Publication Underwritten by:

WELLS FARGO
Houston Economic Highlights, a publication of the Greater Houston Partnership, is designed to impart a brief understanding of the changes in Houston’s economy over the past decade.

Each page is devoted to a single economic indicator or a few related indicators. In most cases, a key point and a few paragraphs that amplify the data appear on one page, and a table with historical data follows on the next.
Houston in Perspective

PEOPLE

The nine-county Houston Metropolitan Statistical Area (MSA) had a population of 6,772,470 residents as of July 1, 2016, according to estimates by the U.S. Census Bureau. If metro Houston were a state, it would have the 16th largest population in the U.S., ahead of Tennessee (6,651,194) but behind Massachusetts (6,811,779).

Harris County had a population of 4,589,928 residents as of July 1, 2016, according to estimates by the U.S. Census Bureau. If Harris County were a state, it would have the 26th largest population in the U.S., ahead of Kentucky (4,436,974) but behind Louisiana (4,681,666).

The city of Houston had a population of 2,303,482 residents as of July 1, 2016, according to estimates by the U.S. Census Bureau. If the city were a state, it would rank 36th in population in the U.S., ahead of New Mexico (2,081,015) but behind Kansas (2,907,289).

Among the nation’s metropolitan areas, the Houston MSA in 2016 ranked fourth in number of Hispanics (2,490,600), seventh in number of Blacks (1,144,051) and seventh in number of Asians (511,867), according to the Census Bureau’s American Community Survey.

ECONOMY

The U.S. Bureau of Economic Analysis estimates the Houston MSA Gross Domestic Product (GDP) at $478.6 billion in ‘16, making it the sixth largest U.S. metro economy. If Houston were a state, its GDP would rank 14th, after Michigan ($490.2 billion) and ahead of Washington ($476.8 billion). Metro Houston’s GDP slipped 4.9 percent from $496.7 billion in ‘15. The Houston region has a gross domestic product greater than 37 states and accounted for 30 percent of Texas’ GDP.

If the MSA were an independent nation, it would rank as the world’s 24th largest economy, behind Sweden ($511.4 billion), and ahead of Poland ($467.6 billion), according to the International Monetary Fund.

In ‘16, the Houston Association of Realtors Multiple Listing Service recorded closings on 91,528 properties (includes single-family homes, townhomes, condos, high rises, etc.), an average of one every six minutes.

In ‘16, Houston MSA automobile dealers sold 299,461 new cars, trucks and SUVs, an average of one every two minutes.

In ‘16, the Houston Airport System handled 54,546,393 passengers, an average of 104 passengers per minute.

In ‘16, the City of Houston issued building permits for construction valued at $6.6 billion, an average of $209 per second.

IN 2016

<table>
<thead>
<tr>
<th>Residents in Metro Houston</th>
<th>Residents in Harris County</th>
<th>Residents in the city of Houston</th>
<th>The Houston MSA ranks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,772,470</td>
<td>4,589,928</td>
<td>2,303,482</td>
<td>4th in number of Hispanics</td>
</tr>
<tr>
<td>91,528 property closings</td>
<td>299,461 new cars, trucks and SUVs sold</td>
<td>54,546,393 airport passengers</td>
<td>7th in number of Blacks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$6.6 billion in construction building permits</td>
<td>7th in number of Asians</td>
</tr>
</tbody>
</table>


**AREA**

The nine-county Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) covers 9,444 square miles – an area smaller than Maryland but larger than New Jersey.

Harris County covers 1,778 square miles – an area nearly half as large as Rhode Island.

At 655 square miles, the city limits of Houston could contain the cities of New York, Washington, D.C., Boston, San Francisco, Seattle, Minneapolis and Miami.

**GEOGRAPHY FOR THE DATA IN THIS PUBLICATION**

Metropolitan statistical areas are geographic delineations defined by the Office of Management and Budget for use by federal statistical agencies in collecting, tabulating and publishing federal statistics. These geographic delineations change over time, with the most recent change occurring in March 2013.

This publication contains data based on both of the 2009 and 2013 delineations for the Houston MSA, depending on the source. Where possible, every effort was made to revise data to reflect the new nine-county Houston MSA.

**2009 MSA DELINEATION FOR THE HOUSTON REGION:**

Houston - Sugar Land - Baytown Metropolitan Statistical Area (MSA) contains 10 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto and Waller.

