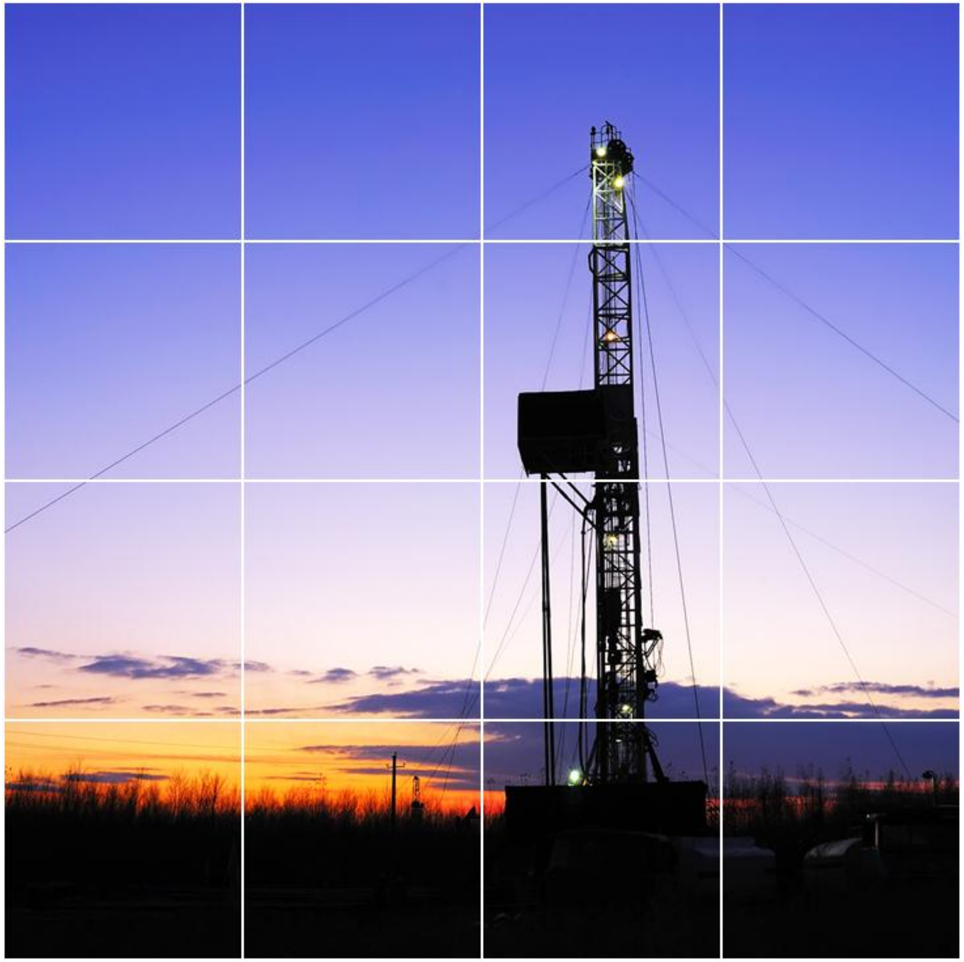


What does the drop in oil prices mean for the North American economy and office markets?

December 2014

The two cents

- Oil prices have fallen off a cliff and energy producers across the globe are starting to panic.
- Lower prices will likely extend into 2015 due to the surplus of existing stock, little slowdown in production and weaker demand (slower economic growth in China and less oil consumption in Europe).
- Bad news for energy companies and the downstream industries that support them- think lower profit margins, high levels of debt, cutbacks on capital spending and reductions in headcount.
- The mood will change in the energy corridor cities which have enjoyed strong growth the last couple of years. Houston, Calgary, Fort Worth and Denver have been outperforming the U.S. office market. In 2015, these markets will move closer to the average as leasing activity slows and energy related companies give space back.
- Low gas prices are good news for the U.S. economy and consumers. In fact, lower prices act as an economic stimulus for consumers (great news for retail) and create substantial savings for manufacturing and heavy users of oil (i.e. airlines).
- So, we expect demand for real estate in the energy markets to weaken and landlords and developers in these locations to feel pressure in 2015 to secure and retain occupancy. However, the benefit of sustained low oil prices will fuel (pun intended) retail, residential, industrial and office demand across the U.S. overall to a larger degree.

