2020

# HOUSTON EMPLOYMENT FORECAST

December 2019

GREATER HOUSTON PARTNERSHIP

Making Houston Greater.

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TRANSWESTERN®

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Patrick Jankowski

December 5, 2019

# INTRODUCTION

"History may not repeat itself," Mark Twain once quipped, "but it sure does rhyme a lot."

If Twain were alive today, he might direct that comment to the oil and gas industry. For the second time in less than a decade, the industry faces a steep downturn.

The first collapse, Fracking Bust I, began late in '14 when Saudi Arabia refused to cut production to prop up oil prices. West Texas Intermediate fell below $30 per barrel, more than 250 U.S. exploration and service firms filed for bankruptcy, and nearly 100,000 energy workers in Houston lost their jobs. A slow recovery began mid-year in '16, but the rig count never hit its previous peak and the industry has recouped only half the jobs lost in the downturn.

The second collapse, Fracking Bust - the Sequel, is now underway. A change in attitude triggered this downturn. At the height of the boom, exploration firms could easily tap capital markets to fund their drilling programs. Profits were meager (or nonexistent), but production surged, and the promised big payoff was just around the corner.

But sometime last year, Wall Street tired of waiting for the industry to reach that corner. Profitability now trumps production growth. In some cases, even that's not enough to satisfy investors. Funds have dried up and the industry now finds it must live within its means, funding new wells through cash flow and less generous loans from public and private investors. As a result, fewer wells are drilled, the rig count is plummeting, orders for new equipment have begun to dry up, and layoffs will soon follow.

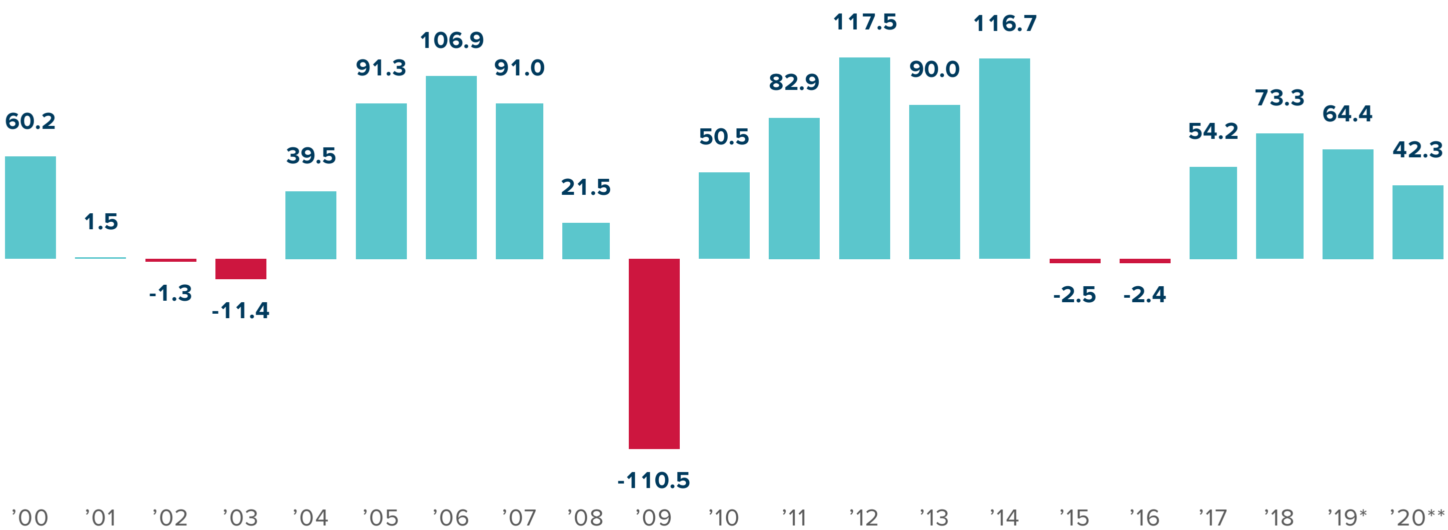
Other factors have contributed to the energy downturn as well. Oil remains mired in the mid-$50s. Even a September attack on Saudi oil production facilities had no lasting impact on prices. Demand growth has slowed. Analysts expect daily consumption to rise by only 900,000 barrels in '20. That's off a string of years in which consumption grew 1.2 to 1.4 million barrels annually. And the world simply has too much capacity. To support prices, OPEC (mainly Saudi Arabia) has agreed to hold 1.2 million barrels per day off the market. Without OPEC's constraint, prices would likely be in the $40s.

It's uncanny how accurately Twain's comment reflects our region's current situation. The past five years in Houston looked a lot like the mid-1980s. Houston emerged from that bust with a glut of office space, an overbuilt industrial market, and a surplus of apartments and single-family homes. Today, Houston has an overbuilt office market, and if developers don't pull back soon, will have overbuilt industrial and apartment markets as well. But unlike the 1980s, Houston faces no risk of a banking collapse. Financial institutions are better capitalized and better supervised now than they were back then.

Except for a brief period early in the early 1990s, when Iraq invaded Kuwait, oil prices languished below $20 per barrel through much of the decade. Still, Houston found a way to grow.

COMPAQ Computer Corp. went from an idea on a napkin to Fortune 500 company in a few short years. At one time, the firm employed more than 17,000 in Houston. Vendors supporting COMPAQ's local operations employed more than

**METRO HOUSTON JOB GROWTH,** December to December, (000s)




Sources: Texas Workforce Commission and Greater Houston Partnership *October YTD ** Partnership forecast that. NASA's space shuttle program was in its heyday. Johnson Space Center employed more than 16,000 contractors and civil servants at its peak. Energy trading, a 1990s innovation, supported thousands of jobs until financial shenanigans at Enron and Dynegy forced the two into bankruptcy and tainted the reputation of the industry.

Houston finally emerged as a global city. A Greater Houston Partnership survey identified 3,600 companies engaged in global trade in 1998, nearly double the 1,900 identified 12 years earlier. Houston finished the 1990s with 520,000 more jobs than when the decade started, but only 4,500 of those jobs were in oil and gas.

As Houston prepares to enter the 2020s, the region needs a new set of growth engines. Perhaps they will emerge from the Texas Medical Center, the Innovation Corridor, or Houston's Energy Corridor. Until those new engines emerge, Houston's growth will depend heavily on the U.S. and global economies. Fortunately, both should perform reasonably well next year.

## U.S. OUTLOOK

The U.S. economy continues to expand, albeit at a moderate pace. The U.S. Bureau of Economic Analysis reports U.S. gross domestic product (GDP) grew 1.9 percent in Q3/19. For the 12 months ending Q3, the U.S. grew 2.0 percent, adjusted for inflation. While that's somewhat slower than the pace of the past five years, it's above what many economists expected. The rate also falls near the long-term average for the U.S.

Employers added 128,000 jobs in October, the most recent month for which data are available. Job growth would have been stronger if not for the United Automobile Workers (UAW) strike against General Motors. The labor action idled an estimated 42,000 employees. Those layoffs were temporary. Add those jobs to the initial report and the U.S. likely created 170,000 jobs in October, falling within the long-term U.S. average.

With unemployment at 3.6 percent, the labor market is the tightest it's been in more than 50 years. The unemployment rate for Blacks or African Americans was 5.4 percent in October, the lowest on record. For Hispanics it was 4.1 percent, the second lowest on record. And at 3.6 percent, the unemployment rate for high school graduates without any college is near a 20-year low.

The tight labor market has finally begun to affect wages and consumer optimism. The U.S. Bureau of Labor Statistics reports that the average hourly wage was 3.0 percent higher in October '19 than a year prior. That's affected consumer behavior. Total purchases in September were up 3.9 percent compared to September '18. And in a July Gallup Poll, 53 percent of respondents described economic conditions as "excellent" or "good." Only 12 percent described U.S. economic conditions as "poor." This optimism is important considering consumers account for about two-thirds of all economic activity in the U.S.

One area of concern is business investment, up only 0.2 percent in October, well below the pace of 5.9 percent in October two years ago. Uncertainty over U.S. trade policy has forced many businesses to dial back or postpone investment decisions.

The outlook for manufacturing remains cloudy as well. The U.S. Purchasing Managers Index (PMI) for manufacturing registered 48.3 in October. Readings above 50 signal expansion in U.S. manufacturing; below 50, contraction. The services PMI, however, registered 54.7 in October. The difference is important considering that services contributes six times as much to GDP as does manufacturing.

## GLOBAL OUTLOOK

After months of reports focusing on the dire global outlook, a few positive stories have begun to trickle in: "Joy Replaces Gloom Among Global Investors as Recession Risk Fades," Bloomberg, November 21; "Morgan Stanley Sees a Global Economic Recovery in Early 2020?" Bloomberg, November 17; "Geopolitical and Recession Risks Fading," CNBC, November 8. The Partnership expects reports such as these will become more numerous in the coming months as trade tensions ease, or at least not worsen.

Various central banks have taken steps to lower interest rates. And emerging markets are expected to experience better growth in '20 than they did in '19. While a robust rebound may not be in the cards, the relative improvement should put an end to the fears that the world economy is barreling toward recession.

The Organisation for Economic Co-operation and Development (OECD) expects the global economy to grow 3.0 percent in ’20, not the crash many economists predicted earlier this year. Of the 20 largest economies, which account for nearly 80 percent of global economic activity, none will slip into recession in ’20, according to OECD data. Twelve of these will actually see an uptick in growth. Lost in the discussion in recent months is that with ’17 and ’18 being particularly good years for global growth, any movement back to the long-term trend would appear as a slowdown. But in an $80 trillion global economy, growth of just 3.0 percent translates to an additional $2.4 trillion in economic activity next year.

