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.

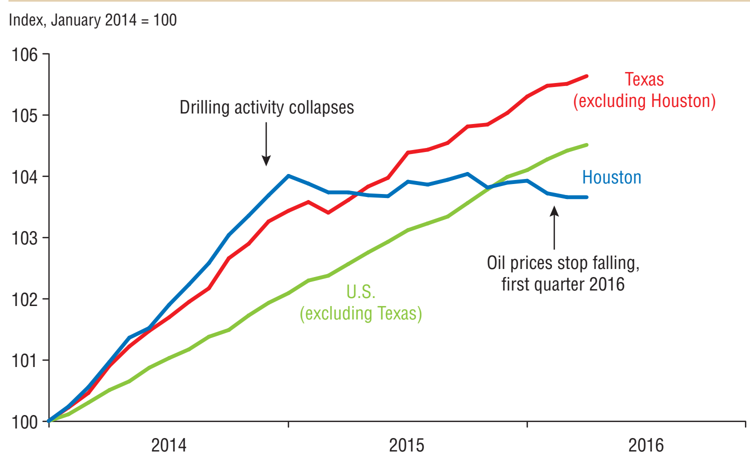
Running Out of Steam

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*).

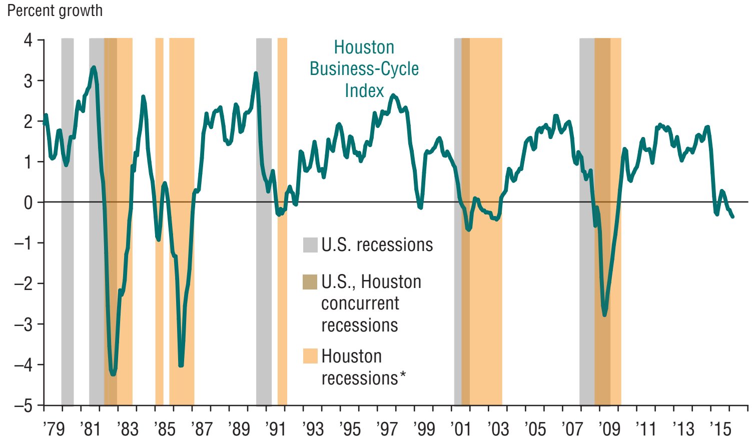
Oil Bust Impact

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.

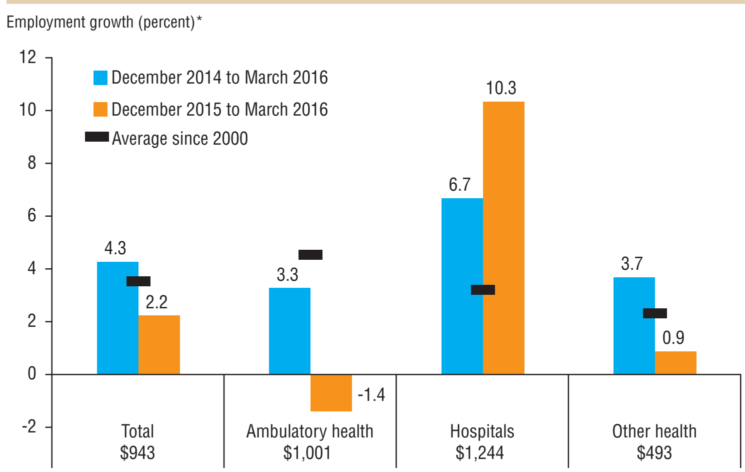
The oil bust has also deflated commercial office and residential real estate—particularly in the north and western Houston submarkets that are most closely dependent on energy. Commercial office space under construction has begun to fall as backlogs disappear and as energy companies sublease now unused 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]

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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.