**2013 MSA DELINEATION FOR THE HOUSTON REGION:**

Houston - The Woodlands - Sugar Land Metropolitan Statistical Area (MSA) contains nine counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller.
Payroll Employment

Total nonfarm payroll employment in Houston has rebounded from Hurricane Harvey and continues to grow at a moderate pace.

The Houston metro area reached a record 3,061,600 total nonfarm payroll jobs in October ’17, an increase of 48,100 jobs or 1.6 percent from October ’16.

After enduring the energy industry’s worst downturn in history, Houston’s job market entered a period of gradual growth. Through the first half of ’17, the region’s employment was adding an average of 4,200 jobs a month.

Hurricane Harvey created a temporary disruption causing a decline of 11,200 jobs in September, primarily in leisure and hospitality. (Note: Although the storm hit the Houston area in August, the event occurred after the August employment data was collected so employment effects related to Harvey are captured in the September data.)

Houston began to see modest employment gains starting in ’17 as oil prices stabilized between the mid-$40s and low-$50s and the U.S. rig count rose from 665 in January ’17 to 915 in November ’17.

Houston’s employment remained resilient throughout the energy downturn with only three months of a negative 12-month change in total employment: June, July and August of ’16.

A strong U.S. economy, momentum from the previous economic boom, strong population growth, and $60 billion in petrochemical plant expansions helped offset losses in upstream energy and manufacturing.
### Payroll Employment

**HOUSTON-THE WOODLANDS-SUGAR LAND METROPOLITAN STATISTICAL AREA (MSA)**

Nonfarm Payroll Employment, Year-End

<table>
<thead>
<tr>
<th>Year</th>
<th>Nonfarm Payroll Employment</th>
<th>Change from Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>2,645,500</td>
<td>91,000</td>
</tr>
<tr>
<td>2008</td>
<td>2,666,800</td>
<td>21,300</td>
</tr>
<tr>
<td>2009</td>
<td>2,556,300</td>
<td>-110,500</td>
</tr>
<tr>
<td>2010</td>
<td>2,606,600</td>
<td>50,300</td>
</tr>
<tr>
<td>2011</td>
<td>2,689,700</td>
<td>83,100</td>
</tr>
<tr>
<td>2012</td>
<td>2,808,500</td>
<td>118,800</td>
</tr>
<tr>
<td>2013</td>
<td>2,898,900</td>
<td>90,400</td>
</tr>
<tr>
<td>2014</td>
<td>3,017,100</td>
<td>118,200</td>
</tr>
<tr>
<td>2015</td>
<td>3,017,300</td>
<td>200</td>
</tr>
<tr>
<td>2016</td>
<td>3,036,000</td>
<td>18,700</td>
</tr>
<tr>
<td><strong>12-month total ending October 2017</strong></td>
<td><strong>3,061,600</strong></td>
<td><strong>48,100</strong></td>
</tr>
</tbody>
</table>

Source: Texas Workforce Commission
Unemployment Rate

Houston’s unemployment rate fell to 4.1 percent in October ’17, the lowest for the region since April ’15.

Houston’s unemployment rate was 4.1 percent in October ’17, down from 4.8 percent in September ’17 and 5.3 percent a year ago. Texas’ unemployment rate was 3.5 percent in October, down from 4.0 percent in September and 4.6 percent in October ’16. The U.S. rate was 3.9 percent in October, down from 4.1 percent in September and 4.7 percent in October ’16. The rates are not seasonally adjusted.

Houston’s unemployment rate remained relatively low through the beginning of the energy downturn, not creeping up until May ’15, nearly a year after oil prices plummeted. It reached a high of 5.9 percent in February ’17 but has since trended down. Although the unemployment rate has fallen from its recent peak, the civilian labor force has also shrunk by 31,900 during this period.

Houston’s unemployment rate tracked below the U.S. rate for nearly a decade from December ’06 to early ’16. During much of this period, the region’s unemployment rate was below the national rate by at least one percentage point. Since April ’16, Houston’s unemployment rate has tracked above the national rate.
## UNEMPLOYMENT RATE: HOUSTON-THE WOODLANDS-SUGAR LAND MSA, TEXAS AND THE UNITED STATES

