. Later, as a homeowner in Houston and a civic club leader, I campaigned for the last zoning vote. After I became more conversant with the larger city and with the dynamics of city growth and development, I changed my views for both practical and philosophical reasons.

You can't easily retrofit zoning onto the Houston of today. And I saw how our flexibility allowed the tremendous growth we've experienced and the transformation of a declining neighborhood or old warehouse tracts into vibrant urban enclaves without pricing our workforce out of close-in housing. It also helped during the recession of the late 2000s because our property values stayed close to the natural market values.

Q. What are Houston's underutilized assets and how can they be turned into a competitive economic advantage?

Even though the institutions of the Texas Medical Center are one of our largest economic drivers and some of our biggest employers, we can do better. We are performing cutting-edge medicine and excel at patient care. But when a Houstonian develops a new medical device or proves the efficacy of the latest cancer fighting drug, those products need to be commercialized here; both the manufacturing and the venture capital need to be Houston-based.

In a city in which 1-in-4 residents is foreign born, the world is our marketplace. Every language of business spoken anywhere in the world is spoken in Houston by native speakers who have cultural and communal connections



▶ *Houston focused on its strengths in medicine, the Port of Houston and NASA/aerospace and charted growth strategies in all of them.*

into those countries. We must continue to build bridges around the world by expanding our airport offerings with new international flights on both domestic and foreign-flag carriers, work closely with our large and growing consular corps on business development initiatives, and use every tool available—the Export-Import Bank of the United States being one—to assist local companies in doing business overseas.

Q. There has been periodic discussion of NASA consolidating operations. What would a change at NASA mean to Houston?

Being home to NASA Mission Control is important financially, culturally and emotionally, and not necessarily in that order. NASA remains a very large employer, both of government employees and contractors. Our federal government has made massive investments in the physical and intellectual infrastructure of NASA in Houston. We don't want to see that wasted by parceling off work to satisfy short-term political demands.

But it's more than that. Houston and NASA have grown up together in the 50 years of the space program. Astronauts have been our neighbors, friends and inspiration. No community is more passionately committed to supporting space exploration. That's one of the reasons that Houston's designation as a spaceport was important.

The end of the space shuttle program was a blow, and it forced us to better understand the interrelated strengths of aerospace, energy and medicine for our region and to work together more strategically across those sectors.

Q. How did Houston become a different place during your six years as mayor? What were your biggest

accomplishments, greatest disappointments?

We made unprecedented investments in our park system. The Bayou Greenways initiative will expand park space, hike and bike connectivity and help reconnect every neighborhood to the outdoors. A new skate park and Buffalo Bayou Park are magnets for residents and visitors, and the completion of the BMX [bike] park and Emancipation Park will be as well.

No other American city is making more sustained investments in infrastructure. Our water and sewer system is now self-sustained, and we are investing for the future. Rebuild Houston has put us on the right path for street and drainage improvements. Metro has transformed mass transit with the new light-rail lines and a reimagined, data-driven bus route system.

We've created management efficiencies. The city provides higher quality and more consistent services with thousands fewer employees than in the past.

We've been nationally recognized for our 60 percent drop in homelessness and for effectively ending veterans' homelessness. Thinking creatively and collaboratively helped us achieve our sobering center, which frees up jail space, public safety personnel and the municipal court systems.

I'm proud of my time in office, but there were bumps in the road. The single biggest problem we face is the underfunded employee pensions; I tried everything I could think of to change that. I am also still frustrated that Houstonians voted down the use of cameras for enforcement of red-light compliance. I know that red-light running shot up after repeal and fear that people have died as a result. Voter repeal of the Houston Equal Rights Ordinance, HERO, was an embarrassment to our national image as a tolerant and welcoming place and a profound personal disappointment.

Q. During Robert Lanier's term as mayor (1992–98), Houston pursued buses over rail mass transit. With urban sprawl and traffic issues, was that a mistake?

We need both, or rather all of the above, when it comes to transit. We need commuter rail, park-and-ride lots, bus rapid transit, bike lanes and trails, and better freeways also. On my watch, we vastly expanded light rail by adding three new lines to our original line. Rail extended down some of our most heavily traveled bus corridors, so they are less congested, less polluted, the pavement lasts longer and development will cluster along those lines.

But those 23 miles of rail are available to only a tiny fraction of the residents of this region. That would be true even in a traditional city with a downtown ringed by urban and then suburban development. In a city like Houston that has multiple existing commercial nodes and no zoning, flexibility is important. Buses are the workhorses of a transit system.

Q. Houston vs. Dallas—still rivals? What underpins their differences?

The rivalry is more myth than reality, but it is fun to spin it out. The cities have different climates, cultures and business strengths. We compete in professional sports. The important thing is that three of America's top 10 cities [by some measures of population] are in Texas.

Q. What's next for Annise Parker?

I have just been appointed a fellow at the Doerr Institute for New Leaders at Rice University. I'm excited about engaging the students and trust my business and political experience will have some relevance for them. I don't know whether there is another political race in my future, but I intend to keep my options open if the right executive position opens up.

Once-Robust Wage Growth Stops as Texas Economy Slows

By Amy Jordan and Emily Gutierrez

ABSTRACT: Average weekly wages in Texas have dropped below the national average for the first time in four years, part of a broader trend in energy states, where wages are flat to declining.

The energy bust has brought tougher times to Texas and other energy-producing states. The loss of high-wage jobs in energy and manufacturing has been indicative of labor market weakness and stagnating economic activity, causing some state wage measures to fall.¹

Average weekly wages slipped last year in energy states and continued sinking through the first quarter as wage growth accelerated nationally.

After the Great Recession, energy states had enjoyed increasing wages as oil prices recovered and the shale oil boom took hold. But with oil prices dropping 70 percent between June 2014 and February 2016, energy companies and their suppliers began to cut payrolls and staff.