## THE FORECAST

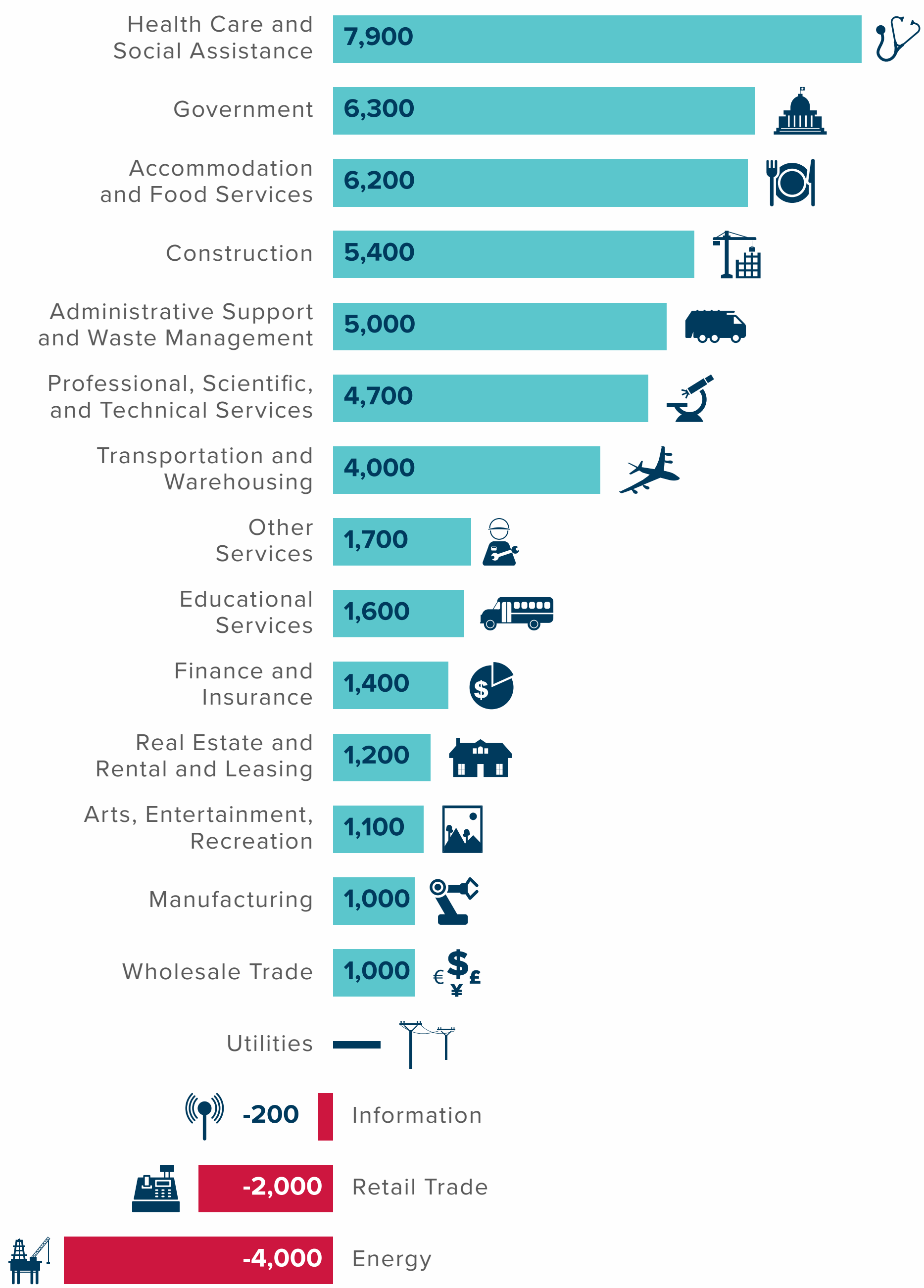
Houston’s growth in ’20 will occur outside of energy, especially in sectors tied to population, the U.S. economy, and global growth. Economic activity and employment are forecasted to expand in accommodation and food services; administrative support; arts, entertainment and recreation; educational services; finance and insurance; government; health care and social assistance; other services; professional, scientific and technical services; real estate and rental and leasing; and transportation and warehousing. Manufacturing and wholesale trade will struggle to create jobs but not turn negative. Utilities will remain flat. Energy, information, and retail will lose jobs. The Partnership’s forecast calls for the region to create 42,300 jobs in ’20.

## BEFORE WE BEGIN

The purpose of this forecast isn’t to score a bull’s-eye, though the Partnership would be pleased if it did. Rather, the purpose is to highlight the forces shaping Houston’s economy. A clearer understanding of the trends driving growth or decline should help the business community make better investment, staffing, and purchase decisions. Given the uncertainty surrounding oil prices, global trade, and politics in Washington, D.C. the more insight, the better. Now the details behind the numbers.

**METRO HOUSTON FORECAST, PROJECTED JOB GAINS/LOSSES**

December ’19 - December ’20




Source: Greater Houston Partnership

# ENERGY

## ENERGY SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 3rd

$44.3 Billion | Share of Total 9.0%

### NUMBER OF FIRMS

Industry Rank | 15th

1,457 | Share of Total 1.1%

### CURRENT EMPLOYMENT

Industry Rank | 13th

87,400 | Share of Total 2.7%

### INDUSTRY WAGES

Industry Rank | 6th

$14.3 Billion | Share of Total 7.0%

### 10-YEAR JOB GAINS

Industry Rank | 15th

7,800 | Share of Total 1.2%

### AVERAGE ANNUAL WAGE

Industry Rank | 1st

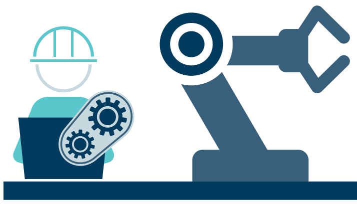
$154,596

A quick overview of oil and gas:

- Since the first of the year, the number of drilling rigs working in the U.S. has fallen 25.6 percent. Only 806 were working as of mid-November. That's down from 1,083 in the first week of January and 1,931 in October '14, the peak of the fracking boom. Though the industry will likely never return to 2,000 rigs because of technological advancements, lower exploration budgets expected in '20 will cause the rig count to continue its decline into next year.
- After peaking at $74.95 per barrel in early October, the price of West Texas Intermediate (WTI), the benchmark for U.S. light, sweet crude, fell 24.4 percent to $56.67 in mid-November. WTI has traded above $60 only once in the past six months.
- Through the first 10 months of '19, the Texas Railroad Commission permitted 8,961 wells in the state, 11.8 percent fewer than the 10,159 permitted during the comparable period in '18. At the height of the fracking boom ('14), the state permitted nearly 23,000 wells over the comparable period.
- The industry completed 7,763 wells in Texas over the first 10 months of the year, almost 1,500 fewer (-16.1 percent) than completed in the same period in '18. At the height of the fracking boom ('14), the industry completed more than 25,000 wells over the comparable period.
- Nationally, the oil field service sector has lost 13,800 jobs since the first of the year. The bulk of those losses, 10,800, have occurred in Texas. Metro Houston has lost 1,100 oil field service jobs since the June peak.
- The U.S. Energy Information Administration (EIA) forecasts the spot price for WTI to average $54.60 per barrel in '20, down from $56.45 this year and $65.06 in '18. The price of Brent Crude, the benchmark for Europe, shows a comparable drop.
- EIA forecasts U.S. crude production to average 13.3 million barrels per day in '20, up from 12.3 million barrels in '19. That represents the smallest gain since '17, when the industry added just 600,000 barrels.
- Through the first nine months of '19, 48 U.S. exploration, production, and oil field services firms filed for bankruptcy, up from 33 over the comparable period in '18 and 26 in '17.

Exploration activity, already down in '19, will continue to contract in '20. Though few firms have finalized their exploration budgets for next year, cuts of 10 to 20 percent should be expected. EIA expects oil prices will slip in '20, putting an even tighter squeeze on the cash flows of many firms. The industry will continue to see a high number of bankruptcy filings. More firms will merge, hoping that by pooling acreage and reducing headcounts the combined companies will be more viable than as separate entities. New equipment orders will dry up. Layoffs will happen first in the field, then on the factory floor, and finally in the office. If there's any solace in the situation, it's that the industry is already lean and won't see deep layoffs. The restructuring that began in '15 and went on hiatus in '17 will resume in '20.

The forecast calls for exploration and production and oil field services to lose as many as 4,000 jobs by year's end.



# MANUFACTURING

## MANUFACTURING SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 1st

$83.1 Billion | Share of Total 17.0%

### NUMBER OF FIRMS

Industry Rank | 9th

5,650 | Share of Total 4.3%

### CURRENT EMPLOYMENT

Industry Rank | 6th

241,000 | Share of Total 7.5%

### INDUSTRY WAGES

Industry Rank | 2nd

$20.8 Billion | Share of Total 10.2%

### 10-YEAR JOB GAINS

Industry Rank | 11th

25,100 | Share of Total 3.8%

### AVERAGE ANNUAL WAGE

Industry Rank | 5th

$85,020

Manufacturing employment in Houston has yet to recover from the first Fracking Bust. As of October ’19, the sector was still 21,000 jobs shy of its peak (262,500 jobs) in December ’14. That gap will likely grow next year as manufacturing faces a fresh set of challenges brought on by the trade war with China, uncertainty over the fate of the United States-Mexico-Canada Agreement (USMCA), the winding down of a 10-year construction boom, slower U.S. growth, general uncertainties around global trade, and another downturn in oil and gas.

Nationally, manufacturing already shows signs of weakness. The Institute for Supply Management’s Manufacturing Index was 48.3 in October. Readings above 50 signal expansion; below 50, contraction in the sector. October was the third straight month of sub-50 readings for the U.S. in ’19. New orders for manufactured goods fell in August and September, according to the Census Bureau. And the U.S. Bureau of Labor Statistics reports that manufacturing employment has been flat since July.

Locally, the Houston Purchasing Managers Index (PMI) registered 51.1 in October ’19, the lowest reading since October ’17 following Hurricane Harvey. And Texas Workforce Commission (TWC) data show that local manufacturing employment peaked in August and has lost 1,800 jobs since.

Weakness in oil and gas continues to weigh on Houston’s manufacturing sector. The Partnership estimates that 25 to 33 percent of the region’s manufacturing jobs are tied to oil and gas extraction. That’s down from the height of the fracking boom, when as many as 40 percent supported upstream energy. This includes jobs in the oil field equipment manufacturing subsector plus portions of 52 other subsectors that supply the industry. Given the collapse in the rig count and drop in wells drilled, TWC has likely understated the extent of the job losses in manufacturing so far.

One bright spot is chemicals and refined products, which currently account for 51,900 jobs, or 21.5 percent of manufacturing employment. Many of the chemical plant and refinery expansions that broke ground from ’14 through ’16 are now operational. As a result, the sector has added 5,000 jobs in the past five years.

Approximately half the remaining manufacturing jobs are distributed among 200 other industries. Some, like the manufacturers of air conditioners, computers, or general-purpose machinery account for 6,000 to 7,000 jobs each. Others, like leather products and candy making, account for less than 250. Growth in these sectors depends on business investment and consumer demand.

Without stronger global growth, demand for chemicals, plastics, and refined products will remain in the low single digits. Signs of a slowdown in chemicals have already popped up. Chemical railcar loadings, the best real-time indicator of chemical industry activity, are down 0.1 percent through September of this year compared to the same period last year, according the Association of American Railroads. The expected cuts to exploration budgets in ’20 will further erode energy-related manufacturing. Growth outside energy won't be strong enough to offset the losses elsewhere. And nationally, business investment remains weak. All these factors indicate a poor outlook for Houston's manufacturing sector. The forecast calls for manufacturing to create only 1,000 jobs in '20.

# CONSTRUCTION

## CONSTRUCTION SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 7th

$30.8 Billion | Share of Total 6.3%

### NUMBER OF FIRMS

Industry Rank | 5th

10,804 | Share of Total 8.3%

### CURRENT EMPLOYMENT

Industry Rank | 7th

231,300 | Share of Total 7.2%

### INDUSTRY WAGES

Industry Rank | 4th

$17.4 Billion | Share of Total 8.5%

### 10-YEAR JOB GAINS

Industry Rank | 5th

52,300 | Share of Total 8.0%

### AVERAGE ANNUAL WAGE

Industry Rank | 8th

$73,684

Over the past 10 years, more than $150 billion in construction contracts have been awarded in the Houston region. This activity has added 43.8 million square feet (msf) of office space, 88.4 msf of warehouse/distribution space, 43.4 msf of retail space, about 300,000 single-family homes, nearly 125,000 multi-family units, and more than $60 billion in new chemical plants and refinery upgrades to Houston's property inventory.