The situation

Oil prices are below $65 a barrel for the first time since 2009. Considering that prices climbed above $100 per barrel in June, this is a dramatic decline.

Why?

Supply-side causes are the primary issue.

Weaker demand

Macroeconomic data indicates weaker demand in Europe and Asia.

- Japan's Q3 GDP contracted by 1.9% y-o-y.
- China grew at its slowest pace in five years in Q3 due to slumping real estate market and weak domestic demand and industrial production.
- In Europe, total petroleum consumption fell by one million barrels per day from 2009 to 2013 and has dropped farther in 2014.

The number of new well permits in the U.S. fell by 37% from October to November; new permits indicate drilling activity 60-90 days out.

Supply surplus

There are roughly 3 million more barrels a day now than in 2011 in the global oil market.

- U.S. oil production has increased 77% since 2008 to almost nine million b/d.
- Canada has added an additional 1.5 million b/d from tar sands and Russia has increased crude oil production too.
- Libya has ramped up production again following a decline in 2011 due to civil war.

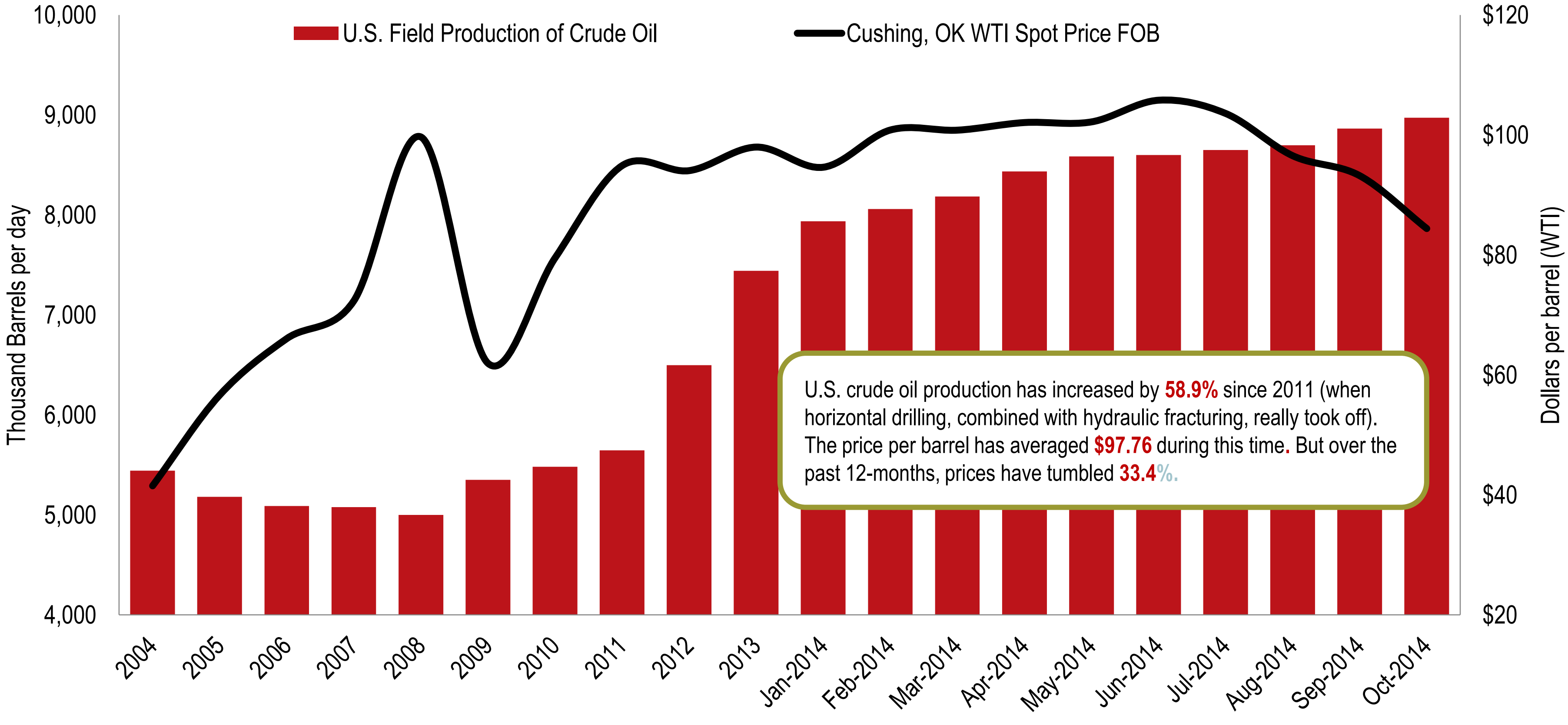
Energy efficiency

Tougher fuel standards and more urban, less auto-dependent living lowers consumption.

- The sales-weighted fuel economy of vehicles in the U.S. increased from 20.8 miles per gallon in 2008 to 25.3 miles per gallon in 2014.
- Younger Americans are driving fewer miles.
- The European Union, China and India have all recently adopted even tougher fuel standards.

The U.S. has reduced its consumption of oil by 3.3 mil b/d since 2007. This is why strong demand from China is so important.

U.S. crude oil production increases steadily, while prices fall



Source: JLL Research, EIA.
Notes: Chart data runs through Oct 2014. But 12-month price cut data reflects December 2013 to December 2014.

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Importance of pricing

Nov 27: the 12 OPEC nations that produce 40% of the global oil supply decided to maintain an output ceiling of 30 mil b/d, despite calls from some of its members to reduce production. Some view the decision as a test to see the willingness of America shale-oil producers to keep drilling wells.