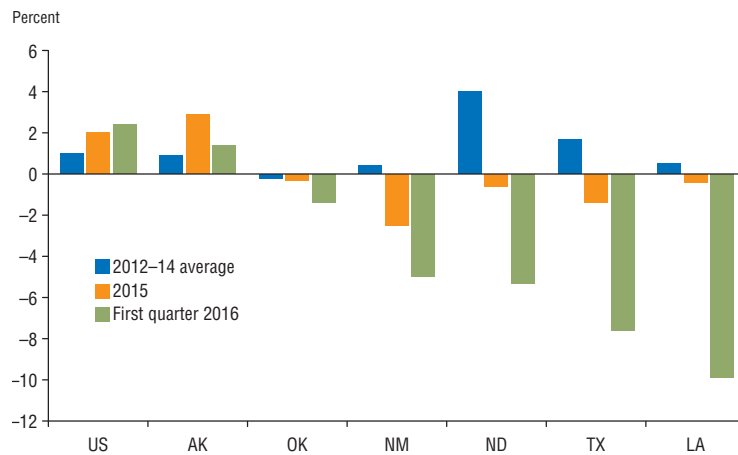
The impact soon spread to other sectors of the economy. Average weekly wages fell in Louisiana, New Mexico, North Dakota, Oklahoma and Texas in

2015 and through the beginning of this year (*Chart 1*). Wage growth continues in Alaska, though it's slower than the national rate.

Texas was second only to Louisiana in the depth of decline, with real (inflation-adjusted) average weekly wages down 7.6 percent in the first quarter. North Dakota, which had the second-fastest job growth rate among the states in 2014 but the fastest decline in 2015, followed Texas with the third-deepest drop in wages in the first quarter. New Mexico was fourth.

In Texas, where the economy continues to expand, albeit slowly, the declining average weekly wage appears to be driven by two factors: a change in the job mix and fewer hours worked. There is little evidence to suggest that wages are falling for a given group of workers, a phenomenon that occurred on a widespread basis during the recession (*see the box "Data Sources Offer Various Measures of Wages"*).

Chart 1 Weekly Wages Decline in Most Energy States



NOTE: Chart shows the change in real average weekly wages in 2015 dollars; 2012-14 bars represent average growth over the three years, 2015 bars represent growth for all of 2015, and first quarter 2016 bars represent annualized growth in the quarter.

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

Data Sources Offer Various Measures of Wages

Wage data come in various forms. The monthly payroll survey (Current Employment Statistics, or CES) from the Bureau of Labor Statistics (BLS) provides average weekly wages. Average earnings for Texas and the U.S. are calculated by multiplying average weekly hours estimates by average hourly earnings estimates.

The Quarterly Census of Employment and Wages (QCEW), also from the BLS, is the source of industry wage data. Though not as timely as the monthly survey data, it is far more comprehensive. QCEW wages are derived by dividing quarterly total wages by average employment during the quarter. That result is divided by 13 (the number of weeks in the quarter).

Wage data include nonwage cash payments such as bonuses and tips but exclude fringe benefits such as employer-paid insurance. The average wage is affected by hours worked and, hence, by the ratio of full-time to part-time workers, as well as the number of individuals in high-paying and low-paying occupations. For example, average weekly wages could decline if the number of employees earning below-average wages increases or the average number of hours worked decreases. These factors combined to depress Texas' weekly wages during the energy bust.

CES data are based on a smaller sample of firms than the QCEW and lack detailed industry-level information. CES data come from a survey of roughly one-third of all nonfarm payroll employees; wages for Texas and the U.S. are for the total private sector and exclude government workers. QCEW data capture a large share of the workforce—covering 96 percent of all civilian workers, including civilian government employees.¹

Note

¹Texas and U.S. earnings from the CES did not exhibit statistically significant seasonality when tested. Seasonality was tested using the X-12-ARIMA monthly seasonal adjustment method from the Census Bureau. The CES data were instead smoothed using a three-month moving average. The QCEW data do exhibit seasonality and were seasonally adjusted. Earnings from both sources have been deflated to real values using the CPI-W, the Consumer Price Index for urban wage earners and clerical workers from the Bureau of Labor Statistics.

Rather, since the beginning of 2015, hourly wages stopped increasing. Hours worked decreased 1.9 percent in 2015, a trend that continued into first quarter 2016, depressing weekly earnings. This is indicative of weaker labor demand and slower economic activity since the oil bust.

Texas Wages Trail U.S.

Texas average weekly wages fell below the national average at the start of the year (*Chart 2*). The U.S. and Texas generally follow the same trend, with earnings falling in economic downturns and rising in expansions. Texas wages are more volatile, however, reflecting three factors: the outsized

influence of energy and its tendency for boom and bust, the state's flexible labor markets and smaller state sample sizes.

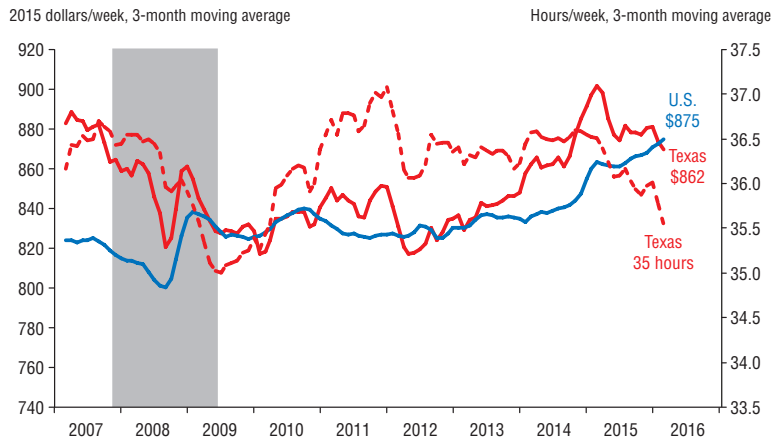
Texas weekly wages fell 1.4 percent over the first three months of the year to \$861 in March, down 5.7 percent from their \$913 peak in February 2015. Wages nationally were \$875 in March. It was the first time since early 2012 that Texas had trailed the U.S. in earnings—the state had exceeded the nation by 2 percent dating back to 2007, and its wages were almost 4 percent higher during the 2007–09 recession.²

Services Offer Stability, Diversity

Texas job creation has been confined to the service sector since the oil

► *Texas job creation has been confined to the service sector since the oil price collapse. The goods sector lost a net 29,000 jobs this year through March.*

Chart 2 | Texas' Weekly Wages Fall Below National Average



NOTE: Shaded bar represents U.S. recession.
 SOURCES: Bureau of Labor Statistics; adjustments by the Federal Reserve Bank of Dallas.