But the next 10 years don't look as rosy. The region has nearly 60 msf of vacant or available office space. That equates to a vacancy rate over 26 percent. A healthy rate would be in the mid-teens or lower. And the rate isn't going down. Since '15, office absorption has been negative. Developers are unlikely to break ground on any new projects unless they're build-to-suit, substantially pre-leased or just foolish.

The vacancy/availability rate for industrial space was 11.3 percent in Q3/19, up from 7.6 percent in Q3/18. The vacancy rate for Class A industrial space built within the last five years was 15.5 percent. Houston has nearly 21 msf under construction, of which only 20 percent is pre-leased. In a good year, Houston absorbs six to eight million square feet. That suggests Houston has a three-year supply under construction on top of the already 66 million square feet available.

Developers have delivered 78,000 multi-family units over the past five years and another 9,800 in the first 10 months of '19. In November, the overall occupancy rate was 90.0 percent. That should mark an inflection point for multi-family. Any occupancy rate above 90 percent suggests a landlord-friendly market; below 90 percent, a tenant-friendly market. In early November, 52 percent of all Class A units in Houston offered concessions (free rent, waived security deposit, etc.), up from 44 percent in August. While some "freebies" are always available, the creeping volume of incentives signals the market is softer than the occupancy rate indicates.

As of early November, 23,000 apartment units were under construction and another 28,000 in the planning stages. An industry rule of thumb holds that Houston can absorb one apartment unit for every six new jobs. To absorb all the under-construction and planned units, the region will need to create 300,000 jobs, equivalent to what Houston has created cumulatively over the past six years—a period that includes the tail end of the fracking boom.

Single-family home construction should hold up well. The market has absorbed 28,000 to 30,000 new homes per year for the past 10 years. And for many, owning a home is still part of the American dream. Barring a surge in interest rates or a collapse in Houston's economy, that pace of construction should continue.

The long-awaited second wave of chemical plant construction has yet to materialize, at least in Houston. A handful of new chemical plants have been announced, but many await regulatory approval, final go-ahead from their boards, or an improvement in market conditions. Most of the chemical plant or refinery construction underway is in Corpus Christi, Beaumont-Port Arthur, and Louisiana. Industrial Info Resources, the Sugar Land-based market intelligence firm, forecasts the demand for construction labor in the petrochemical sector will fall by 6.7 percent in '20 and another 10.8 percent in '21.

About 3,400 hotel rooms across 32 properties were under construction in Q2/19. Another 5,438 hotel rooms across 50 properties have confirmed construction starts in the next 12 months, which is slightly higher than a year ago.

Over the next few years, the public sector may be the primary driver of construction activity. In November, voters approved $3.5 billion in construction bonds for the Metropolitan Transit Authority (Metro). Metro hopes to leverage this amount with additional state and federal funds for a $7.5-billion expansion of the transit system and related infrastructure. Work has begun on the $1.2 billion renovation and expansion to Mickey Leland International Terminal at Bush Intercontinental Airport. The Harris County Flood Control District has started contracting for work funded with $2.5 billion in bonds approved by voters in August '18. The rerouting of I-45 around the east side of downtown is expected to cost $7 billion, with work starting as early as '21.

The Partnership doesn't foresee an increase in office construction next year, or for the next several years. As owners of industrial space find it takes longer to lease new warehouses, and can do so only at rates lower than projected, industrial construction will slow. In a year or so, Houston may be faced with another apartment glut. At that point, it's to be hoped, apartment developers will back off the pace of construction starts.

There seems to be enough work on the books to keep the industry busy well into '20, but at some point, the overbuilding in office, industrial and multifamily will catch up. The forecast calls for the sector to add only 5,400 jobs in '20.

# RETAIL TRADE

## RETAIL TRADE SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 8th

$24.6 Billion | Share of Total 5.0%

### NUMBER OF FIRMS

Industry Rank | 4th

11,401 | Share of Total 8.7%

### CURRENT EMPLOYMENT

Industry Rank | 3rd

303,400 | Share of Total 9.5%

### INDUSTRY WAGES

Industry Rank | 11th

$10.1 Billion | Share of Total 4.9%

### 10-YEAR JOB GAINS

Industry Rank | 6th

40,200 | Share of Total 6.1%

### AVERAGE ANNUAL WAGE

Industry Rank | 17th

$33,540

Metro Houston has more than 18,000 retail stores, up from 15,700 stores 10 years ago, the most common being convenience, drug, electronics, grocery and gas stations. The sector performed well earlier in the decade, adding 48,600 jobs from '10 to '16. But the past two years have been rough: retail lost 1,200 jobs in '17 and another 5,800 in '18. Overall retail employment in October '19 was exactly where it stood in October '15.

Hardest hit in Houston have been health and beauty, clothing and department stores. These brick-and-mortar retailers continue to lose market share to online shopping. Moody's, the credit rating and risk analysis firm, estimates that online transactions now account for 15 percent of all retail sales and will account for 20 percent within the next five years. Traditional apparel stores have already lost 25 percent of their sales to online retailers. That figure will hit 33 percent over the next three to four years.

Dozens of firms have already been forced into bankruptcy, recent among them Charming Charlie, Destination Maternity, Dress Barn, Forever 21, Gymboree, David's Bridal, Payless ShoeSource, Teavana, Things Remembered, Toys "R" Us, and Z Gallerie. Some have already ceased to exist, some will soon cease to exist, others will receive new management teams, a few will muddle on, others will emerge as new concepts, and some will become strictly online outlets. Retail Dive, a website focused on retail and online news and analysis, has identified another 28 regional and national retailers at risk of filing for bankruptcy in '20.

To survive, stores will need to integrate brick-and-mortar with online sales. Grocers like Walmart, Kroger, and H-E-B already allow customers to shop for milk, bread, and eggs online and have their orders picked up curbside or delivered to the home. Best Buy cut costs, worked with vendors to innovate operations, and reinvigorated the in-store customer experience to emerge as a formidable hybrid retailer. Malls that recognized they are entertainment and dining centers, not just retail venues, are doing well. By some estimates, more people go to malls to eat than to shop, and while there they take in a movie, go ice skating, or allow their children to romp on the indoor playground. In Houston, the best opportunity for traditional retail is in the suburbs, with grocery-anchored centers popping up to serve new subdivisions.

Retail will get a boost from population growth next year, though the gains won't be as strong as earlier in the decade. Overall job growth will continue, but many of the new jobs will pay less than ones lost in the fracking bust. Household incomes will nudge up, and this should provide consumers with slightly more disposable income. Consumers should remain confident about their economic prospects and continue to spend. But retailers will continue to struggle with the inroads from online sales. The forecast calls for retail to continue struggling, the sector losing another 2,000 jobs in '20.

# WHOLESALE TRADE

## WHOLESALE TRADE SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 4th

$42.3 Billion | Share of Total 8.6%

### NUMBER OF FIRMS

Industry Rank | 7th

9,458 | Share of Total 7.2%

### CURRENT EMPLOYMENT

Industry Rank | 9th

172,000 | Share of Total 5.4%

### INDUSTRY WAGES

Industry Rank | 7th

$14.2 Billion | Share of Total 6.9%

### 10-YEAR JOB GAINS

Industry Rank | 7th

38,900 | Share of Total 5.9%

### AVERAGE ANNUAL WAGE

Industry Rank | 6th

$81,432

Wholesalers provide merchandise to other businesses for resale (*e.g.*, retailers, grocers), to industrial customers for their own use (*e.g.*, drilling companies), to manufacturers who incorporate the intermediate goods (*e.g.*, chemicals, lumber, steel) into their final products, and to buyers overseas. A handful of sectors—industrial machinery, commercial equipment, household appliances, electronics, grocery, metals, chemicals, and refined products—account for 60 percent of wholesale employment in Houston.

In Houston, durable goods wholesaling (merchandise with a normal life expectancy of three years or more) tracks manufacturing activity, and that tracks the rig count and oil exploration activity. Employment in durables fell with the Great Recession, again during the first Fracking Bust, and is showing signs of weakness with the most recent drop in the rig count. Nondurables wholesaling (merchandise with a normal life expectancy of less than three years) is less affected by the energy cycle but does track with overall growth.

In ’20, manufacturing tied to oil exploration will struggle and so will durables wholesaling. Export growth will pick up as overseas economies recover, but a strong U.S. dollar may stifle overseas sales. Consumer demand, driven by a growing population and employment base, should expand. A healthy U.S. economy will also help. The Partnership’s forecast calls for wholesale trade to add 1,000 jobs in ’20.

# TRANSPORTATION AND WAREHOUSING

## TRANSPORTATION AND WAREHOUSING SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 11th

$19.4 Billion | Share of Total 4.0%

### NUMBER OF FIRMS

Industry Rank | 12th

4,051 | Share of Total 3.1%

### CURRENT EMPLOYMENT

Industry Rank | 10th

140,200 | Share of Total 4.4%

### INDUSTRY WAGES

Industry Rank | 8th

$11.3 Billion | Share of Total 5.5%

### 10-YEAR JOB GAINS

Industry Rank | 8th

35,000 | Share of Total 5.3%

### AVERAGE ANNUAL WAGE

Industry Rank | 9th

$73,372

The transportation and warehousing sector includes air, rail, water, and trucking services; freight forwarders and customs brokers; crude, gas and product pipelines; and warehouses and bulk storage terminals.

The latest indicators show that Houston’s transportation sector is doing well. The Houston Airport System (HAS) is on track to handle a record 60 million passengers this year, up from 48.5 million in ’09. The Houston-Galveston Customs District is on pace to move a record 310 million metric tons this year, up from 244.9 million in ’09. The Port of Houston Authority is on track to handle 2.8 million containers, up from 1.8 million in ’09. And if rush hour traffic on Interstate 10 is any indicator, Houston’s trucking industry is also doing quite well. Since ’09, employment is up in all sectors except for air, which remains 8,000 jobs below its previous peak–the lasting effect of the United-Continental merger in ’12.

Traffic through the Houston-Galveston Customs District continues to grow, but at a slower pace. New pipelines continue to come online, bringing crude, natural gas, and jobs to Houston. Online retail continues to grow, boosting the need for courier and delivery services. The port, airport, highway system, and warehouse construction boom have helped position Houston as a warehouse/distribution center. All this activity requires more freight forwarders, shipping agents, and inspection services. But the slowdown in oil exploration, oil field equipment manufacturing, and wholesale activity will temper some of the growing demand for transportation services. Accounting for all this, the forecast calls for the region to create 4,000 transportation and warehousing jobs next year.