Cheaper oil is bad for big oil exporters and benefits net oil importers. This is good news for countries like China, Japan, India, Germany and France (importers); bad news for Saudi Arabia, Russia, Iran, Venezuela and the United Arab Emirates (exporters).

June 2014

Canadian oil-sands producers feel pressure. The break-even price for new oil-sands surface mines is among the most expensive in the world, at around **$85** a barrel

Mid-cycle breakeven costs for oil producers in North Dakota's Bakken are about **$69** a barrel

80% of new tight-oil production in 2015 would be economic between **$50 - $69**

2009 was the last time prices hit **$50**

Saudi Arabia needs Brent oil prices to exceed **$91** a barrel to pay its bills. The biggest OPEC producer, with almost $800 billion in cash reserves, wants to maintain market share and test the break-even points of U.S. shale oil

The break-even for American oil has been falling as fracking techniques are refined. The U.S. is producing unconventional oil with acceptable returns in the range of **$70** a barrel for oil, less than most OPEC nations can sustain

Where we are today

OPEC will start to panic

In the Eagle Ford near Houston mid-cycle breakeven costs for oil producers is **$50**

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The impact on

The U.S. economy

- The forecasted impact of lower oil prices on GDP in 2015 range from 0.2 to 0.4 percentage points.
- Job cuts in the key oil and gas production industries should have a minimal impact on the broader economy. This sector has added about 5,000 jobs per month over the past four years.
- Low oil prices benefit major oil consumers like Goodyear, UPS, General Motors, American Airlines and Carnival.
- Retail sales climbed 0.7% in November from a month earlier, the strongest gain in eight months driven by sliding gas prices boosting discretionary income during the holiday season.
- The Fed may keep interest rates low longer as raising them would negatively impact energy companies (highly capital intensive and sensitive to borrowing costs) and lower energy costs help keep inflation in check.

