



Houston Business

A Perspective on the Houston Economy

The key to weak job growth in oil extraction is most likely a combination of productivity gains and the mergers among major producers over the past two years.

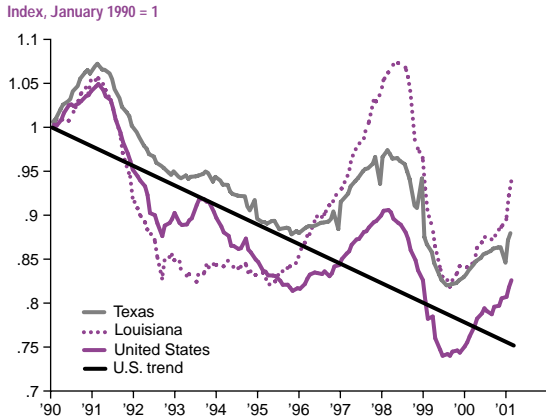
Where Are the Oil Jobs?

Domestic drilling activity topped 1,000 working rigs in October 2000 and then quickly surpassed the peak levels of the previous 1997–98 oil cycle. Drilling in the United States has since increased to 1,200 working rigs, a level of domestic activity not seen since the mid-1980s; yet job growth in oil and natural gas extraction remains surprisingly weak. Drilling in the United States has surged to the highest levels of the past decade, but in December 2000 U.S. employment in oil and gas extraction was 10.9 percent below the previous peak. Texas was down 13.4 percent and Louisiana down 16.4 percent (*Figure 1*). Lafayette, a major jumping-off point for offshore activity in the Gulf of Mexico, was 25.1 percent below its previous oil employment peak, and Houston remained 8.6 percent under its 1998–99 peak.

This article studies the data available and asks: Where are the oil jobs? A rash of specific questions can be asked about current oil extraction employment. Are productivity and technology displacing jobs? Have tight labor markets prevented hiring by oil companies, which came to the market late and with a reputation for layoffs? Is the consolidation of major oil companies into supermajors forcing layoffs? Which oil cities does job growth favor, and by how much? And, most important, what happens to job growth going forward? Has job growth simply been delayed, or are we seeing another permanent reduction in the number of oil field workers?

Although productivity growth remains at work, the data strongly suggest that reduced job growth may be closely related to the string of mergers among the major oil companies: Exxon/Mobil, BP/Amoco/Atlantic Richfield, Chevron/Texaco, Total/Petrofina/Elf Aquitaine, Repsol/YPF and Phillips/Tosco. This conclusion leaves us without a firm answer to whether much oil-related job growth

Figure 1
Oil and Gas Extraction Employment, 1990–2000



lies ahead, either in Houston or elsewhere, but the possibility of more oil jobs in 2001 remains solid.

PRODUCTIVITY

Look at the trend line for U.S. jobs data in Figure 1 or connect the peak values in 1991 and 1998—periods with 1,000 or more domestic rigs at work—and it is clear that labor needs are falling in oil and gas extraction. Output per hour in oil extraction, as measured by the Bureau of Labor Statistics, indicates a strong 2.3 percent annual gain in output per worker during 1987–98, when technology began to revolutionize the industry. Three-dimensional seismic, horizontal drilling, subsea completions and other technological innovations have increased drilling success rates while greatly expanding the range of possible projects. A recent article on oil and technology in *The Atlantic Monthly* concludes: “The growing ingenuity of human beings is outpacing the earth’s growing reluctance to relinquish its treasure.”¹

The failure to return to prior peak job levels is partly because of continued productivity gains. However, the pattern in Figure 1 seems to have a unique cyclical element as well, a sluggishness not accounted for by longer-term trends. By just connecting the peak values in the chart and extrapolating forward, it appears we should be several percentage points ahead of where we are today.

WHICH CITIES ARE FAVORED?