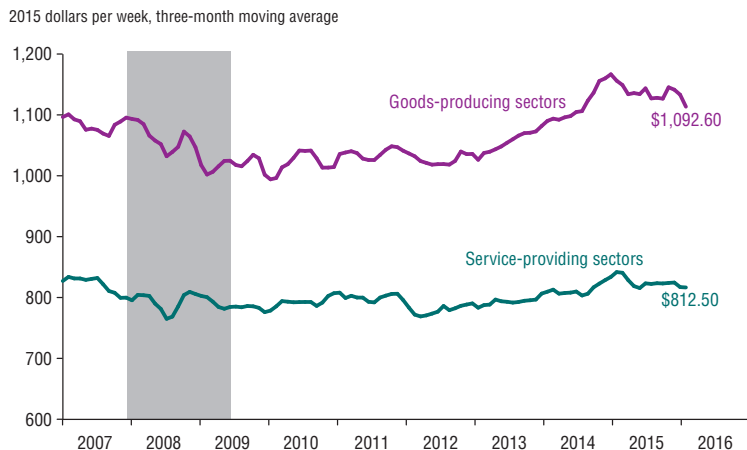
price collapse. The goods sector, which includes manufacturing, construction, oil and gas extraction and energy support services, lost a net 29,000 jobs this year through March after shedding 98,000 positions in 2015. Meanwhile, the private service sector added 54,000 jobs in first quarter 2016 on top of 226,000 in 2015.

Industries that produce goods are more exposed to the business cycle, with more rapid and dramatic employment change, than those providing services. While the service sector may be

the job-creation engine in Texas now, its jobs on average pay considerably less than positions in the goods sector (Chart 3). In March, workers averaged \$813 per week in service industries and \$1,093 in goods industries.

Because the demand for services is more stable, wages tend over time to be half as volatile as those in goods industries. During the 2012–14 shale oil boom, average weekly wages increased 12.2 percent in the goods sector but remained relatively unchanged in the service sector. During the Great Reces-

Chart 3 | Wages Decline in Goods Sector, Hold Steady in Services



NOTE: Shaded bar represents U.S. recession.
 SOURCES: Bureau of Labor Statistics; adjustments by the Federal Reserve Bank of Dallas.

sion, however, wages fell 9.6 percent in the goods sector but only 5.4 percent in services.

Goods sector wages tumbled 5.1 percent during the first three months of 2016 as hours worked fell 5.9 percent. In services, wages were stable and hours worked declined only slightly.

Changing Jobs Composition

While employment in Texas has grown, gains have been in lower-paying industries, and the state has lost higher-paying jobs (Chart 4). Energy has been the top-paying industry; weekly wages averaged \$2,361 in third quarter 2015.³ The industry lost more than 72,000 jobs in 2015—a 23.9 percent reduction—and employment slipped further through first quarter 2016 at an annualized 22.6 percent rate. Energy sector wages declined 3.0 percent year over year in third quarter 2015.

Manufacturing employment decreased 4.5 percent in 2015 and fell an annualized 3.1 percent in first quarter 2016; weekly wages averaged \$1,369 in third quarter 2015, higher than all major service-providing industries except financial activities and information.

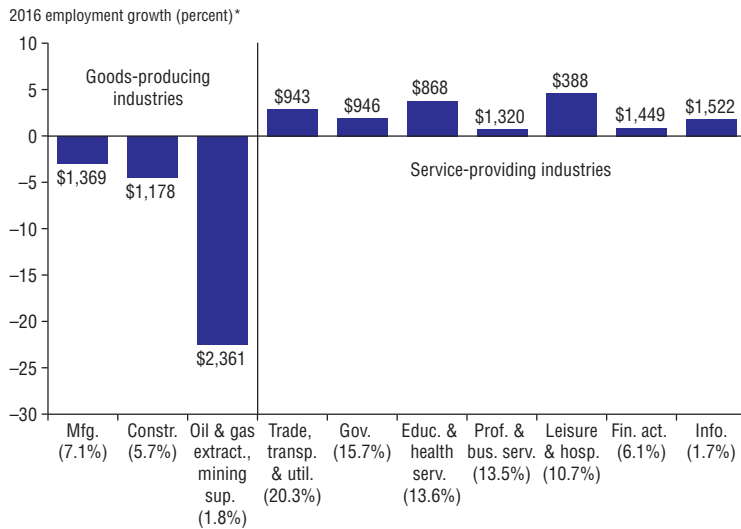
Jobs in lower-paying service fields have been offsetting those lost in high-paying goods areas. It bears noting that while these service sector jobs pay less, they have more desirable nonpay characteristics, such as fewer physical demands and more comfortable working environments, than jobs in energy or manufacturing.

Earnings capture just part of the situation and relying on pay as a primary metric may overstate the negative impact of its decline. Nonpay compensation offsets about half of the decline in pay, according to research from the Federal Reserve Bank of Chicago.⁴

Some workers from the energy and manufacturing industries have found lower-pay, higher-nonpay service sector employment. Typical was a food services industry contact in the Federal Reserve Bank of Dallas' Texas Service Sector Outlook Survey, who said, "Because of the drop in oil-related jobs, our business has been able to find sufficient employees to meet our needs."

Chart 4

Texas Loses Higher-Paying Jobs, Gains Lower-Paying Ones



*Through March 2016, annualized.

NOTES: Shown are nominal average weekly wages in third quarter 2015. Sectors are arranged by share of total Texas nonfarm employment (see percentages in parentheses) in each industry grouping.

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

The leisure and hospitality industry, accounting for the strongest job growth, rose 4.7 percent in 2015 and an annualized 4.7 percent in first quarter 2016. Wages in this segment—traditionally encompassing the lowest-paid workers—averaged \$388 per week in third quarter 2015. Pay has trended higher, increasing 3.9 percent year over year in third quarter 2015—the largest such increase among major service-providing industries.