Percent of Civilian Labor Force Unemployed*

<table>
<thead>
<tr>
<th>Year</th>
<th>Houston MSA</th>
<th>Texas</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>4.3</td>
<td>4.4</td>
<td>4.6</td>
</tr>
<tr>
<td>2008</td>
<td>4.8</td>
<td>4.9</td>
<td>5.8</td>
</tr>
<tr>
<td>2009</td>
<td>7.5</td>
<td>7.5</td>
<td>9.3</td>
</tr>
<tr>
<td>2010</td>
<td>8.5</td>
<td>8.2</td>
<td>9.6</td>
</tr>
<tr>
<td>2011</td>
<td>8.1</td>
<td>7.9</td>
<td>8.9</td>
</tr>
<tr>
<td>2012</td>
<td>6.8</td>
<td>6.8</td>
<td>8.1</td>
</tr>
<tr>
<td>2013</td>
<td>6.2</td>
<td>6.3</td>
<td>7.4</td>
</tr>
<tr>
<td>2014</td>
<td>5.0</td>
<td>5.1</td>
<td>6.2</td>
</tr>
<tr>
<td>2015</td>
<td>4.6</td>
<td>4.5</td>
<td>5.3</td>
</tr>
<tr>
<td>2016</td>
<td>5.2</td>
<td>4.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Average for the 12 months ending October ’17</td>
<td>5.2</td>
<td>4.5</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Source: Texas Workforce Commission

*Rates not seasonally adjusted
Goods-Producing and Service-Providing Jobs

Houston’s service-providing sector is at record employment with more than 2.5 million jobs while the goods-producing sector is still struggling to regain jobs lost during the energy industry downturn.

The goods-producing industries (mining and logging, construction, and manufacturing) peaked at 590,200 jobs in December '14 then fell to a low of 519,000 jobs in November '16. The sector enjoyed strong job growth, increasing to its recent peak of 535,500 in June '17. Since then, goods-producing employment weakened to 529,900 in October '17.

The goods-producing sector is strongly tied to the U.S. rig count which grew from a record low of 404 rigs in May '16 to the most recent peak of 958 in July '16. The rig count has since fallen to 915 in November '17 and industry analysts believe it will hover between 900 and 1,000 with oil prices remaining flat in the mid-$50s and efficiency gains in production.

Construction, aided by the petrochemical plant expansions on the eastside of Houston, helped offset some of the goods-producing job losses during the energy downturn. However, as many of the projects have been delivered and few new expansions have been announced, construction employment has declined from a high of 222,600 jobs in October '15 to 213,300 in October '17.

The service-providing industries reached 2,531,700 jobs in October '17, a new record for the Houston region. Gains primarily occurred in industries that rely on population growth such as health care and public education. Professional and business services also added jobs driven by growth in employment services.
<table>
<thead>
<tr>
<th>Year</th>
<th>Service-Providing</th>
<th>Goods-Producing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>521,225</td>
<td>2,063,883</td>
</tr>
<tr>
<td>2008</td>
<td>536,717</td>
<td>2,104,125</td>
</tr>
<tr>
<td>2009</td>
<td>491,492</td>
<td>2,078,775</td>
</tr>
<tr>
<td>2010</td>
<td>471,925</td>
<td>2,094,133</td>
</tr>
<tr>
<td>2011</td>
<td>491,025</td>
<td>2,142,175</td>
</tr>
<tr>
<td>2012</td>
<td>524,283</td>
<td>2,213,375</td>
</tr>
<tr>
<td>2013</td>
<td>549,192</td>
<td>2,290,983</td>
</tr>
<tr>
<td>2014</td>
<td>573,500</td>
<td>2,367,283</td>
</tr>
<tr>
<td>2015</td>
<td>566,883</td>
<td>2,429,017</td>
</tr>
<tr>
<td>2016</td>
<td>530,317</td>
<td>2,470,283</td>
</tr>
<tr>
<td><strong>Average for the 12 months ending October ’17</strong></td>
<td><strong>529,008</strong></td>
<td><strong>2,503,467</strong></td>
</tr>
</tbody>
</table>

Source: Texas Workforce Commission
Employment by Industry

No single industry or sector dominates Houston employment.

Nonfarm payroll employment in the Houston metro area reached 3,061,600 in October ‘17, a record for the region.

Service industries account for 2.5 million Houston-area jobs or four out of five workers in the region. The largest service industries are trade, transportation, and utilities (19.8 percent of jobs), professional and business services (15.9 percent), and educational and health services (13.0 percent).

The goods-producing sector employs more than half a million Houstonians and accounts for approximately one in six of the region’s jobs. Manufacturing is the largest goods-producing industry with 7.5 percent of total jobs, followed closely by construction (7.0 percent), and upstream energy (2.9 percent).