Energy companies

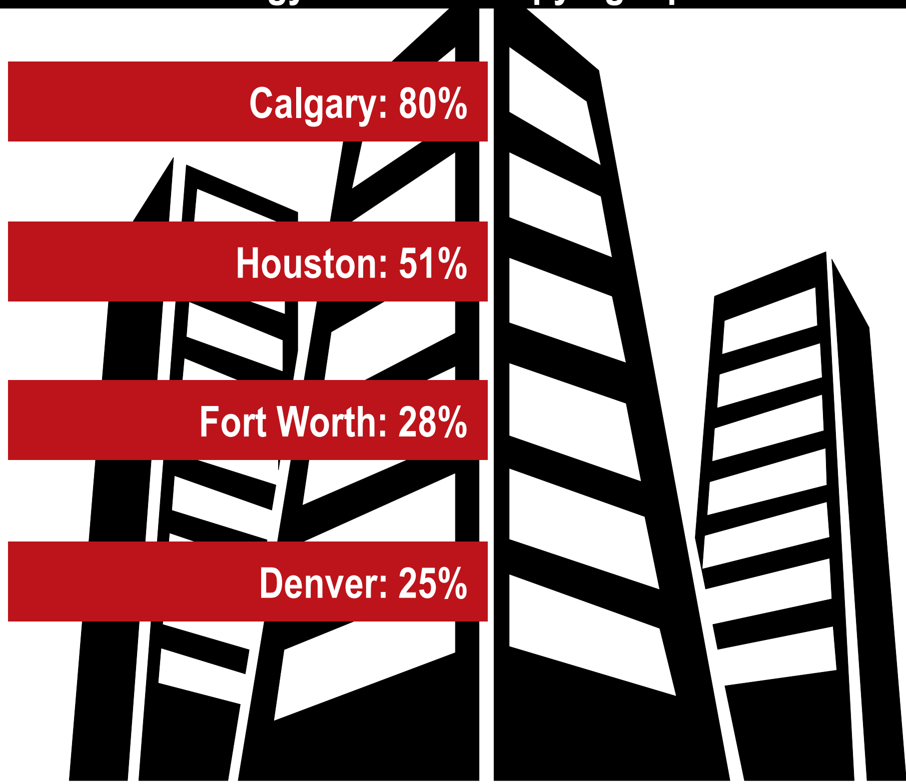
- Energy companies will reconsider their investment appetites given the potential for lower oil prices over the coming year. Goldman Sachs estimates an energy investment headwind of around 0.1 percentage points from current levels.
- Big energy companies will be forced to cut back on capital spending and reduce 2015 exploration budgets.
- Profit margins will be squeezed at the largest energy companies, which spend three times more per barrel than smaller rivals that focus on U.S. shale, which is easier to extract
- Low oil prices will drive down production in higher-cost fields like Canada’s Alberta oil sands.
- Low prices will put some small and medium-size companies into a “distressed situation” that forces them to either unload property to raise cash or sell out completely.

Consumers

- Prices of regular gasoline have fallen from a high of \$3.68 in June to around \$2.73 according to AAA (savings of \$0.95).
- The U.S. Federal Highway Administration puts the annual U.S. household savings of a 50-cent drop in regular gasoline at \$500 (\$40 per month)
- The drop in gas costs amounts to a \$75 billion tax cut for consumers according to Goldman Sachs.
- Consumers will likely spend some of the extra cash during the holiday season but the impact of the energy bonus will largely be felt in 2015.
- Entertainment, restaurants, furniture and other home related items and discount retailers are positioned to benefit the most.
- Lower-income households are the most sensitive to energy prices. Households earning less than \$50,000 annually spent around 21% of their after-tax income on energy in 2012.