Demand for leisure and hospitality services rose, in part as consumers directed savings from lower gasoline prices to restaurants and entertainment. Within the leisure and hospitality industry, arts and entertainment wages rose the most, up 7.3 percent year over year to \$642 per week in third quarter 2015. Still, pay within leisure and hospitality remains the lowest among major industries in the state.

Flexible Labor Markets

Wages are more flexible in Texas than elsewhere—they fall more readily in bad times and rise faster in good times. Less labor market regulation, lower minimum wages and relatively little union representation have helped preserve market responsiveness to

economic conditions.

One measure of labor market slack is characterized by the Phillips curve. The economic relationship holds that unemployment and wages move inversely—for example, as unemployment recedes to successively lower levels, pay rises at an increasing rate. Research on the Phillips curve supports the notion that the curve depicting the relationship is steeper in Texas than the nation, meaning wages here react more dramatically to movement in the unemployment rate.⁵

Despite labor shifts, there has been no substantial increase in the state unemployment rate even amid drastically slower economic growth. The Texas unemployment rate, at 4.3 percent in March, compared favorably to the national rate of 5 percent. Overall, state rates from the Bureau of Labor Statistics exhibit little volatility because of data smoothing that tends to suppress volatility.⁶ Thus, it's likely that reported unemployment in Texas will rise. Heightened wage flexibility in Texas helps explain the swift response of wages to slowing economic activity.

Just as wage flexibility allowed pay to be more responsive to the

downside in the wake of the energy bust, it should allow pay to rebound more quickly in Texas when economic activity picks up. This flexibility has also meant that unemployment hasn't become as widespread in the state. In the meantime, the service sector will continue to provide stability.

Jordan is an assistant economist and Gutierrez is a research analyst in the Research Department at the Federal Reserve Bank of Dallas.

Notes

¹ See "Texas Economy Remains Resilient, but Low Oil Prices Loom as Future Risk," by Keith R. Phillips and Christopher Slijk, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2016.

² The decline in Texas' average weekly wage in early 2012 was largely a result of declining average service sector wages.

³ Wages by industry are more lagged than for overall goods and services and are only available through third quarter 2015.

⁴ See "What Does the Changing Sectoral Composition of the Economy Mean for Workers?" by Isaac Sorkin, Federal Reserve Bank of Chicago, *Chicago Fed Letter*, no. 358, 2016.

⁵ See "Wage Flexibility in Texas May Ease Impact of Tighter Monetary Policy," by Anil Kumar, Federal Reserve Bank of Dallas, *Southwest Economy*, Third Quarter, 2015, and "A Closer Look at the Phillips Curve Using State Level Data," by Anil Kumar and Pia Orrenius, Federal Reserve Bank of Dallas Working Paper no. 1409, May 2014.

⁶ See "Spurious Seasonal Patterns and Excess Smoothness in the BLS Local Area Unemployment Statistics," by Keith R. Phillips and Jianguo Wang, Federal Reserve Bank of Dallas Working Paper no. 1305, September 2013.



ENERGY: Wholesale Electricity Prices Turn Negative in Texas

Wholesale electricity prices in Texas have dipped below zero several times since last year. Utility companies actually paid operators of the electricity grid to take power off their hands for hours at a time.

Despite being fairly rare elsewhere, negative prices are becoming more common in Texas. When utilities generate more electricity than is demanded, wholesale prices can turn negative. It often costs a firm more to shut down generators than to pay to get rid of excess power for short periods. Costs to start and stop output are especially high for coal, nuclear and natural gas plants.

Texas electricity companies compete in a deregulated marketplace, and the state often has more capacity than is needed to meet quantities of electricity demanded. When wind generation surges during hours of low demand, wholesale prices can freefall because excess electricity cannot be easily and affordably stored. Negative pricing hours jumped from a recent record of 59 hours in 2015 to 85 through early April this year in Houston, according to data from the Electricity Reliability Council of Texas.

As electricity demand reaches the summer peak, it is unlikely that prices will continue to fall below zero. Nevertheless, new and planned capacity additions—including several wind plants—will put downward pressure on power bills and reduce the likelihood of brownouts this summer.

—Navi Dhaliwal



OUTPUT: Low Oil Prices Depress Energy States' GDP Growth

Energy states posted slower, or even negative, real (inflation-adjusted) gross domestic product (GDP) growth in 2015 after several years of fast-paced expansion during the oil boom. West Virginia experienced a 2.1 percent year-over-year output decline through third quarter 2015, while North Dakota slid 2.0 percent.

Other states continued growing but at a significantly slower pace. Wyoming's GDP growth fell almost 6 percentage points to 0.7 percent, and Oklahoma declined 3.6 percentage points to 0.4 percent, according to the Bureau of Economic Analysis.

Texas' real GDP expanded 2 percent year over year through third quarter 2015, falling just short of the comparable 2.1 percent U.S. growth rate and less than half of the state's 2014 performance of 4.5 percent.

Texas' large diversified economy has insulated the state against the energy shock's full impact. For example, Texas and North Dakota had similar exposure to mining—14 percent and 16 percent of GDP—before the energy collapse. However, North Dakota's mining sector employed far more of the state's workers—6.5 percent versus 2.7 percent for Texas in 2014—which deepened North Dakota's downturn. Moreover, severance taxes from oil and gas extraction made up 54 percent of North Dakota taxes versus 11 percent for Texas, according to the 2014 Annual Survey of State Government Tax Collections.

—Sarah Greer



EDUCATION: Texas Ranks High in H.S. Graduates, Lags in College Prep

Texas' public school graduation rate in 2014 was 88 percent, ranking third nationally and well above the U.S. average of 81 percent. The state led in Hispanic graduation rates, 86 percent, and ranked second in its shares of black students, economically disadvantaged students and students with disabilities graduating. These rates for Texas have steadily increased in recent years.

State officials have credited their success in raising graduation rates to reforms that include teacher incentive pay, school supply reimbursement, teacher mentoring, higher testing standards for students and more rigorous teacher performance evaluations.

