Economic Research Note

US: Houston, you have a problem

- **In less than five years Texas' share of US oil production has gone from around 25% to over 40%**
- **By some measures, the oil intensity of the Texas economy looks similar to what it was in the mid-1980s**
- **The 1986 collapse in oil prices led to a painful regional recession in Texas**
- **While the rest of the country looks to benefit from cheap oil, Texas could be headed for recession**

The collapse in oil prices will create winners and losers, both globally and here in the US. While we expect the country, overall, will be a net beneficiary from falling oil prices, two states look like they will bear the brunt of the pain: North Dakota and Texas. Given its much larger size, the prospect of a recession in Texas could have some broader reverberations.

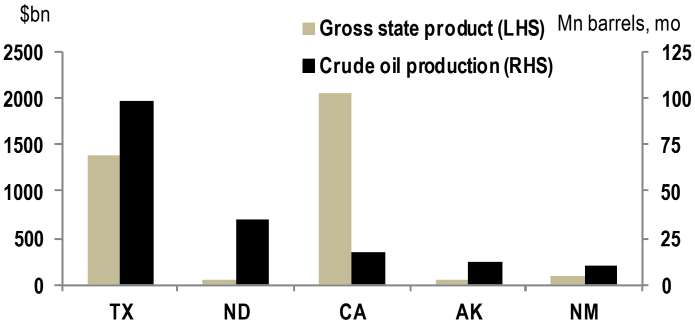
By now, most people are familiar with the growth of the fossil fuel industry in places like Pennsylvania and Ohio. However, that has primarily been a natural gas story. The renaissance of US crude oil production has been much more concentrated: over 90% of the growth in the past five years has been in North Dakota and Texas; with Texas alone accounting for 67% of the increase in the nation's crude output over that period.

In the first half of 1986, crude oil prices fell just over 50%. At the end of 1985, the unemployment rate in Texas was equal to that in the nation as a whole; at the end of 1986 it was 2.6%-points higher than the national rate. There are some reasons to think that it may not be as bad this time around, but there are even better reasons not to be complacent about the risk of a regional recession in Texas.

Geography of a boom

The well-known energy renaissance in the US has occurred in both the oil and natural gas sectors. Some states that are huge natural gas producers have limited oil production: Pennsylvania is the second largest gas producing state but 19th largest oil producer. The converse is also true: North Dakota is the second largest crude producer but 14th largest gas producer. However, most of the economic data as it relates to the energy sector, employment, GDP, etc, often lump together the oil and gas extraction industries. Yet oil prices have collapsed while natural gas prices have held fairly steady. To understand who is vulnerable to the decline in oil

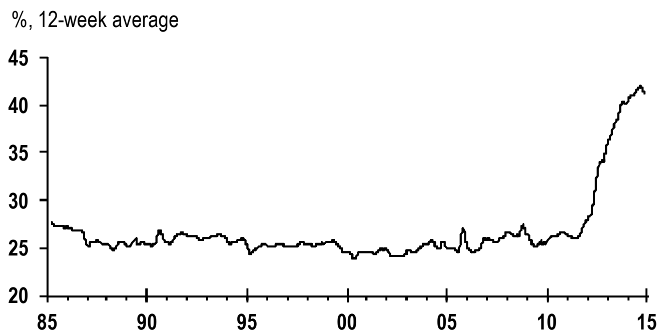
Oil production and gross state product: top 5 oil-producing states



Source: BEA, OGJ

Texas' share of US crude oil production

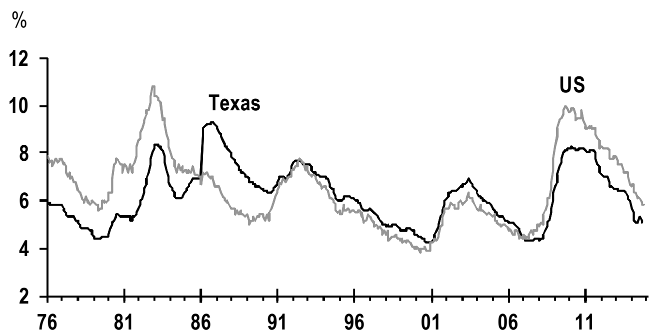
%, 12-week average



Source: OGJ

Unemployment rates

%



Source:BLS

prices specifically we turn to the EIA's state-level crude oil production data.

The first point, mentioned at the outset, is that Texas, already a giant, has become a behemoth crude producer in the past few years, and now accounts for over 40% of US production. However, there are a few states for which oil is a relatively larger sector (as measured by crude production relative to Gross State Product): North Dakota, Alaska, Wyoming, and New Mexico. For two other states, Oklahoma and Montana, crude production is important, though somewhat less so than for Texas. Note, however, that these are all pretty small states: the four states where oil is more important to the local economy than Texas have a combined GSP that is only 16% of the Texas GSP. Finally, there is one large oil producer, California, which is dwarfed by such a huge economy that its oil intensity is actually below the national average, and we would expect it, like the country as a whole, to benefit from lower oil prices.