# UTILITIES

## UTILITIES SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 13th

$13.3 Billion | Share of Total 2.7%

### NUMBER OF FIRMS

Industry Rank | 17th

339 | Share of Total 0.3%

### CURRENT EMPLOYMENT

Industry Rank | 18th

17,100 | Share of Total 0.5%

### INDUSTRY WAGES

Industry Rank | 16th

$2.6 Billion | Share of Total 1.3%

### 10-YEAR JOB GAINS

Industry Rank | 17th

1,000 | Share of Total 0.2%

### AVERAGE ANNUAL WAGE

Industry Rank | 2nd

$126,568

The utility sector includes electric power generation (fossil fuel, nuclear, wind, solar, geothermal); electric power transmission, control and distribution; natural gas transmission and distribution; and privately-owned water and sewage systems.

Over the past 10 years, the number of power generators and water/sewage companies has ticked up, but the number of natural gas firms has slipped. Technology (remote metering, online customer service portals) and outsourcing have curtailed the workforce needed to serve a growing population. Employment growth has been marginal over the past 10 years, with the sector adding only 700 jobs. And pending rulings by the Public Utility Commission of Texas may reduce the return on investment some utilities receive, forcing them to restructure. That should be offset by gains elsewhere in the sector. The forecast calls for employment in utilities to remain flat in ’20.

# INFORMATION

## INFORMATION SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 16th

$8.9 Billion | Share of Total 1.8%

### NUMBER OF FIRMS

Industry Rank | 16th

1,221 | Share of Total 0.9%

### CURRENT EMPLOYMENT

Industry Rank | 17th

30,000 | Share of Total 0.9%

### INDUSTRY WAGES

Industry Rank | 17th

$2.5 Billion | Share of Total 1.2%

### 10-YEAR JOB GAINS

Industry Rank | 18th

-4,000 | Share of Total -0.6%

### AVERAGE ANNUAL WAGE

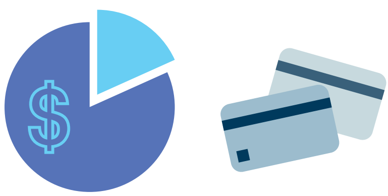
Industry Rank | 7th

$73,840

The information sector includes cable services, data processing, libraries, motion picture and video studios, movie theatres, newspapers, magazine and book publishers, radio and television broadcasting, sound studios, satellite, and wired and wireless telecommunications.

The sector has struggled for years. Houston has nine fewer sound recording studios (a loss of nearly 170 jobs), 16 fewer data processing and web hosting services (a loss of more than 600 jobs), 52 fewer newspaper, magazine and book publishers (a loss of nearly 750 jobs), and 272 fewer wired and wireless telecommunications firms (a loss of nearly 5,000 jobs) than it did 10 years ago. And although the number of radio and television stations has grown from 70 to 76 over the decade, total broadcasting employment has dropped by nearly 600 jobs.

Mergers and acquisitions, traditional media competing with web-based media, workers replaced by technology, and the need to cut operating costs has reduced the number of firms and employees in the sector. Information has lost jobs in seven of the past 10 years. The telecommunications subsector has lost jobs in eight out of the past 10. This forecast anticipates that trend will continue and calls for the sector to lose another 200 jobs by the end of ’20.



# FINANCE AND INSURANCE

## FINANCE AND INSURANCE SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 10th

$22.3 Billion | Share of Total 4.6%

### NUMBER OF FIRMS

Industry Rank | 11th

5,473 | Share of Total 4.2%

### CURRENT EMPLOYMENT

Industry Rank | 12th

105,400 | Share of Total 3.3%

### INDUSTRY WAGES

Industry Rank | 10th

$10.7 Billion | Share of Total 5.2%

### 10-YEAR JOB GAINS

Industry Rank | 13th

16,400 | Share of Total 2.5%

### AVERAGE ANNUAL WAGE

Industry Rank | 4th

$96,980

The finance and insurance sector includes banks, savings institutions, credit unions, consumer finance companies, international trade financing, mortgage brokers, payday lenders, investment banks, securities brokerages, investment advisors, insurance carriers, insurance brokers, claims adjusters and pension funds.

Ten years have elapsed since the ’08–’09 financial crisis. Though the region has 125 fewer bank branches (down 8.1 percent) and 400 fewer employees (down 1.2 percent), deposits have more than doubled in the past decade.

Job losses have also occurred at savings institutions, property and casualty insurers, investment funds, loan servicing operations and credit card issuers; the group lost nearly 4,000 jobs over the decade. The losses resulted from industry restructuring, merger activity, tech innovations, and firms relocating to other metros. If not for substantial gains elsewhere—claims adjusting, consumer lending, commodities brokers, insurance agencies, sales financing and securities traders—growth would have been substantially less.

The banking industry, however, is actually the healthiest it’s been in years. Analysts at Bloomberg forecast the industry to log record profits this year. Ten years of sustained economic growth, a favorable U.S. regulatory climate, new technologies, and benefits of the 2017 Tax Cuts and Jobs Act have driven those profits.

Prior to the financial crisis, banks competed with each other. Now they face a host of challenges that bypass traditional banking, (e.g., crowd sourcing, digital currencies, internet payment systems, online lenders, and peer-to-peer lending). Automation has eliminated many routine tasks. Deposits can be made by capturing an image of a check with a cellphone. Some insurance companies allow minor auto claims to be filed the same way. But this hasn't eliminated the need for brick-and-mortar branches and personal interaction, only reduced it.

The recent interest rate cuts by the U.S. Federal Reserve should translate into lower rates at commercial banks, and the lower rates should stimulate loan demand. An October '19 survey by the Federal Reserve Board of Governors found that despite concerns of slower growth, banks have not tightened their lending standards for commercial and industrial loans.

Next year will look a lot like '15 and '16, with loan activity focused outside energy and energy-related manufacturing. Recent reports of an improving U.S. economy should bolster business and consumer confidence, in turn translating into stronger demand for banking and financial services. The aging of Houston's population will also provide opportunities for clients concerned about wealth preservation and wanting to prepare for intergenerational wealth transfers.

Though Houston's banking, finance and insurance subsectors are the healthiest they have been in a decade, sector trends and local conditions will suppress job growth next year. The forecast calls for the sector to create 1,400 jobs in '19.


# REAL ESTATE AND RENTAL AND LEASING

## REAL ESTATE AND RENTAL AND LEASING SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 2nd

$44.4 Billion | Share of Total 9.1%

### NUMBER OF FIRMS

Industry Rank | 10th

5,597 | Share of Total 4.3%

### CURRENT EMPLOYMENT

Industry Rank | 15th

63,400 | Share of Total 2.0%

### INDUSTRY WAGES

Industry Rank | 14th

$4.3 Billion | Share of Total 2.1%

### 10-YEAR JOB GAINS

Industry Rank | 14th

13,800 | Share of Total 2.1%

### AVERAGE ANNUAL WAGE

Industry Rank | 11th

$66,040

Real estate includes the sale or leasing of properties (*e.g.*, single-family homes, apartments, office buildings, warehouses, retail centers) and providing services to the industry (*e.g.*, appraisal, escrow, property management). Rental and leasing involves renting appliances, construction equipment, consumer electronics, formal wear, furniture, home health apparatus, industrial equipment, office machinery and vehicles. About two-thirds of the jobs in the sector are in real estate and one-third in rental and leasing.

Office lease activity through September '19 was up slightly compared to the same period in '18. Tenants are looking for deals in an overbuilt market. The same holds true for warehouse/industrial space. The pace of home construction hasn't let up and builders haven't reported reductions in model home traffic. The residential resale market, however, faces challenges from tech-driven enterprises like iBuyer, Opendoor and Homeward, all firms which reduce the need for traditional brokers.

Owners need to lease, manage and sell all the new office, industrial, and retail space they've thrown on the market. The same goes for the pending glut in apartments. Construction activity won't taper off until the end of the year, supporting the demand for heavy equipment rentals. Consumers continue to rent vehicles, furniture and appliances. Based on these factors, the forecast calls for real estate rental and leasing to create 1,200 jobs in '20.

# PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES

## PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 5th

$39.5 Billion | Share of Total 8.1%

### NUMBER OF FIRMS

Industry Rank | 1st

20,224 | Share of Total 15.5%

### CURRENT EMPLOYMENT

Industry Rank | 5th

252,900 | Share of Total 7.9%

### INDUSTRY WAGES

Industry Rank | 1st

$23.7 Billion | Share of Total 11.6%

### 10-YEAR JOB GAINS

Industry Rank | 3rd

76,400 | Share of Total 11.6%

### AVERAGE ANNUAL WAGE

Industry Rank | 3rd

$101,296

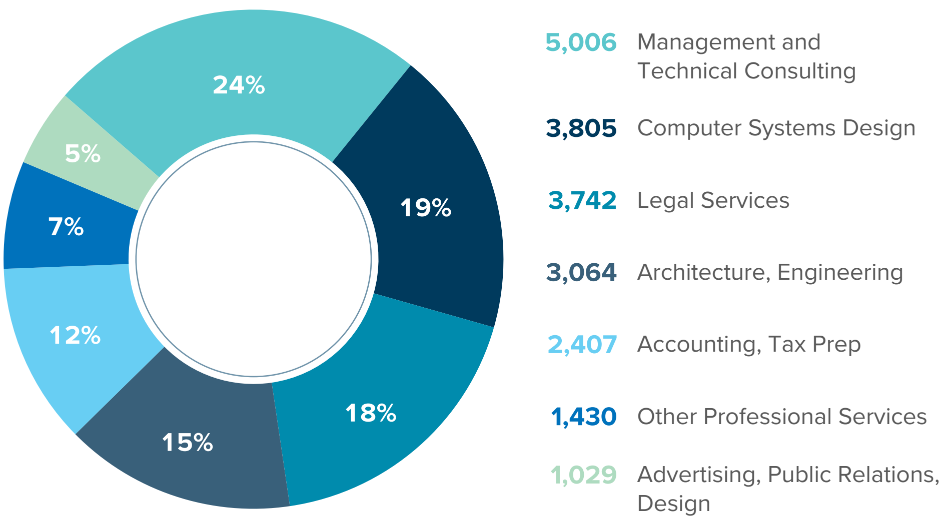
One in six Houston firms operates in professional, scientific and technical services. Most jobs in the sector require a college degree, a high level of expertise, intensive training, or all three. It's the domain of accountants, lawyers, architects, engineers, marketing professionals, management consultants and tech wizards. Professional services is one of a handful of sectors in Houston where average annual compensation exceeds $100,000.

Job growth here tracks the energy industry, but not as closely as it did in the past. During the first Fracking Bust ('15 and '16), accounting, legal and management consulting grew, albeit marginally. These subsectors held up well because they found business outside of energy or outside of the region, or both, to keep their Houston offices busy. Architecture and engineering, which straddles energy and construction, didn't fare as well, losing 11,000 jobs during the bust. Many companies scaled back IT investments to save money, and the subsector lost 4,800 jobs in the downturn.