Critics claim that the increase in graduation rates may be misleading because students who are likely to drop out are overrepresented among those pupils counted as transferring to private schools or home schools or leaving the country. The current measure excludes these students, pushing up graduation rates.

Higher graduation rates do not necessarily equate to increased college readiness. Texas ranked below the 2014–15 national average on the SAT (Scholastic Aptitude Test), according to the College Board, which administers the exam. Texas also ranked slightly lower than the nation on the ACT (American College Testing) benchmark, which students should meet or exceed to be considered prepared for college.

—Emily Gutierrez

Central American Population Soars in Texas, U.S.; Migrant Profiles Evolve

By Emily Gutierrez and Pia Orrenius

Immigration from Central America is on the rise at a time when migration from Mexico is declining (*Chart 1*).

The Central American population in the U.S. grew 61 percent from 2000 to 2014, reaching nearly 3.3 million.¹

In Texas, the Central American population more than doubled, rising from 185,000 in 2000 to about 400,000 in 2014. By comparison, while the Mexican population is much larger—11.7 million in the U.S. and 2.5 million in Texas—it has grown far more slowly since 2000, rising 28 percent in the U.S. and 35 percent in Texas.

Central American and Mexican immigrants are similar in many aspects but differ in their motivation for migrating. Drug-related violence and widespread insecurity has played a much larger role in immigration from Central America, as evidenced by the large shares of those who seek asylum upon arrival in the U.S.

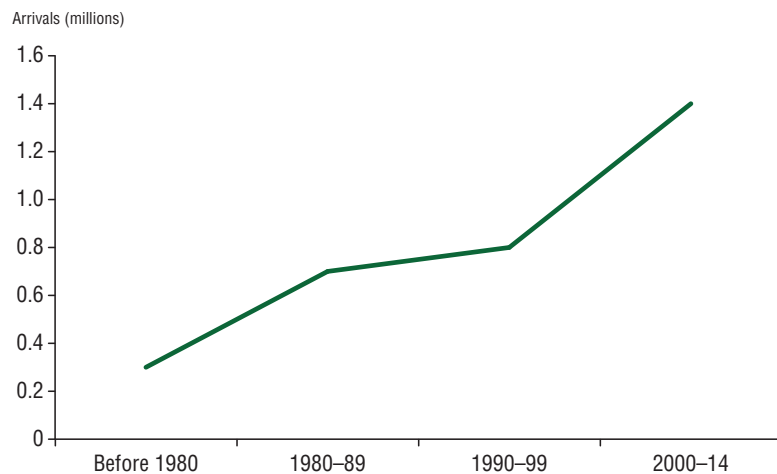
Mexican immigrants, on the other hand, typically migrate for economic reasons and have arrived in much smaller numbers since the 2008–09 recession.

The desperate circumstances for recent Central American migrants are apparent in the data. Women and children make up an increasing share of new arrivals. Border Patrol data indicate there was a 103 percent increase in the number of Central American migrants who arrived either in family units or as unaccompanied minors from October 2015 to March 2016, compared with the year-earlier period.²

Less-Educated Migrants

Recent Central American migrants are very different from earlier groups. They are much less likely to have legal status than prior arrivals, many of whom received asylum or temporary protected status due to the 1980s civil wars. They also tend to be less fluent in English.³

Chart 1 Central American Immigration Picks Up After 2000



SOURCE: 2011, 2014 American Community Survey.

Relative to the population of Central American immigrants in 2000, current arrivals are less likely to have a high school diploma or college education; in fact, 17 percent of recent Central American migrants have any college education versus 26 percent of all Central American immigrants in 2000.

While employment rates have risen among recent Central American migrants compared with their 2000 counterparts, their occupational distribution remains skewed toward low-wage work in sectors such as construction and food services. The median wage among Central American immigrants fell over this time period, likely as a result of the 2008–09 recession, and remains below 2000 levels in inflation-adjusted terms.

As Central American migrants have become less skilled than those who arrived earlier, they also compare less favorably to Mexican migrants, who reached or surpassed their Central American counterparts in wages and English proficiency between 2000 and 2013.

The proportion of Central American migrants in the U.S. proficient in English declined in 2013 to 56 percent, while the corresponding share among Mexicans rose to 58 percent.

Given deteriorating home-country conditions, more Central American migrants are applying for asylum as they reach the U.S. border. El Salvador, Guatemala and Honduras ranked in the top 10 countries for asylum grants in 2014. Of the 8,775 asylum applications approved, citizens of El Salvador, Guatemala and Honduras made up nearly 6 percent.⁴

Notes

¹ Census 2000 and American Community Survey 2014.

² Comparing October–March 2016 to the same period in 2015. U.S. Border Patrol data available at: www.cbp.gov/newsroom/media-resources/stats?title=Border+Patrol.

³ See “Central Americans in the U.S. Labor Market: Recent Trends and Policy Impacts,” by Pia M. Orrenius and Madeline Zavodny, CANAMID, Policy Brief Series, PB03, October 2015.

⁴ Department of Justice: FY 2014 Statistics Yearbook.

Houston Grinds to a Halt as Oil Industry Declines

By Jesse Thompson

ABSTRACT: Houston, the nation's energy capital, is in the grips of a slowdown that may presage a local recession. Strength in health, leisure and hospitality, and retail services has helped offset weak oil industry performance.

Fears of recession have persisted in Houston since the oil boom turned to bust at the end of 2014. The price of benchmark West Texas Intermediate crude oil dropped 70 percent by the beginning of this year—a decline as large as the one in the mid-1980s that contributed to Texas' prolonged recession.

While Houston doesn't produce much oil and gas directly, it is regarded as the corporate center of the oil and gas industry, including principal offices of ExxonMobil, Baker Hughes and Anadarko Petroleum. It is also the national center for refining and petrochemicals, the so-called downstream energy industry.

Employment contracted slightly during the 12 months ended in March compared with 4 percent annual growth during parts of the shale-boom years (*Chart 1*). While Houston overall managed to tread water in 2015, this year may prove a greater challenge with several forecasts of continuing contraction.