A look at oil-related job growth in a number of cities and their success in this oil cycle

yields only a few clues to the sluggish oil employment growth. It does, however, confirm that the pattern of industry consolidation continues.²

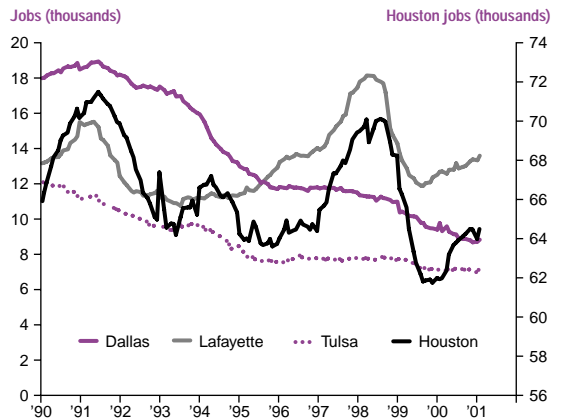
Figure 2 shows the job growth since 1990 in four cities: Houston, Dallas, Lafayette, La., and Tulsa. (Note that Houston is measured on the right scale of the chart, the other cities on the left.) Houston and Lafayette illustrate the same pattern of employment gains and losses as the industry as a whole, with peaks and troughs that mirror the rise and fall of both oil prices and domestic drilling. Midland–Odessa, Bakersfield, Calif., Fort Worth, Houma–Thibodaux, La., New Orleans and Oklahoma City also make the list of cities that still follow this pattern. In contrast, Dallas and Tulsa show no recovery in this cycle, simply a pattern of continued long-term decline. They are joined by Denver, Wichita, Kan., Los Angeles and New York as well as a number of smaller cities such as Amarillo, Wichita Falls, Corpus Christi and Laredo.

The complete lack of recovery in cities that have historically provided a significant share of the nation’s oil-related jobs partly explains the pattern of current weak recovery in oil jobs, but it does not tell why it is happening. Even among nine cities that have a continued pattern of following the oil cycle, oil-related employment is a collective 13.1 percent below its 1997–98 peak. No one is spared from the weak job recovery, although some cities are hurt worse than others.

PRODUCER CONSOLIDATION

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Figure 2
Four Oil Cities: Oil Extraction Jobs in the 1990s



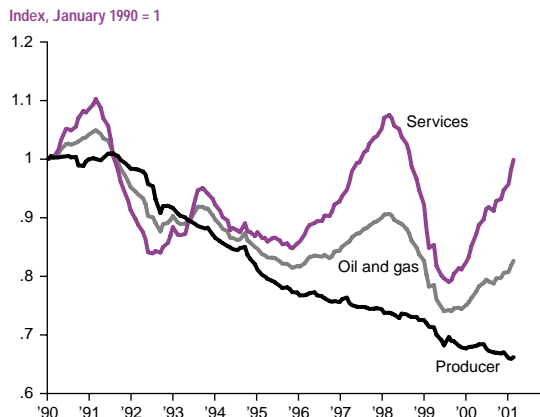
producers over the past two years. Figure 3 charts total U.S. oil employment (the same data shown in Figure 1) as well as the job levels attributed to producers versus oil service companies. Oil producers are the decisionmakers for oil exploration: they evaluate the prospects, secure the financing, invest in exploration and engage in the long-term production and marketing of oil and natural gas. BP Amoco and ExxonMobil Corp., for example, are among the world's largest producers, along with other large companies and dozens of smaller independents. In contrast, service companies bring skills to the wellhead to drill, test and complete a well for long-term production.

Figure 3 shows a major split in the behavior of producers versus service companies. The service companies are needed at the wellhead for every project; thus, their employment has increased at a solid pace since 1999, following the number of working rigs upward. Employment is still below the last peak, but rising. The fact that service company employment is still trying to reach the last peak may reflect productivity gains, but it may also be caused by difficulty hiring in a tight labor market, a lack of international work and a mix of domestic projects that have not been complex or demanded as many oil services as past expansions. The latter problems are now disappearing: the labor market has loosened up with the national economic slowdown, and drilling has moved offshore, turned to deeper prospects and employed more horizontal and directional wells. As a result, more service-related job growth could still lie ahead.

The decline in producer employment is part of a long-term trend. Employment in 2000 was only two-thirds of what it was in 1990. The steady decline looks like the pattern seen in Figure 2 for Dallas and Tulsa. These cities have few service companies, and their local oil-related job base has been greatly affected as consolidation of major producers like Mobil Corp. and Phillips Petroleum Co. has displaced workers to other companies or locations. This time, however, consolidation through mergers has not just been geographic but widespread enough to affect the industry as a whole.