Anecdotal evidence suggests activity in the sector has begun to slow again. The forecast assumes that strategies employed in the first fracking bust will support professional services in the second. Other factors will come into play as well. A rise in the number of mergers, bankruptcies, and asset dispositions should keep accounting and legal firms busy. Efforts to expand into new markets and find new clients should keep local advertising, marketing and public relations firms occupied. The need to improve operational efficiency and cut costs should support more billable hours for management consulting firms. And any firm that fails to upgrade its tech infrastructure runs the risks of falling behind its competitors. The forecast calls for professional, scientific, and technical services to create a modest 4,700 jobs in '20.

### DISTRIBUTION OF PROFESSIONAL SERVICES FIRMS

Houston MSA, Q2/19




Source: Texas Workforce Commission

# ADMINISTRATIVE AND SUPPORT SERVICES

## ADMINISTRATIVE SUPPORT AND WASTE MANAGEMENT SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 12th

$17.1 Billion | Share of Total 3.5%

### NUMBER OF FIRMS

Industry Rank | 8th

7,355 | Share of Total 5.6%

### CURRENT EMPLOYMENT

Industry Rank | 8th

229,800 | Share of Total 7.2%

### INDUSTRY WAGES

Industry Rank | 9th

$10.9 Billion | Share of Total 5.3%

### 10-YEAR JOB GAINS

Industry Rank | 4th

62,900 | Share of Total 9.6%

### AVERAGE ANNUAL WAGE

Industry Rank | 14th

$50,180

The full title for the sector is administrative and support and waste management and remediation services. It might also be referred to as “Armed Guards, Outsourcing, and Trash Pickup” since many of the jobs involve contracting with third parties to provide security, back office and facilities support, temporary help and waste collection.

Four subsectors count for the bulk of the jobs: employment services, 35.5 percent; building services, 23.4 percent; security, 11.8 percent; and back office support, 11.4 percent. Nine out of every 10 jobs created in admin/waste management over the past 10 years have been in one of these subsectors. That’s not surprising, considering businesses have outsourced many functions to control expenses and focus on their core mission.

One subsector bucking this trend is business support services, which has 15 fewer firms and 3,500 fewer employees than it did 10 years ago. This is the result of 40 collections agencies either shutting down or relocating outside the region, affecting nearly 2,300 jobs in the process. The remainder of the job losses have come from copying, court reporting, document preparation, telephone answering, and miscellaneous business services. Alas, there’s been almost no change in the count of telemarketing bureaus and the number of employees working at them.

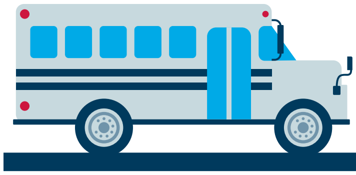
Houston has four fewer travel agencies than it did in ’09, a remarkable record of survival given the inroads that websites like Expedia, Travelocity and Priceline have made into the business. The agencies that survived have fewer offices—222 in Q2/19 versus 353 in Q2/09. However, employment is off only 39 jobs over the period.

The number of janitorial services has nearly doubled over the decade (586 in Q2/19 versus 1,020 in Q2/19). Two factors have likely influenced this growth. First, Houston has added nearly 44 million square feet of office space since ’09, all of which needs to be cleaned regularly. Second, the capital requirements to start a janitorial service are low compared to other business.

The number of privately-owned recycling facilities has doubled, from 15 in Q2/09 to 31 in Q2/19. The sector was never a major employer (384 jobs in Q2/09), but it employs even fewer today (223 in Q2/19). Presumably, automation has reduced the labor needed to sort and recycle materials from garbage. Conversely, the region has 10 fewer privately operated landfills, but the employee count has risen by a third (2,517 jobs in Q2/09 vs 3,331 in Q2/19).

The employment services subsector (temporary help and job placement) is a bellwether for overall growth. Employers, reluctant to hire as the economy emerges from a recession, engage contract workers to handle the pickup in demand. When the recovery is well underway, those contract workers are offered permanent positions. And when the economy begins to slow again, any contract workers are the first to be laid off. That’s what’s happening now. The subsector lost jobs in ’15 and ’16, recorded a net gain in ’17, then lost jobs again in ’18. The employment services subsector will likely finish ’19 flat or with moderate job losses.

The forecast for administrative and support services aligns with overall expectations for the economy—slower but steady growth. The sector should create approximately 5,000 jobs in ’20.



# EDUCATIONAL SERVICES

## EDUCATIONAL SERVICES SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 17th

$3.7 Billion | Share of Total 0.8%

### NUMBER OF FIRMS

Industry Rank | 13th

1,919 | Share of Total 1.5%

### CURRENT EMPLOYMENT

Industry Rank | 14th

63,700 | Share of Total 2.0%

### INDUSTRY WAGES

Industry Rank | 5th

$15.0 Billion | Share of Total 7.3%

### 10-YEAR JOB GAINS

Industry Rank | 12th

21,500 | Share of Total 3.3%

### AVERAGE ANNUAL WAGE

Industry Rank | 13th

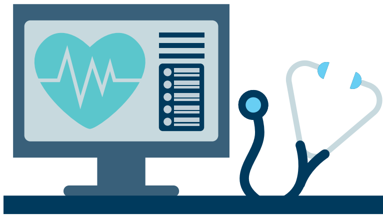
$52,468

The educational services sector focuses on private education only. School districts and community colleges are considered part of local government. The University of Houston, Texas Southern University and the UT Health Science Center are part of state government. Private educational services include art classes, computer training, driving schools, exam prep, language classes, private elementary and high schools, private universities, proprietary technical schools and vocational training, tutoring, and testing services.

Though the region has recently seen an uptick in management, business and computer schools, the subsector employs 250 fewer workers than 10 years ago, those jobs presumably lost to online training. The number of "miscellaneous" schools, (*e.g.*, religious, coaching, fine art, firearm, first aid, public speaking, self-defense, survival, and yoga) has nearly doubled from 606 in Q2/09 to 1,079 in Q2/19. These tend to be classic small businesses. Two-thirds have fewer than 10 employees.

The educational services sector tends to perform better than the economy as a whole. School enrollments rise for several reasons: a growing school-age population, workers seeking to upgrade their skills, and parents seeking alternatives to public education. Growing enrollments require more instructors, administrators, and tutors. Parents still want their children to perform better on the soccer fields, make better grades, and score higher on SAT and ACT tests, so the need for exam prep and testing services continues to grow. Even during the downturns of the past 20 years, educational services could be relied on to add 1,000 to 2,500 jobs per year. The forecast assumes nothing to derail this trend, but errs on the side of caution, and calls for the sector to add 1,600 jobs in '20.

*Note: The U.S. Census Bureau (Census), U.S. Bureau of Labor Statistics (BLS), and the U.S. Bureau of Economic Analysis (BEA) define educational services differently. Census and BEA include public and private institutions; BLS incudes only private institutions. This creates some inconsistencies in the data, but those inconsistencies have no material impact on the Partnership's analysis.*



# HEALTH CARE AND SOCIAL ASSISTANCE

## HEALTH CARE AND SOCIAL ASSISTANCE SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 9th

$23.1 Billion | Share of Total 4.7%

### NUMBER OF FIRMS

Industry Rank | 2nd

17,800 | Share of Total 13.6%

### CURRENT EMPLOYMENT

Industry Rank | 2nd

344,200 | Share of Total 10.7%

### INDUSTRY WAGES

Industry Rank | 3rd

$20.8 Billion | Share of Total 10.2%

### 10-YEAR JOB GAINS

Industry Rank | 2nd

83,800 | Share of Total 12.8%

### AVERAGE ANNUAL WAGE

Industry Rank | 12th

$55,692

Health care and social assistance has endured lean years, adding fewer than 2,900 jobs in ’17, and robust years, creating nearly 11,000 jobs in ’14. Level the peaks, fill in the valleys, and the sector has averaged 8,500 new jobs per year over the past 10 years. The average would be higher still if the area’s hospitals, clinics, and doctors’ offices could fill all their job openings. Officials with the Texas Medical Center (TMC) frequently note that TMC always has 10,000 or more job openings. That doesn’t appear to be an exaggeration. The Conference Board’s November Help Wanted Index listed 4,900 openings for nurses alone in Houston.

Though the TMC garners much of the region’s attention, its 106,000 employees represent only a third of the health care/social service professionals in Houston. The remaining two-thirds are spread throughout the region. To refine matters further, only 75 percent of those employed in health care work in a doctor’s office, hospital or clinic. The remaining 25 percent work in social services such as day care, emergency relief, and teen outreach.

Several factors drive health care:

#### Population

Metro Houston added 1.3 million residents over the past decade. Though gains have slipped in recent years, the region should add another 100,000 residents or more in ’19 and a like amount in ’20. Each new resident represents a new customer for the region’s health care service providers.

#### Job Growth

Houston has added 640,000 jobs over the decade. The strongest growth has been in professional, scientific and technical services, finance and insurance, manufacturing, and public education (*i.e.*, school districts and higher education), sectors that typically offer benefits packages that include health insurance.

#### Income Growth

More than 750,000 households in Houston reported incomes of $100,000 or more in ’18, up from 450,000 households 10 years ago. Studies have shown that people with higher incomes are more likely to seek treatment when an illness or medical condition arises.

#### High Birth Rates

Houston doctors delivered 100,000 babies in ’18 and about 950,000 over the past 10 years. Each baby is a new health care consumer. They will frequent pediatricians for checkups, vaccinations and school physicals well into their teens.

#### Aging Populations

The number of residents over age 65 has increased from around 465,000 in ’08 to 780,000 in ’18. The afflictions that come with growing old (*e.g.*, cataracts, heart disease, osteoporosis, type 2 diabetes, hypertension, and Alzheimer’s) require regular visits to the doctor and sometimes the hospital.

#### Longer Life Expectancies

According to the Centers for Disease Control and Prevention, Americans who reach the age of 65 can expect to live another 20 years. Longer lifespans translate into more years as a health care consumer.

### Increases in Chronic Diseases

Approximately 3.0 million people in Texas, or nearly 15 percent of the adult population, have diabetes. Nearly 30 percent of all Houston-area adults are obese. The cost of treating these maladies adds up. According to the Milken Institute, Texas spent $85 billion treating chronic diseases such as these in '16.

### Increases in the Number of Insured

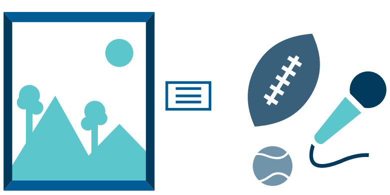
The Affordable Care Act (ACA) required most employers to offer health insurance and individuals without an employer-sponsored plan to buy it of their own accord. Today, 81.4 percent of all Houstonians are covered, up from 75.5 percent in '08. Those mandates, along with population growth, translate into 1.3 million more Houstonians with coverage than 10 years ago.

While the market continues to grow, health care delivery has changed dramatically. Twenty-five years ago, 60 percent of all health care jobs in Houston were in a hospital. Today, only 38 percent are. Patients now receive treatment at walk-in clinics, free-standing emergency centers, through a phone consultation, or with a physician via Skype. Google and Apple are also investigating ways to deliver health care via the internet through mobile devices.