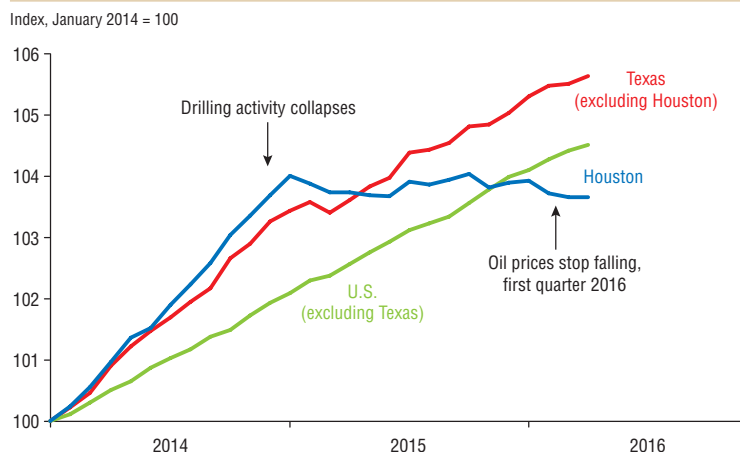
Running Out of Steam

It's unclear whether Houston has entered a recession, although it's a close call, according to the Houston Business-Cycle Index, which reflects employment, unemployment, real retail sales and wages.¹ The index is the broadest and timeliest measure of economic activity available and suggests that economic activity contracted during second quarter 2015, returning to growth briefly before retreating again (*Chart 2*).

Does that constitute a recession? At the national level, it takes the dating committee at the National Bureau of Economic Research an average of 11 months after a turning point to define a recessionary period with certainty, owing to data revisions and updates that affect how recent economic activity is viewed. Thus, determining whether the Houston economy has contracted—as viewed through the business-cycle index—may take time to allow for further data revisions.

Houston experienced an energy bust during the Asian financial crisis of

Chart 1 | Houston Job Count Plateaus in Oil Bust



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

1997–98. Oil prices and drilling activity declined, but the U.S. economy kept growing while emerging markets weakened and the dollar strengthened. The Houston Business-Cycle Index during that period indicated that Houston’s economy screeched—briefly—to a halt, then expanded again. This time, the U.S. isn’t growing as strongly, and the downturn in energy is more far more pronounced—the largest since the 1982–86 oil collapse.

While Houston is getting little help from the broader U.S. and global economies, the region is benefiting from a more diverse economy than in the past.² (See “On the Record,” a conversation with former Houston Mayor Annise Parker, page 8.)

The construction of new petrochemical plants, a growing health services industry and resilient demand for leisure and hospitality were sources of job growth in 2015. Rather than plunging lockstep with the number of active oil and gas drilling rigs, metropolitan area employment flattened. Houston lost a net 718 jobs, about 0.02 percent of total employment, from December 2014 through March 2016 (Table 1).

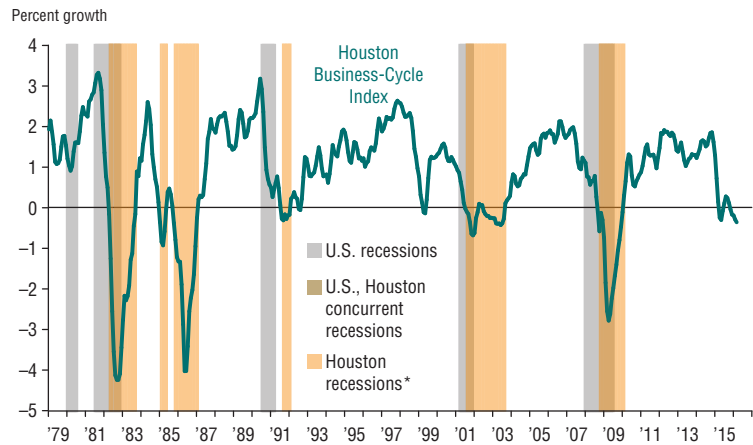
Oil Bust Impact

While it appears oil prices found a soft bottom between \$25 and \$35 per barrel in first quarter 2016, it isn’t clear that the industry’s downturn has reached its nadir; more job losses from distressed energy companies are on the way. Even at \$45 per barrel, oil prices are insufficient to cover typical production costs in the region.

Core energy-related industries (oil and gas extraction, support activities for mining, certain types of manufacturing, and selected scientific and technical services) lost 55,000 jobs in Houston between their peak in December 2014 and March 2016. Manufacturing (fabricated metals and mining machinery) was particularly hard hit, registering many more job losses than other energy-related sectors in the metro area.

The supply chain for oil and gas companies’ capital expenditures—equipment, pipe, chemicals and soft-

Chart 2 | Houston Economy Falters in 2016



*Beginning/end of Houston recessions defined as two consecutive and exclusive three-month periods of contraction in the index.

NOTE: Chart depicts the three-month percent change in the three-month moving average.

SOURCE: Federal Reserve Bank of Dallas.

Table 1 | Houston Loses Jobs Since Bust Began

Industry	December 2014 to March 2016
Manufacturing (7.7%)	-31,213
Mining (3.1%)	-19,698
Professional & business services (15.6%)	-8,118
Wholesale trade (5.7%)	-2,697
Transportation, warehousing, utilities (4.6%)	-1,692
Construction (7.1%)	90
Information (1.1%)	117
Other services (3.5%)	177
Federal government (0.9%)	195
Private educational services (1.9%)	2,423
Financial activities (5.1%)	2,922
State & local government (12.1%)	10,241
Retail (10.3%)	12,232
Health (10.7%)	16,320
Leisure & hospitality (10.5%)	20,780
Total change	-718
March 2016 total job count	2.98 million

NOTE: Numbers in parentheses are percent of total employment.

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

ware—runs through Houston’s manufacturing and scientific and technical industries. Nationally, those purchases are projected to fall roughly 40 percent in 2016 after a similarly large decline in 2015, as firms attempt to retain cash and outlast low oil and gas prices.³

Furthermore, many companies providing services, such as staffing firms, are not included in the core energy-related industries. The employment services subsector lost more than 8,700 jobs from December 2014 to March 2016 and was the main driver behind declines in professional and business services jobs.