Oil service companies have consistently reported that consolidation among the biggest oil companies has been a drag on their business. While the megamergers were being absorbed, exploration activity was paralyzed among the companies involved, especially slowing the

Figure 3
Employment in Oil and Gas Extraction in the 1990s:
Producers Versus Oil Services



SOURCE: Bureau of Labor Statistics.

largest, riskiest and most resource-intensive projects that only major companies can undertake. Exploration outside the United States is still 10 percent below the last peak, for example, and the majors—now supermajors—are probably responsible by being slow off the mark in this expansion.

To predict growth of producer employment in 2001, we must first determine the cause of the weak producer job growth. How much of the recent decline stems from efficiencies and productivity gains due to mergers? And how much reflects a late start in participating in the current exploration boom? Small and medium-size independent producers have acted aggressively, carrying domestic exploration to its current high. The majors are now ready to enter into more projects, more complex projects and more overseas projects. The question remains: How many more jobs will be needed as this work expands? Houston would be one obvious beneficiary of any job gains.

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NOTES

¹ Jonathan Rauch, "The New Old Economy: Oil, Computers, and the Reinvention of the Earth," *The Atlantic Monthly* (January 2001), p. 42. Also see R. W. Gilmer and Timothy K. Hopper, "Technology and Productivity in the Oil Field," *Houston Business* (December 1997).

² R. W. Gilmer and David G. Kang, "Urban Oil Consolidation: An Update," *Houston Business* (August 2000).

The Houston economy is showing signs of cooling, although local economic growth remains solid. First-quarter job growth slowed to an annual rate of 1.6 percent after growing at an annual rate of 2.9 percent over the previous three quarters, and the unemployment rate ticked up to 3.5 percent. Auto sales are running behind the strong record months of last year but otherwise have never been better. New home sales snapped back in March to post the best month since the 1980s. The Houston Purchasing Managers Index weakened slightly in March to just over 60, in contrast to the U.S. manufacturing index of 43.1. However, the Houston index still points to very strong expansion, while the U.S. index signals continued contraction.

RETAIL AND AUTO SALES

Retailers report sales on track or slightly ahead of plan, with inventories clearing out nicely. The responses should be viewed in the context of disappointing late fall and winter sales; retailers probably revised downward their expectations for the spring.

The strong auto sales for February and March were second only to last year's record numbers. Consumers seem to be revising spending plans down only a notch; luxury cars took a big hit, while used car sales surged.

CRUDE OIL AND OIL PRODUCTS

Spring brings the weakest crude oil markets of the year, and OPEC cut oil production in December by 1.5 million barrels per day in anticipation of weaker seasonal demand. OPEC announced another million-barrel cut in mid-March in response to weaker worldwide economic growth. Crude inventories grew steadily this spring but remained below year-earlier levels. Price briefly weakened to \$26 per barrel, the lowest of the year.

Gasoline prices have become a major factor supporting crude prices in recent days, with gasoline inventories running 4 to 5 percent below last year's extraordinarily low levels. Responding to good profit margins and public pressure to supply heating oil, refiners have run plants very hard for two years. Weak profits this spring

signaled a chance to do extended maintenance, and the spring turnaround season was longer and deeper than normal. The result has been low inventories going into the summer driving season and a sharp jump in wholesale and retail gasoline prices. High prices—and good margins for refiners—are expected to persist most of the summer.

Heating oil and natural gas prices mostly moved with late winter weather, but natural gas prices remained above \$5 per thousand cubic feet (Mcf).

PETROCHEMICALS

If chemical producers had been asked to define their version of petrochemical hell 12 months ago, they would have said a softer economy, a huge chunk of new capacity coming on line and natural gas prices at \$5 per Mcf. The toughest times for petrochemicals in 20 years are now reality, with high feedstock prices turning the Gulf Coast into the least competitive region in the world and effectively locking U.S. chemicals out of export markets. Some chemical prices are rising to cover production cost increases, but profits are terrible.

DRILLING AND OIL SERVICES

High crude and natural gas prices continue to translate into good news upstream. Domestic drilling continues to improve slowly, with equipment and labor constraints keeping the rig count near 1,200, the highest level of drilling activity since the mid-1980s. International drilling is also improving slowly, and rig bidding activity is feeding rumors that a big push by the majors may finally be under way.

FINANCIAL SERVICES

As lenders and investors, bankers are becoming more cautious. Higher credit standards are now in place. Banks have implemented cost cutting and even hiring freezes, although bank operations generally remain healthy. Lower earnings are related more to off-balance-sheet, fee-related activity than to traditional bank lending.

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