Health care providers are also dealing with uncertainty from Washington. Several Democratic presidential candidates have pledged to radically change the system should they be elected. However, any changes wouldn't occur until '21 or later. Republicans have frequently spoken of the need to dismantle the ACA, and they have begun to chip away at it. The Tax Cuts and Jobs Act of 2017 removed the penalty on individuals for not having health insurance. Without the penalty, enrollments will likely slip over time.

Health care providers also face pressure from consumers, insurance companies, and the government to reduce costs. In November, the Trump Administration issued a rule compelling all hospitals to publicize the rates they negotiate with insurers for the services they provide, including drugs, facility fees, and care by doctors. The intent is to provide more cost transparency to consumers when they shop for health care services.

Population and employment growth will mitigate some of the uncertainty, but the sector's likely to see weaker job growth next year. The forecast calls for health care and social assistance to add 7,900 jobs in '19.



## ARTS, ENTERTAINMENT, RECREATION

### ARTS, ENTERTAINMENT, RECREATION SNAPSHOT

#### CONTRIBUTION TO GDP

Industry Rank | 18th

$3.4 Billion | Share of Total 0.7%

#### NUMBER OF FIRMS

Industry Rank | 14th

1,547 | Share of Total 1.2%

#### CURRENT EMPLOYMENT

Industry Rank | 16th

34,400 | Share of Total 1.1%

#### INDUSTRY WAGES

Industry Rank | 18th

$1.6 Billion | Share of Total 0.8%

#### 10-YEAR JOB GAINS

Industry Rank | 16th

7,800 | Share of Total 1.2%

#### AVERAGE ANNUAL WAGE

Industry Rank | 16th

$41,964

The sector could also be called "culture, sweat, and leisure." It includes the performing arts, museums, gyms, fitness centers, outdoor activities, and spectator sports. The sector is dominated by small organizations, with two-thirds (68.8 percent) having fewer than 10 employees.

The sector's value to the community goes far beyond economics. Quirky museums and small performance groups add to quality of life here. The fitness centers keep us healthy.

Houston wouldn't be a world class city without the Houston Grand Opera, Houston Symphony Orchestra, Houston Ballet, Alley Theatre or the Museum of Fine Arts. And Houston's art community and sports teams attract out-of-town visitors who spend their paychecks with merchants, restaurants, and museums in Houston.

Job growth has been modest in recent years, with more than half the gains occurring at golf courses and country clubs, inside fitness and recreational sports centers, and in the catch-all "other amusement and recreation industries," the latter including shooting ranges, billiard parlors, dance halls, riding stables, and coin-operated arcades.

Growth in the "sweaty" side of the industry aligns with Houstonians' growing commitment to healthier lifestyles. Fitness centers seem to pop up all over the region. The number of gyms has grown from 402 in Q2/09 to 626 in Q2/19. Aging baby boomers are concerned with staying healthy, physically fit, and independent, and they have become the largest demographic group of health club members. Membership among young adults has also grown steadily, driven by concern about physical fitness and funded by rising incomes.

However, the entry of boomers into their leisure years has been slow to translate into a surge in demand for art. According to TWC, Houston had 123 museums and performing arts groups in Q2/19, up from 105 in Q2/09. While computers and the internet may have improved productivity in the back office, they haven't brought efficiencies to the performance side of the business. It takes as many musicians to perform a Beethoven symphony or dance Swan Lake today as it did 50 years ago.

Employment in spectator sports has held stable over the years. League rules limit the number of players on teams, and financial realities limit the number of employees in the back office. A new sports franchise would help, but Houston already has major league baseball (Astros), football (Texans), basketball (Rockets), soccer (Dynamo, Dash), and rugby (SaberCats). The only major sport missing is hockey. Houston has hosted several hockey franchises in the past, but few Houstonians grew up watching the sport, and fewer playing it, so the city hasn't been able to establish a large enough fan base to support a professional team.

Future growth depends on several factors. Arts, recreation, and sports is a consumer-oriented sector. It benefits from population, income, and workforce growth. Ticket sales are important not just for revenue, but also to demonstrate to sponsors and underwriters the organization's popularity in the community. It's too soon to tell whether weakness in oil and gas, and therefore reduced profitability, reduces corporate support of the arts or sponsorships of local sports teams.

The Partnership's forecast calls for the sector to add 1,100 jobs in '19.

HOTEL

# ACCOMMODATION AND FOOD SERVICES

## ACCOMMODATION AND FOOD SERVICES SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 14th

$12.1 Billion

Share of Total 2.5%

### NUMBER OF FIRMS

Industry Rank | 6th

9,662

Share of Total 7.4%

### CURRENT EMPLOYMENT

Industry Rank | 4th

297,100

Share of Total 9.3%

### INDUSTRY WAGES

Industry Rank | 12th

$6.3 Billion

Share of Total 3.1%

### 10-YEAR JOB GAINS

Industry Rank | 1st

93,600

Share of Total 14.3%

### AVERAGE ANNUAL WAGE

Industry Rank | 18th

$21,944

Houston First, the city agency responsible for managing the city-owned performance halls and convention venues as well as marketing Houston as a tourist destination, hopes to bring 25 million visitors to the city in ’20. That would be a sizable bump from the estimated 23.8 million visitors in ’19. If past performance is an indicator of future results, those 25 million visitors will spend in excess of $10 billion at local hotels, restaurants, stores, museums, airports and with Houston’s Uber, Lyft, and taxi drivers.

According to CBRE, metro Houston had approximately 944 hotels and motels with over 92,600 total rooms as of Q2/19. Another 19 hotels with over 1,900 rooms were slated to open in ’19 and 45 with nearly 4,500 rooms in ’20. The new hotels will need desk clerks, bell hops and cleaning staff.

Houston had nearly 11,700 food service and drinking places as of Q2/19. They offer nearly 160 categories of cuisine, including Afghan, Cajun, Chinese, Georgian, Greek, Indian, Italian, Mexican, Polish, and Thai. Though restaurants have one of the highest failure rates among business startups, Houston nets 250 to 350 new eateries and bars each year. Even during the recession years of ’01–’03 and ’08–’09, the region added an average of 180 restaurants per year.

The forecast assumes that even with a slowing economy the region will add another 200 restaurants and bars. These wining and dining places will need cashiers, cooks, dishwashers, wait staff and maître des.

The forecast calls for accommodation and food services to add 6,200 jobs in ’20.

# OTHER SERVICES

## OTHER SERVICES SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 15th

$9.6 Billion | Share of Total 2.0%

### NUMBER OF FIRMS

Industry Rank | 3rd

14,048 | Share of Total 10.7%

### CURRENT EMPLOYMENT

Industry Rank | 11th

121,000 | Share of Total 3.8%

### INDUSTRY WAGES

Industry Rank | 15th

$3.8 Billion | Share of Total 1.9%

### 10-YEAR JOB GAINS

Industry Rank | 10th

28,100 | Share of Total 4.3%

### AVERAGE ANNUAL WAGE

Industry Rank | 15th

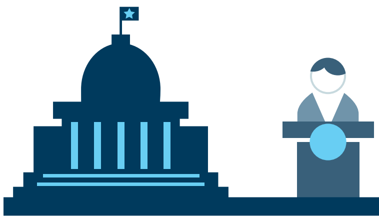
$43,680

The other services sector is among the smallest in Houston. Most firms have fewer than 10 employees, another example of the classic small businesses.

Other services includes repair shops (appliance, auto, electrical, and industrial machinery), personal care (barber, beauty, nails), miscellaneous businesses (dry cleaners, funeral parlors, parking, pet grooming, and weight loss clinics), nonprofits (business, civic, political, professional, social advocacy), and religious organizations (churches, synagogues, temples, mosques).

Most of the subsectors have expanded over the past 10 years, adding firms, wages, and jobs. However, Houston has fewer dry cleaners than 10 years ago. The region is not unique. Casual office dress codes, relaxed startup and tech workplace attire, smoking bans in bars and restaurants, and fast-fashion clothing made from machine-washable materials has led to a drop in dry cleaners across the nation. Houston also has fewer furniture repair shops than 10 years ago. The popularity of self-assembled furniture and the plethora of discount retailers have made it as affordable to replace as to restore a damaged table, chair or sofa, thus the decline in Houston's furniture repair business.

Other services tends to track the overall economy, with wages and employment rising and falling with population, income, and employment growth. With activity expected to slow next year, job growth will fall below the long-term average. The forecast calls for other services to create 1,700 jobs in '20.



# GOVERNMENT

## GOVERNMENT SNAPSHOT

### CONTRIBUTION TO GDP

Industry Rank | 6th

$37.8 Billion | Share of Total 7.7%

### NUMBER OF FIRMS

Industry Rank | 18th

259 | Share of Total 0.2%

### CURRENT EMPLOYMENT

Industry Rank | 1st

421,000 | Share of Total 13.1%

### INDUSTRY WAGES

Industry Rank | 13th

$5.3 Billion | Share of Total 2.6%

### 10-YEAR JOB GAINS

Industry Rank | 9th

34,600 | Share of Total 5.3%

### AVERAGE ANNUAL WAGE

Industry Rank | 10th

$68,380

Government employment falls into three categories—federal, state, and local. A sizeable portion of the state and local sectors includes education, (*i.e.*, state-funded universities and independent school districts.

Over the past 10 years, federal employment in Houston has remained relatively flat, state employment has grown by nearly 11,000 jobs, and local employment by nearly 27,000 jobs. Ninety-one percent of the state gains and 71 percent of the local gains have been in education.

The need to handle larger school enrollments drives the need for more teachers, classroom aids and support staff; an expanding population drives the need for more public servants; an expanding tax base provides the revenues to hire additional peace officers and fire fighters and fill those ever-present potholes. Three examples:

- Over the decade ('07–'08 and '17–'18), school enrollments in the metro area grew by more than 230,000 students. Local school districts added 11,000 teachers to educate those students.
- Over five years, the market value of all property in Harris County grew 51.0 percent, from $386.3 billion in '12 to $585.3 billion in '17. The county added another 2,200 employees, a 15.1 increase, over the period.
- Since '09, Houston has added 1.3 million residents. The public sector (federal, state and local) has added 34,600 employees.

The employment forecast for this sector assumes that population growth will continue; cities and counties will add personnel to handle the larger constituencies; school enrollments will continue to climb; school districts hire more educators to serve the larger enrollments; tax revenues increase; and attitudes toward local government remains positive. On that basis, the forecast calls for the government sector to add 6,300 jobs in '20.

# IN LIGHT OF THE CURRENT DATA

The Partnership's forecast for 42,300 jobs in '20 may seem low in light of recent Texas Workforce Commission (TWC) reports that the region created 80,400 jobs in the 12 months ending October '19. One must take those reports with a grain of salt.

Note that TWC typically overestimates job growth in an expansion and underestimates losses in a contraction. That was the case in '18, when TWC originally reported metro Houston created 108,300 jobs in the 12 months ending December '18, only to revise that down to 73,300 jobs several months later. Likewise, TWC first estimated the region created 23,200 jobs in '15, only to adjust that to a *loss* of 2,500 jobs in a later report.