Many energy-dependent companies won’t survive this downturn. While timely and comprehensive data on bankruptcies is lacking at the metro level, the Administrative Office of the U.S. Courts in Houston reported 79 additional business bankruptcies in 2015 from 2014 levels, covering all businesses, not just energy. It marked the first year-to-year increase since 2009.

The law firm Haynes & Boone counted 12 oil and gas company bankruptcy filings in 2015 in Texas’ federal court southern district, which includes Houston, out of 81 nationwide (14 percent).⁴ In just the first quarter of 2016, seven oil and gas companies sought bankruptcy protection in the southern district out of 27 nationally (26 percent).

While there is no clear indication when oil prices, drilling activity and, ultimately, energy sector employment, will recover, Department of Energy and the International Energy Agency projections suggest that high global crude oil inventories won’t ease this year.⁵

In the meantime, low oil and gas prices that have led to pain in the western half of the Houston metropolitan area—where many oil and gas drilling companies are concentrated—are benefiting the eastern half of the city where refineries and petrochemical companies are located.

Mixed Construction Signals

Construction added 5,500 jobs in Houston from December 2014 to October 2015, with much of it from chemical plant construction, along with some from commercial and residential real estate activity. But recent sharp drops in construction jobs have virtually erased those gains, leaving Houston with a net gain of 90 positions during the oil bust.

Construction declines have come amid a historic surge in activity related to the downstream energy sector. Expanding U.S. natural gas production over the past six years has crushed the current and expected future price of domestic natural gas relative to the

price of crude oil. That’s a boon to refiners and petrochemical producers in the United States—especially Gulf Coast petrochemical enterprises—that benefit from an unexpected era of cheap raw materials.⁶

The downstream energy industry responded with a surge in construction—266 new chemical plants and related capital projects announced since 2013, at an estimated value of \$164 billion. Roughly one-third of that planned construction (\$55 billion) is designated for the Houston area.

The bulk of those projects are to be completed between the second half of 2016 and 2018, but construction could continue until 2021, keeping thousands of construction workers on the job.⁷

Still, some construction has been delayed or deferred, and a few projects will likely be canceled or abandoned as competitors in China and the Middle East invest in capacity and as expectations for future oil prices evolve. As the first round of new Houston-area plants is completed later this year and in 2017, blocks of construction jobs will disappear.

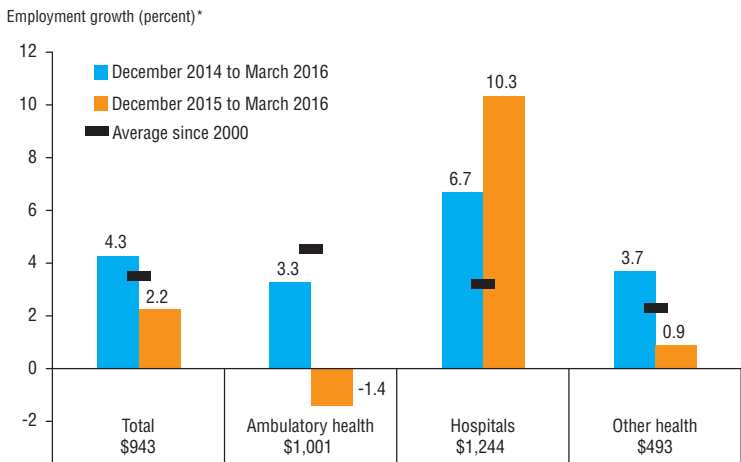
The oil bust has also deflated commercial office and residential real estate—particularly in the north and western Houston submarkets that are most closely dependent on energy. Commercial office space under construction has begun to fall as backlogs disappear and as energy companies sublease now unused office space and new project completions push up the direct vacancy rate. Concessions on rents for offices and apartments are increasing.⁸

In the single-family market, real estate consultant Metrostudy reported a 10 percent drop in construction starts in first quarter 2016; existing-home sales and prices are also slipping, with higher-priced housing most affected.

Health Industry Pickup

As energy-related businesses faltered, several service sectors picked up. Health employment has grown at a 4.3 percent annual rate since 2014, adding 16,300 jobs in Houston. The most recent data suggest that growth is

Chart 3 Private Health Employment Growth Largely Cools



*Seasonally adjusted and annualized.

NOTE: Dollar figures are average private weekly wages in third quarter 2015.

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

slowing, except for hospitals (*Chart 3*).

The health care sector is in a long-term expansion, the result of a growing and aging population and a byproduct of the Affordable Care Act. Medicaid enrollment grew in Houston, even though the state declined to expand program eligibility as envisioned in the federal law. Greater clarity and certainty also emerged in the policy environment for hospitals, and the percent of Houston's population covered by private insurance also rose—all positives for demand for health services and health employment.⁹

Dining Out, Shopping

Leisure and hospitality has provided an additional buffer. It has added more jobs in Houston since the oil bust began than any other sector—20,800 in net new hiring since the collapse took hold in December 2014—a 5.7 percent annual growth rate.

Food services and drinking establishments accounted for most of the jobs, although the hospitality industry has also grown. There were 24 hotels under construction in the Houston area, accounting for more than 4,000 rooms and cumulatively worth an estimated \$811.6 million in first quarter 2016.¹⁰

However, leisure and hospitality is a relatively low-paying industry, with an average weekly wage of \$445 in Houston during fourth quarter 2015. (The metro-area average weekly wage was \$1,307.) Consequently, while leisure and hospitality has contributed more than any other sector to net employment growth since 2014, the impact on total wages has been modest. (See *"Once-Robust Wage Growth Stops as Texas Economy Slows," page 10.*)

Retail services, which added about 12,000 jobs between December 2014 and March 2016, accounts for another pocket of private sector growth. Gains were concentrated in food and beverage stores and in general merchandise.