Nearly two-thirds of Houston’s manufacturing jobs involve the production of durable goods, items with a useful life of three years of more. In Houston, this includes items such as oil field equipment, structural steel, and computers.
### HOUSTON METROPOLITAN STATISTICAL AREA (MSA) EMPLOYMENT BY INDUSTRY

**October 2017**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nonfarm</td>
<td>3,061,600</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total Private</td>
<td>2,641,300</td>
<td>86.3%</td>
</tr>
<tr>
<td>Goods Producing</td>
<td>529,900</td>
<td>17.3%</td>
</tr>
<tr>
<td>Service Providing</td>
<td>2,531,700</td>
<td>82.7%</td>
</tr>
<tr>
<td>Mining and Logging</td>
<td>87,300</td>
<td>2.9%</td>
</tr>
<tr>
<td>Oil and Gas Extraction</td>
<td>44,400</td>
<td>1.5%</td>
</tr>
<tr>
<td>Support Activities for Mining</td>
<td>41,300</td>
<td>1.3%</td>
</tr>
<tr>
<td>Construction</td>
<td>213,300</td>
<td>7.0%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>229,300</td>
<td>7.5%</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>146,500</td>
<td>4.8%</td>
</tr>
<tr>
<td>Non-Durable Goods</td>
<td>82,800</td>
<td>2.7%</td>
</tr>
<tr>
<td>Trade, Transportation, and Utilities</td>
<td>607,600</td>
<td>19.8%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>160,300</td>
<td>5.2%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>308,300</td>
<td>10.1%</td>
</tr>
<tr>
<td>Transportation, Warehousing, and Utilities</td>
<td>139,000</td>
<td>4.5%</td>
</tr>
<tr>
<td>Information</td>
<td>31,100</td>
<td>1.0%</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>159,600</td>
<td>5.2%</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>101,600</td>
<td>3.3%</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>58,000</td>
<td>1.9%</td>
</tr>
<tr>
<td>Professional and Business Services</td>
<td>485,900</td>
<td>15.9%</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>219,700</td>
<td>7.2%</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>36,600</td>
<td>1.2%</td>
</tr>
<tr>
<td>Admin and Support and Waste Mgmt.</td>
<td>229,600</td>
<td>7.5%</td>
</tr>
<tr>
<td>Educational and Health Services</td>
<td>398,700</td>
<td>13.0%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>61,800</td>
<td>2.0%</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>336,900</td>
<td>11.0%</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>319,800</td>
<td>10.4%</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>33,800</td>
<td>1.1%</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>286,000</td>
<td>9.3%</td>
</tr>
<tr>
<td>Other Services</td>
<td>108,700</td>
<td>3.6%</td>
</tr>
<tr>
<td>Government</td>
<td>420,300</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

Source: Texas Workforce Commission, October 2017; not seasonally adjusted
Employment Change by Industry

The health care sector has led Houston’s job growth over the past ten years.

<table>
<thead>
<tr>
<th>PERCENT SHARE OF METRO HOUSTON JOB GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>October ’07 - October ’17</td>
</tr>
<tr>
<td>Health Care</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
</tr>
<tr>
<td>Professional and Business Services</td>
</tr>
<tr>
<td>Trade, Transportation, and Utilities</td>
</tr>
<tr>
<td>Government</td>
</tr>
<tr>
<td>Other Services</td>
</tr>
<tr>
<td>Financial Activities</td>
</tr>
<tr>
<td>Mining and Logging</td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td>Information</td>
</tr>
</tbody>
</table>

Four sectors were responsible for 80 percent of Houston’s employment growth from October ’07 to October ‘17.

Health care and social assistance grew by 94,200 jobs from October ‘07 to October ‘17 and accounted for 21.0 percent of Houston’s total employment growth in the past ten years. The sector depends on the region’s population and employment growth, and health services is further spurred by the aging of the population.

Leisure and hospitality added 92,500 jobs and contributed to 20.6 percent of total job growth over the past decade. Houston is home to approximately 85,150 hotel rooms and, on average, a net of 290 new bars and restaurants opened in Houston each year from ‘10 to ‘17.

Professional and business services added 90,600 jobs and was responsible for 20.2 percent of the total growth in jobs over this period. The professional and business services sector grows as demand increases for technical expertise, such as engineering and computer systems design, and businesses require support services, like office administration, facilities support, and employment services.