Why the revisions? The jobs reports that TWC releases throughout the year are based on a survey sample of area employers. Like any survey, it's subject to error, especially when TWC estimates employment for nonreporting establishments. But starting in the fall each year and concluding in the following spring, TWC reviews various administrative records, including the number of employees covered by unemployment insurance, to develop a more accurate picture of gains and losses during the year. Every March, TWC issues a new set of data covering employment over the previous 21 months. As noted, the new data often contain significant revisions.

That will likely be the case with the '19 estimates as well. TWC's current estimates paint a picture of regional job growth that doesn't comport with other economic indicators. TWC will likely pare 20,000 to 30,000 jobs from its current estimates, bringing growth for the year to a more reasonable 50,000 to 60,000. In anticipation of this revision, the Partnership has elected to base its '20 forecast on a more subdued picture of regional growth, especially in the wake of the current drop in the rig count, weak readings in the PMI, the lack of office absorption, and the current woes in retail.

**EXTENT OF BENCHMARK REVISIONS**

March Changes to Original Estimate, Jobs (000s)


| | '02 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 | '11 | '12 | '13 | '14 | '15 | '16 | '17 | '18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Original Jobs Estimate** | 4.5 | 4.0 | 34.9 | 42.5 | 73.1 | 59.8 | 57.3 | -92.5 | 13.1 | 75.8 | 84.5 | 82.0 | 120.6 | 23.2 | 14.8 | 46.0 | 108.3 |
| **Revised Jobs Count** | -1.3 | -11.4 | 39.5 | 91.3 | 106.9 | 91.0 | 21.5 | -110.5 | 50.5 | 82.9 | 117.5 | 90.0 | 116.7 | -2.5 | -2.4 | 54.2 | 73.3 |

Source: Texas Workforce Commission

# CONCLUSION

The situation Houston faces today is eerily similar to what it faced after the 1980s bust—an oversaturated real estate market, a bleak outlook for oil and gas, and the need for innovation to drive the economy forward. It took the better part of a decade for real estate to recover, and longer than that for oil and gas, but Houston recouped all the 221,000 jobs lost over five years (1982 – 1987) in just 39 months. Since then, the region has added 3.4 million residents, 1.5 million jobs, and more than $350 billion to regional GDP. And that's after enduring another five economic downturns.

Granted, the outlook for oil and gas remains bleak today. And developers need to stop erecting new warehouses and apartments. But Houston continues to create jobs. As of October '19, Houston's employment stood at 3.2 million, a record high for the region.

A pessimist might look at Houston's current situation and worry. An optimist might look at how Houston has managed similar situations in the past and see reasons for hope. Twain once said, "Better to be an optimist and wrong half the time than a pessimist and right all the time." Given Houston's resilient history, siding with the optimists is always the safe bet.

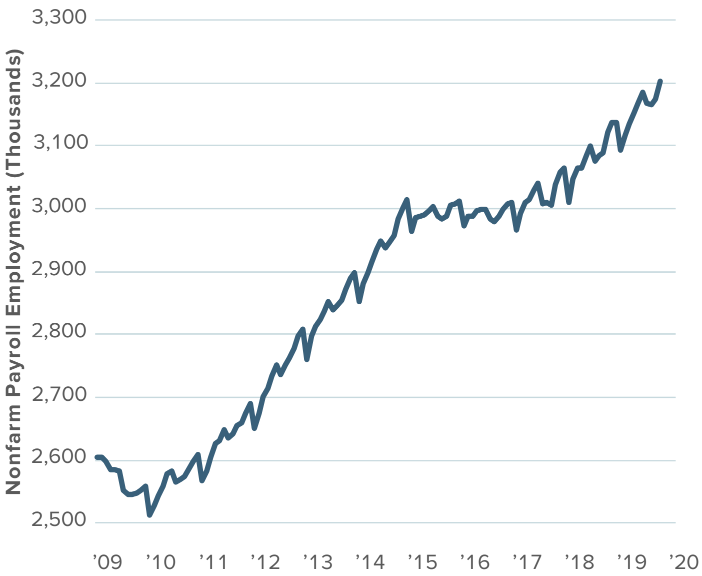
# A NOTE ABOUT THE INDUSTRY SNAPSHOTS

The contributions to GDP are most recent estimates from the U.S. Bureau of Economic Analysis except for the utility, transportation and warehousing, arts and entertainment, and hotel and restaurant sectors which are Partnership calculations based on historical BEA data. GDP data are for calendar year '17. GDP for calendar year '18 will be released on December 12, 2019. The number of firms in each sector comes from the Texas Workforce Commission's Quarterly Census of Employment and Wages (QCEW) and reflects data as of Q2/19. Employment data is from the Texas Workforce Commission and reflects TWC's estimates as of October '19. Wage data comes from the QCEW and reflects compensation for Q2/18 through Q2/19. Wages include bonuses, stock options, severance pay, profit distributions, cash value of meals and lodging, tips and other gratuities. Some values and percentages may not sum to the total due to rounding errors and omissions. Industry ranks range from 1 to 18.

# SOURCES

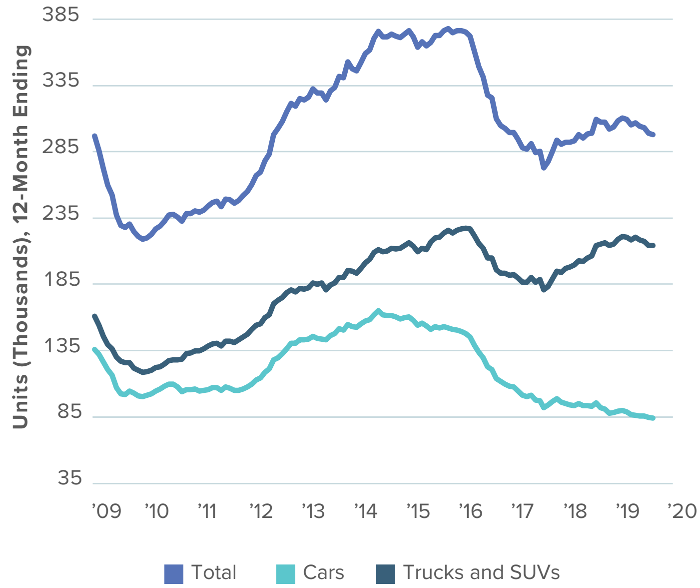
Data used in the analysis and forecast came from the following sources: American Chemistry Council, American Diabetes Association, Apartment Data Services, Baker Hughes, Bloomberg, CBRE, CenterPoint Energy, Centers for Disease Control and Prevention, City of Houston Aviation Department, City of Houston Building Permit Department, Colliers International, CoStar, Dodge Data & Analytics, FMI Corporation, Federal Deposit Insurance Corporation, Federal Reserve Bank of Dallas, Federal Reserve Bank of St. Louis, Gallup, Inc., Haynes and Boone, Houston Business Journal, Houston Chronicle, Houston Association of Realtors, Houston First, Houston: The Economy at a Glance, Houston Facts, Industrial Info Resources, Institute for Supply Management, JLL, John Burns Real Estate Consulting, MetroStudy, Meyers Research, Milken Institute, Moody's, NAI Partners, National Association for Business Economics, Organisation for Economic Co-operation and Development, Oil & Gas Journal, Port Houston, Retail Dive, TexAuto Facts, Texas Comptroller of Public Accounts, Texas Department of State Health Services, Texas Education Agency, Texas Medical Center, Texas Railroad Commission, Texas Workforce Commission, The Perryman Group, The Wall Street Journal, Transwestern, U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, U.S. Census Bureau, U.S. Energy Information Administration, U.S. Office of Management and Budget, WISERTrade and various company websites.