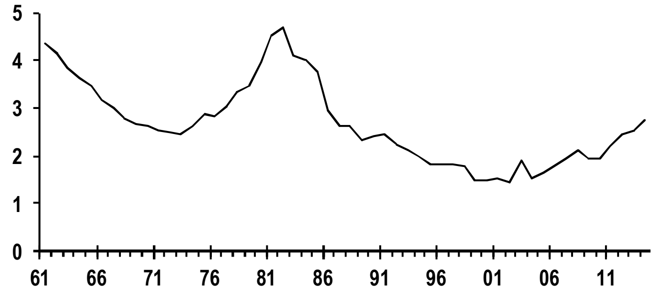
Texas-sized challenges

As discussed above, Texas is unique in the country as a huge economy and a huge oil producer. When thinking about the challenges facing the Texas economy in 2015 it may be useful, as a starting point, to begin with the oil price collapse of 1986. Then, like now, crude oil prices collapsed around 50% in the space of a few short months. As noted in the introduction, the labor market response was severe and swift, with the Texas unemployment rate rising 2.0%-points in the first three months of 1986 alone. Following the hit to the labor market, the real estate market suffered a longer, slower, burn, and by the end of 1988 Texas house prices were down over 14% from their peak in early 1986 (over the same period national house prices were *up* just over 14%). The last act of this tragedy was a banking crisis, as several hundred Texas banks failed, with peak failures occurring in 1988 and 1989.

How appropriate is it to compare the challenges Texas faces today to the ones they faced in 1986? The natural place to begin is by getting a sense of the relative energy industry intensity of Texas today versus 1986. Unfortunately, the GSP-by-industry data have a definitional break in 1997, but splicing the data would suggest a similar share of the oil and gas sector in Texas GSP now and in 1985: around 11%. Employment in the mining and logging sector (which, in Texas, is overwhelmingly dominated by the oil and gas sector) was around 3.7% in 1985 and is 2.7% now. This is consistent with a point we have been making in the national context: the oil and gas sector is very capital-intensive, and increasingly so. Even so, as the 1986 episode demonstrated, there do seem to be sizable multiplier effects on non-energy employment. Finally, there does not exist capital spending by state data, but at the national level we can see the flip side of the increasing capital intensive nature of energy: oil and gas related cap-ex was 0.58% of GDP in 4Q85, and is 0.98% of GDP now.

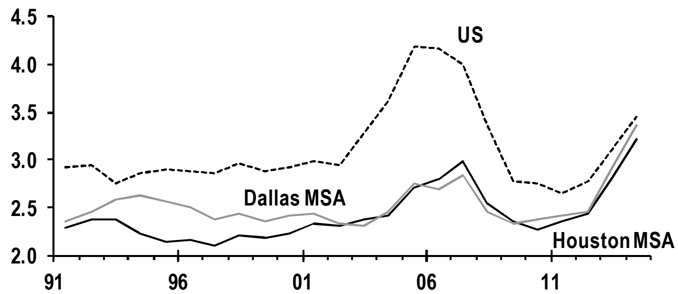
Given this, what is the case for arguing that this time is different, and the impact will be smaller than in 1986? One is that now, unlike in 1986, natural gas prices haven't moved down in sympathy with crude oil prices, and the Texas recession in 1986 may have owed in part also to the decline in gas prices. Another is that, as noted above, the employment share is somewhat lower, and thus the income hit will be felt more by capital-holders – i.e. investors around the country and the world. Finally, unlike 1986, the energy industry is experiencing rapid technological gains, pushing down the energy extraction cost curve.

Oil and gas employment in Texas
% of total employment



Source: OGJ, BLS

Ratio of median home sale price to median family income
Ratio, 3Q14 values used for 2014



Source: NAHB

While these are all valid, they are not so strong as to signal smooth sailing for the Texas economy. Financially, oil is a fair bit more important than gas for Texas, both now and in 1986, with a dollar value two to three times as large. Moreover, while energy employment may be somewhat smaller now, we are not talking about night and day. The current share is about 3/4ths what it was in 1986. (Given the higher capital intensity, there are some reasons to think employment may be greater now in sectors outside the traditional oil and gas sectors, such as pipeline and heavy engineering construction).

As we weigh the evidence, we think Texas will, at the least, have a rough 2015 ahead, and is at risk of slipping into a regional recession. Such an outcome could bring with it the usual collateral damage that occurs in a slowdown. Housing markets have been hot in Texas. Although affordability in Texas looks good compared to the national average, it always does; compared to its own history, housing in some major Texas metro areas looks quite dear, suggesting a risk of a pull-back in the real estate market.

The national economy performed quite well in 1986, in spite of the Texas recession. We expect the US economy will perform well next year too , though some regions – most notably Texas – could significantly underperform the national average. .