Leisure and hospitality and retail are likely to feel the energy sector woes in 2016. With Houston's job creation engine sputtering, population growth is likely slowing, and the loss of high

wages in the energy sector is expected to depress demand. Anecdotally, there are already signs of a slowdown and fewer customers buying high-priced items.¹¹

Bleak Outlook

The Houston outlook is deteriorating as the oil bust matures and energy firms encounter a more challenging financial environment. The unemployment rate rose from 4.3 percent in December 2014 to 5 percent in March 2016. At the same time, the size of the area labor force has continued trending up, though at a much slower pace than during the boom.

With Houston's core energy-related industries still hemorrhaging jobs, construction activity beginning to decline and layoffs suppressing demand for goods and services, Houston's economy will likely weaken further this year.

Several forecast models and scenarios from the Federal Reserve Bank of Dallas and the Institute for Regional Forecasting at the University of Houston are predicting total jobs in the Houston metropolitan statistical area will contract by less than 1 percent this year—what would be the first December-to-December net job loss since the Great Recession.¹²

Thompson is a business economist in the Research Department in the Houston branch of the Federal Reserve Bank of Dallas.

Notes

¹ Houston—The Woodlands—Sugar Land Business-Cycle Index, www.dallasfed.org.

² "Diversified Houston Spared Recession ... So Far," by Jesse Thompson, Federal Reserve Bank of Dallas, *Southwest Economy*, Third Quarter, 2015, www.dallasfed.org/assets/documents/research/swe/2015/swe1503f.pdf.

³ "Capital Expenditures to be Squeezed Further in 2016," by Conglin Xu, *Oil and Gas Journal*, March 7, 2016.

⁴ "Oil Patch Bankruptcy Monitor" and "Oilfield Services Bankruptcy," Haynes and Boone LLP, April/May 2016, www.haynesboone.com.

⁵ "Hopes and Fears About Oversupply Whipsaw Oil Prices," by Navi Dhaliwal and Michael Plante, Federal Reserve Bank of Dallas, *Quarterly Energy Update*, First Quarter, 2016, www.dallasfed.org/research/energy/2016/en1601.cfm.

⁶ "Shale Revolution Feeds Petrochemical Profits as

Production Adapts," by Jesse Thompson, Federal Reserve Bank of Dallas *Southwest Economy*, Fourth Quarter, 2013, www.dallasfed.org/assets/documents/research/swe/2013/swe1304g.pdf.

⁷ Baytown development district; Institute for Regional Forecasting.

⁸ "Texas Office, Industrial Markets Mostly Healthy Despite Energy Bust," by Laila Assanie, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2016, www.dallasfed.org/assets/documents/research/swe/2016/swe1601g.pdf.

⁹ "Houston Metro Area Uninsured Rate Down from 2013," Census Bureau, Sept. 17, 2015, www.census.gov/newsroom/press-releases/2015/cb15-r08.html; "Even Without Expansion, Texas Medicaid Rolls Rise," by Brian M. Rosenthal, *Houston Chronicle*, July 16, 2014; "What's Fueling \$5.5 Billion in Houston Developments," by Cara Smith, *Houston Business Journal*, April 27, 2016.

¹⁰ CBRE EA/Dodge Data and Analytics Pipeline database.

¹¹ "Falling Oil Prices Starting to Affect Woodlands

Economy," Julie Butterfield, *Community Impact Newspaper*, Dec. 9, 2015, <https://communityimpact.com/houston/the-woodlands/economic-development/2015/12/09/falling-oil-prices-starting-to-affect-woodlands-economy/>.

¹² "Houston Absorbs the Big Blow from Oil in 2015: Who Shares the Pain in 2016?" by Robert W. Gilmer, C.T. Bauer College of Business, University of Houston, May 17, 2016, www.bauer.uh.edu/centers/irf/docs/Spring-2016-Symposium-Slide-Show%20PDF.pdf.

SNAPSHOT

El Paso Job Growth at Postrecession High

El Paso boomed in 2015, posting its highest rate of job growth since before the Great Recession while the rest of the state slowed markedly. El Paso continues to outperform the state but has decelerated somewhat, with employment declines in the goods-producing sector outweighed by job creation in the services sector.

The El Paso Business-Cycle Index expanded an annualized 1.8 percent in April. Job creation and a decline in the unemployment rate have contributed to business-cycle gains.

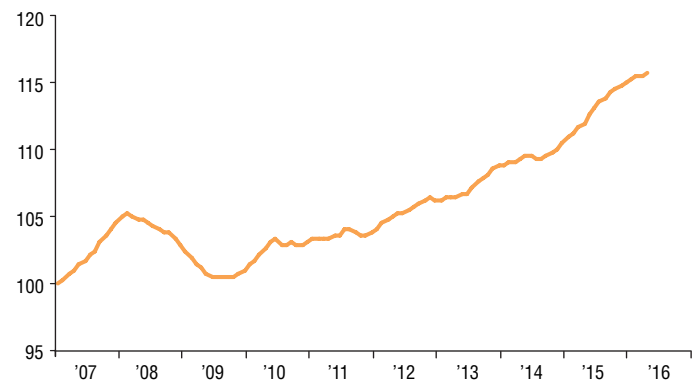
El Paso employment grew at an annualized monthly rate of 2.1 percent in April. Job growth was mixed across industries. Leisure and hospitality gained the most at 14.1 percent. Trade, transportation and utilities continued to be fast growing, rising 11 percent. The increases may be linked to strong manufacturing activity south of the Rio Grande.

—Adapted from El Paso Economic Indicators,
Federal Reserve Bank of Dallas, May 2016

Chart
1

El Paso Business-Cycle Index Steadily Increases

Index, January 2007 = 100*



*Monthly, seasonally adjusted.

SOURCE: Federal Reserve Bank of Dallas.

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 on the Dallas Fed website, www.dallasfed.org.

Federal Reserve Bank of Dallas
2200 N. Pearl St., Dallas, TX 75201

Mine Yücel, *Senior Vice President and Director of Research*

Pia Orrenius, Keith R. Phillips, *Executive Editors*

Michael Weiss, *Editor*

Kathy Thacker, *Associate Editor*

Dianne Tunnell, *Associate Editor*

Ellah Piña, *Graphic Designer*