**NONFARM PAYROLL EMPLOYMENT ,** Houston MSA



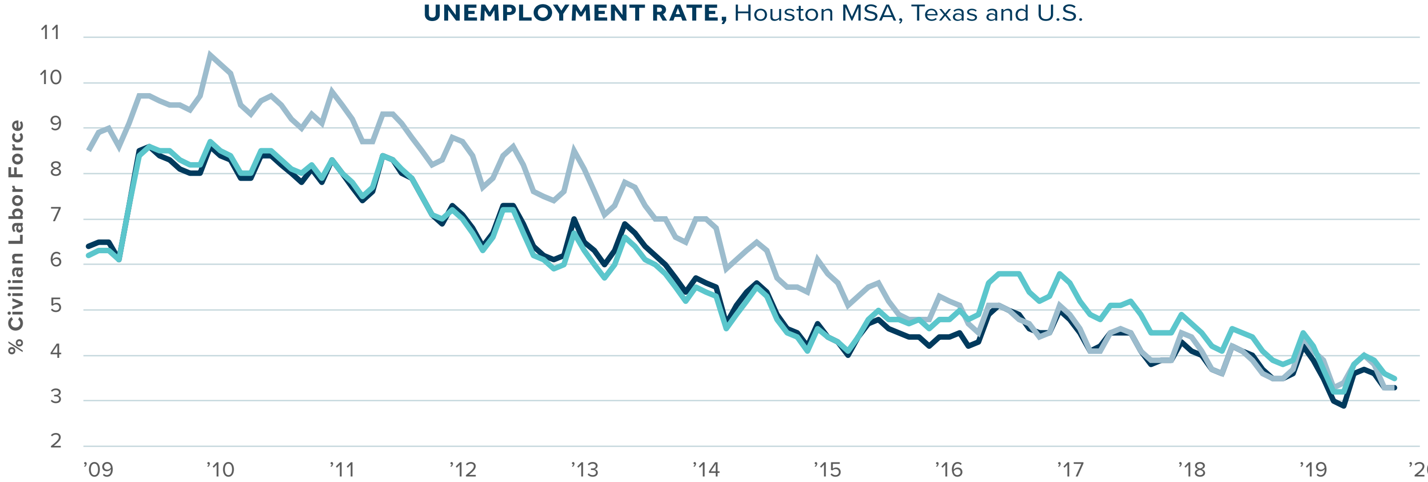

Source: Texas Workforce Commission, not seasonally adjusted

**NEW CAR, TRUCK AND SUV SALES,** Houston MSA



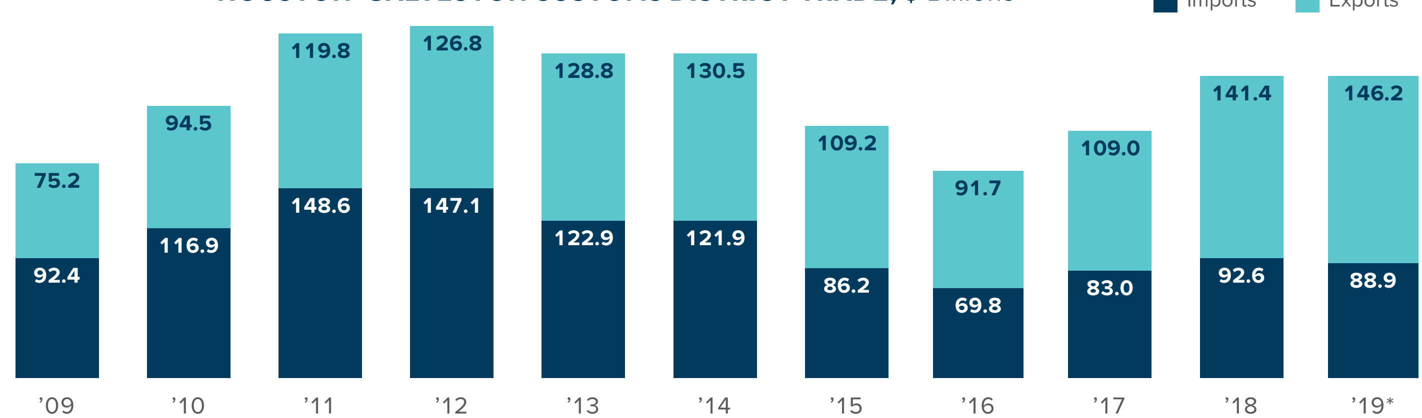

Source: *TexAuto Facts Report*, InfoNation, Inc., Sugar Land, TX

**UNEMPLOYMENT RATE,** Houston MSA, Texas and U.S.



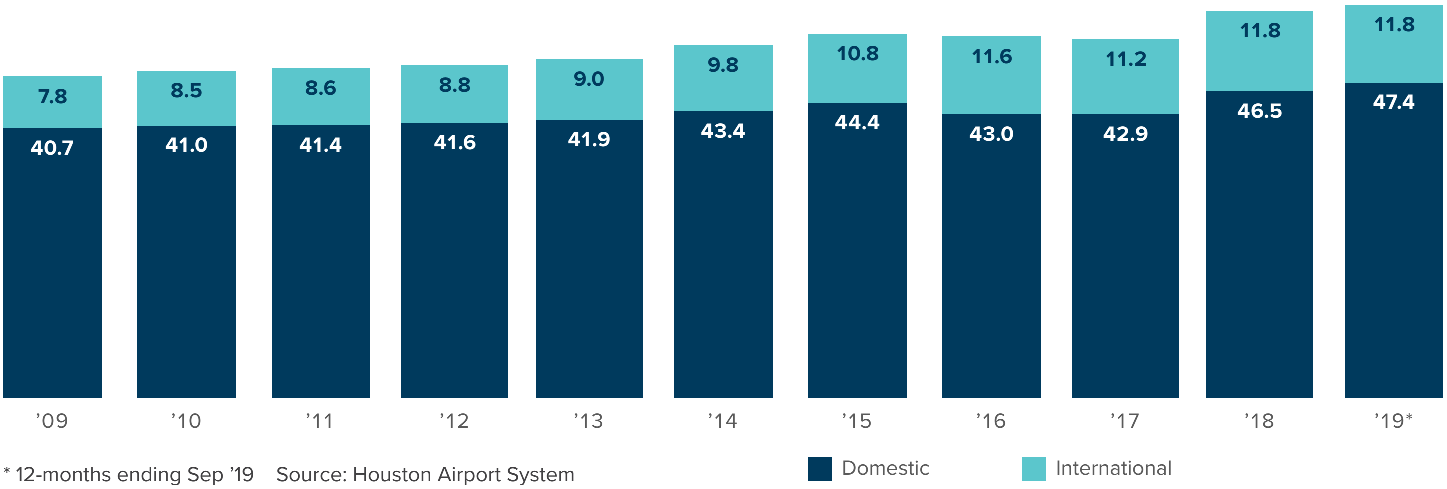

Source: Texas Workforce Commission, not seasonally adjusted

**HOUSTON-GALVESTON CUSTOMS DISTRICT TRADE,** $ Billions



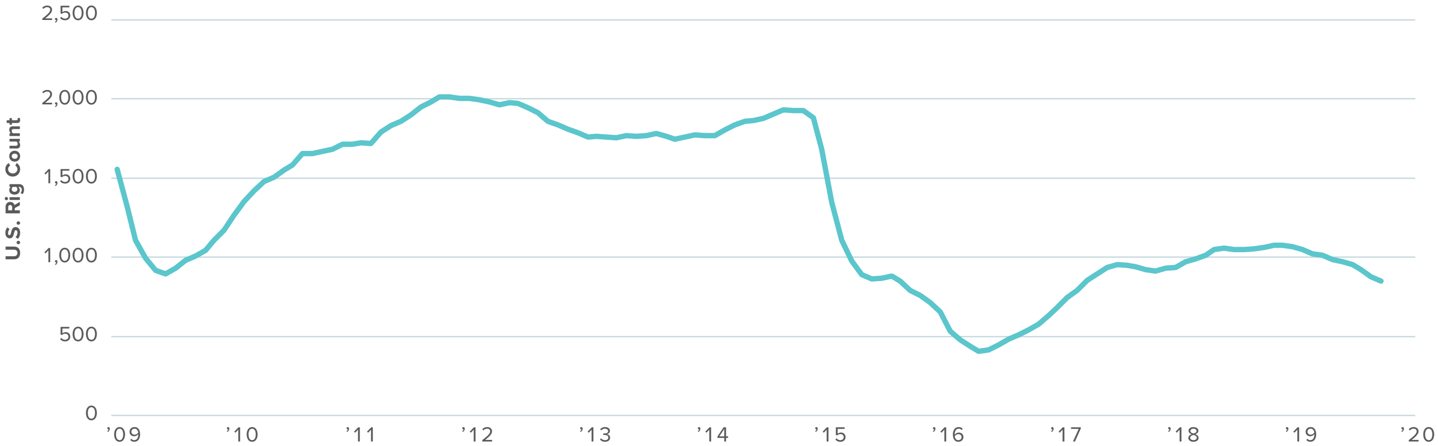

*12-months ending September '19 Source: WISERTrade from U.S. Census Bureau, Foreign Trade Division data
The Houston-Galveston Customs District includes the ports of Houston, Galveston, Freeport, Texas City, Corpus Christi, Port Lavaca, Bush Intercontinental Airport and Sugar Land Regional Airport

**DOMESTIC AND INTERNATIONAL PASSENGERS,** Millions



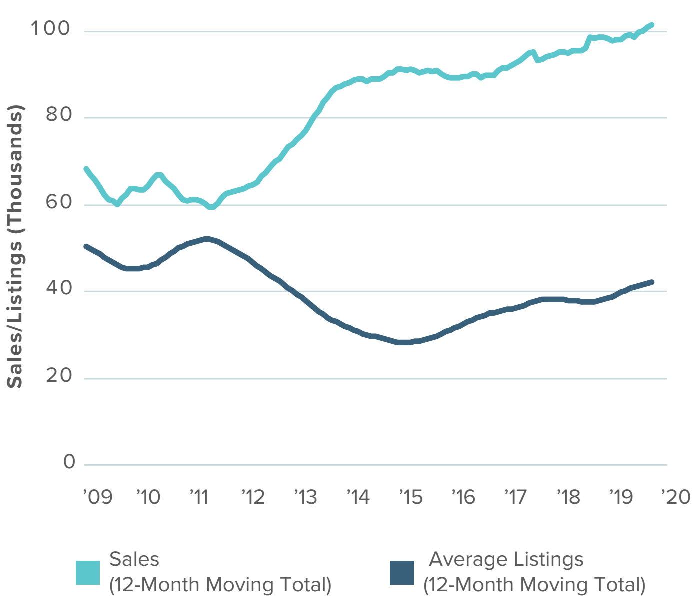

* 12-months ending Sep '19 Source: Houston Airport System

**U.S. RIG COUNT,** Active Domestic Rigs, Monthly Average



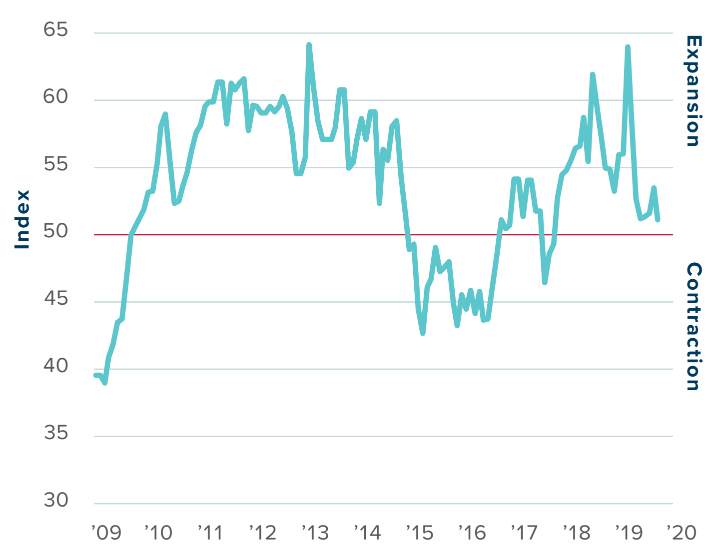

Source: Baker Hughes

**METRO HOUSTON RESIDENTIAL HOUSING MARKET**




Source: Houston Association of Realtors®

**PURCHASING MANAGERS INDEX**
Readings Above 50 Signal Short-Term Growth




Source: Institute for Supply Management-Houston

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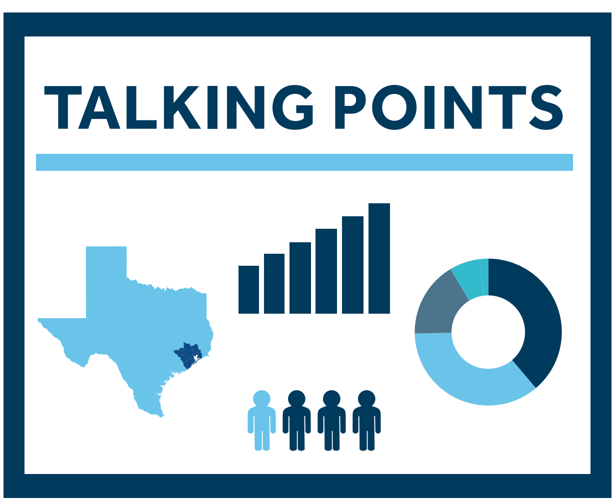


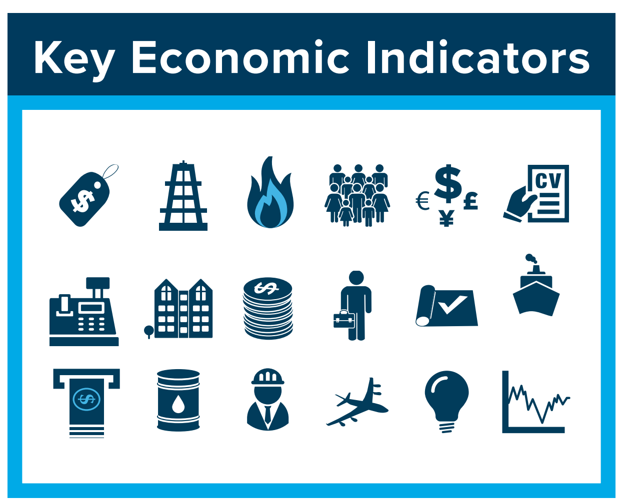

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