North America office markets most vulnerable to oil prices

Percent of energy tenants occupying top-tier CBD market



See how they compare to U.S. overall

	Calgary	Houston	Fort Worth	Denver	U.S. average
% employment growth	8.4%	11.1%	5.5%	8.9%	**5.1%**
Net absorption as % of inventory	3.7%	7.2%	3.1%	3.2%	**2.7%**
Office rent growth (%)	-3.4%	19.3%	3.7%	9.3%	**7.1%**

Source: JLL Research, data reflects change from 2012 to Q3 2014

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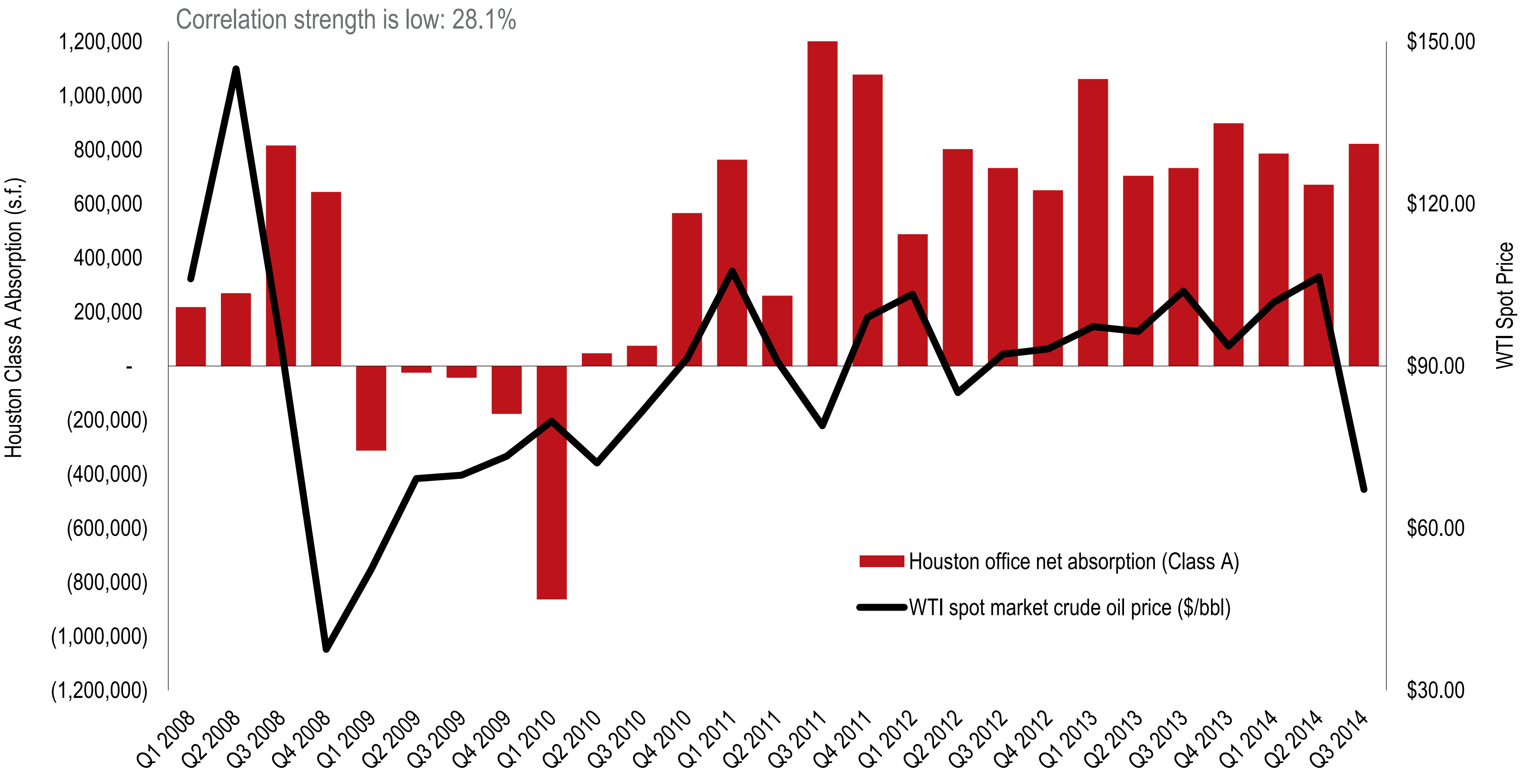
How has Houston's office market typically reacted to falling oil prices



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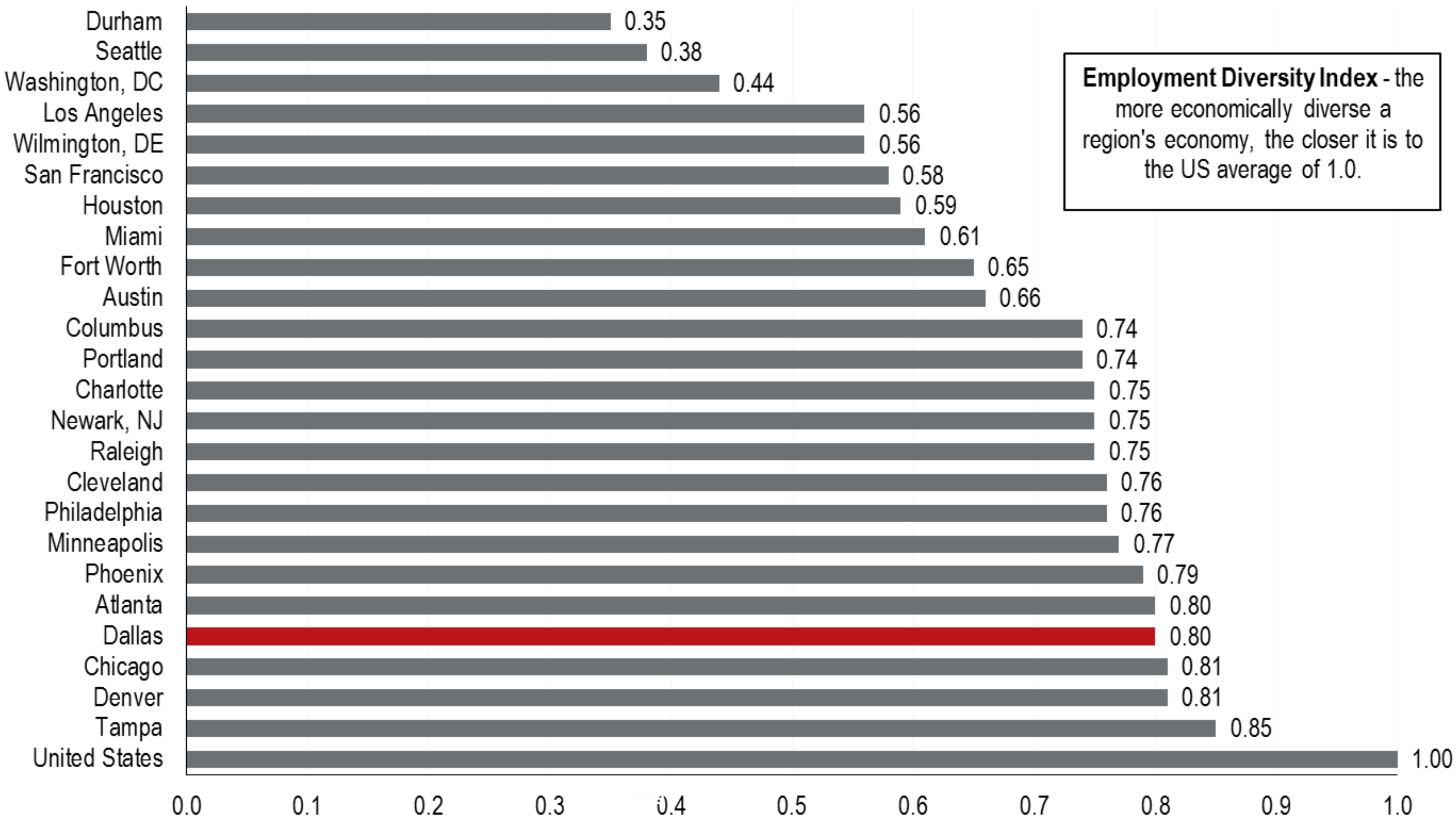
Why is Dallas less exposed? Because its economy is more diverse



Source: Moody's Analytics; JLL

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Our point of view

How bad is it?

Depends on who you ask. For **large energy companies**, 2015 will be a year to cut back on capital spending and cancel new development projects. Big oil companies typically prioritize finding and developing new oil and gas fields to replace exhausted reserves. This has brought Exxon Mobil, Royal Dutch Shell and Chevron to Western Canada, central Asia and Australia. Low oil prices will put the brakes on these programs and reduce their spending in domestic oil regions like West Texas and the Rocky Mountains.

For **smaller independent energy companies**, the outlook is worse. A lot of these shale producers loaded up on debt to fund operations and have been outspending their cash flow. Many U.S. independent drillers have lost half their value since June. Also in panic mode are firms heavily invested in the Canadian oil-sands, which have a higher breakeven point. EOG Resources announced it will shed many of its Canadian oil and gas fields and close its Calgary office.

So who is happy? Consumers, manufacturers and major oil users like airlines. Manufacturers of downstream energy products like steel pipelines will see reduced demand if prices stay low. But this is significantly offset by the cost savings felt by those manufacturers who use oil as a feed stock (i.e. lots of companies from chemicals to consumer products). The International Air Transport Association expects the drop in oil prices to boost airline profits by 26% in 2015. So while the glass is half empty for energy companies, it is half full for lots of other sectors.

Will there be job cuts?

Yes, but it's complicated. As energy companies cancel new development and move out of regions where oil production is more costly, staffing will be reduced. But the majority of oil price-related jobs cuts will stem from M&A activity and consolidation within the sector. Highly leveraged companies are attractive acquisition targets and asset sales will likely increase if prices stay low. Distressed companies will need to sell to pay down debt and bigger companies will gain access to new resources. And remember, Halliburton is in the process of buying Baker Hughes. To gain government approval, Halliburton has agreed to divest businesses that account for $7.5 billion in revenue if needed. As energy businesses are bought and sold, job cuts will ensue.

Our point of view

Which brings us to the office market…

The correlation between falling oil prices and declines in office demand has been low (see slide 6). Instead, it really comes down to jobs. The energy workers tied to oil exploration and development do not sit in the CBD. So as development projects are canceled, it won't have a big impact on office fundamentals. The **short-term impact** on office is the change in sentiment in Houston, Calgary, Fort Worth and Denver. The stock market and media reaction to crude's price decline has been extreme and this will change the tone between tenants and landlords. Energy companies previously looking to invest in space will close their checkbooks until things stabilize. Companies outside the energy sector will point to the news as a reason to gain more negotiating power with landlords. But considering the level to which the energy cities have outperformed the U.S. overall (slide 5) even as low oil prices take the wind out of the sails these markets remain more balanced than most. The recent uptick in job growth across industries (professional and business services, healthcare, retail and finance) will also offset a pullback on office demand from energy.

The **longer-term impact** is dependent on the amount of M&A activity that is triggered by the current oil price situation. If prices stay low and companies are forced to sell businesses and consolidate, then the office markets in Houston, Calgary, Fort Worth and Denver will likely see an increase in sublet and vacant space. Oh, and there is also the development pipeline to think about. Houston leads the country in office space under construction (16.2 m.s.f.) of which 56% is pre-leased. If oil prices stay below $70-$75 per barrel for much of 2015 (a likely scenario considering the amount of supply in the market and forecast for global demand) then energy companies will be in cash preservation mode for an extended period. This will make filling all that new office space difficult for developers and create opportunities for other industries to secure some pretty favorable deal terms. Stay tuned…

For more information on this report, contact:

Lauren Picariello
National Director, Research
tel +1 617 531 4208
Lauren.Picariello@am.jll.com

Or, for more about the state of the energy industry and our services for companies in the field, visit us.jll.com.

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