Trade, transportation and utilities gained 76,400 jobs and contributed to 17.0 percent of the gain in employment during this period. The sector benefits from the expanding local consumer market through growth in jobs and population. In the past ten years, Houston added 449,100 jobs and grew by 1.3 million residents. Transportation also benefits from the $180 billion in annual trade passing through the Houston-Galveston Customs District.
## Employment Change by Industry

**HOUSTON–THE WOODLANDS–SUGAR LAND METROPOLITAN STATISTICAL AREA (MSA)**

### Job Growth by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>October '07</th>
<th>October '17</th>
<th>Change</th>
<th>Percent Change</th>
<th>Percent Share of Job Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nonfarm</td>
<td>2,612,500</td>
<td>3,061,600</td>
<td>449,100</td>
<td>17.2%</td>
<td>--</td>
</tr>
<tr>
<td>Mining and Logging</td>
<td>84,000</td>
<td>87,300</td>
<td>3,300</td>
<td>3.9</td>
<td>0.7%</td>
</tr>
<tr>
<td>Construction</td>
<td>211,200</td>
<td>213,300</td>
<td>2,100</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>234,800</td>
<td>229,300</td>
<td>-5,500</td>
<td>-2.3</td>
<td>-1.2</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>154,300</td>
<td>146,500</td>
<td>-7,800</td>
<td>-5.1</td>
<td>-1.7</td>
</tr>
<tr>
<td>Non-Durable Goods</td>
<td>80,500</td>
<td>82,800</td>
<td>2,300</td>
<td>2.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Trade, Transportation, and Utilities</td>
<td>531,200</td>
<td>607,600</td>
<td>76,400</td>
<td>14.4</td>
<td>17.0</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>139,200</td>
<td>160,300</td>
<td>21,100</td>
<td>15.2</td>
<td>4.7</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>265,600</td>
<td>308,300</td>
<td>42,700</td>
<td>16.1</td>
<td>9.5</td>
</tr>
<tr>
<td>Transportation, Warehousing and Utilities</td>
<td>126,400</td>
<td>139,000</td>
<td>12,600</td>
<td>10.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Information</td>
<td>37,200</td>
<td>31,100</td>
<td>-6,100</td>
<td>-16.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>146,700</td>
<td>159,600</td>
<td>12,900</td>
<td>8.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>93,700</td>
<td>101,600</td>
<td>7,900</td>
<td>8.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>53,000</td>
<td>58,000</td>
<td>5,000</td>
<td>9.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Professional and Business Services</td>
<td>395,300</td>
<td>485,900</td>
<td>90,600</td>
<td>22.9</td>
<td>20.2</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>184,800</td>
<td>219,700</td>
<td>34,900</td>
<td>18.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>20,800</td>
<td>36,600</td>
<td>15,800</td>
<td>76.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Admin and Support and Waste Mgmt.</td>
<td>189,700</td>
<td>229,600</td>
<td>39,900</td>
<td>21.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Educational and Health Services</td>
<td>284,300</td>
<td>398,700</td>
<td>114,400</td>
<td>40.2</td>
<td>25.5</td>
</tr>
<tr>
<td>Educational Services</td>
<td>41,600</td>
<td>61,800</td>
<td>20,200</td>
<td>48.6</td>
<td>4.5</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>242,700</td>
<td>336,900</td>
<td>94,200</td>
<td>38.8</td>
<td>21.0</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>227,300</td>
<td>319,800</td>
<td>92,500</td>
<td>40.7</td>
<td>20.6</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>25,600</td>
<td>33,800</td>
<td>8,200</td>
<td>32.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>201,700</td>
<td>286,000</td>
<td>84,300</td>
<td>41.8</td>
<td>18.8</td>
</tr>
<tr>
<td>Other Services</td>
<td>93,500</td>
<td>108,700</td>
<td>15,200</td>
<td>16.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Government</td>
<td>367,000</td>
<td>420,300</td>
<td>53,300</td>
<td>14.5</td>
<td>11.9</td>
</tr>
</tbody>
</table>

Source: Texas Workforce Commission
Employment Growth in Major Metros

Houston no longer leads the nation in job growth.

<table>
<thead>
<tr>
<th>City</th>
<th>Employment Growth, % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas, TX</td>
<td>2.7%</td>
</tr>
<tr>
<td>Riverside, CA</td>
<td>2.5%</td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td>2.5%</td>
</tr>
<tr>
<td>Seattle, WA</td>
<td>2.3%</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td>2.2%</td>
</tr>
<tr>
<td>Boston, MA</td>
<td>2.2%</td>
</tr>
<tr>
<td>Detroit, MI</td>
<td>1.8%</td>
</tr>
<tr>
<td>Phoenix, AZ</td>
<td>1.7%</td>
</tr>
<tr>
<td>Denver, CO</td>
<td>1.4%</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>1.4%</td>
</tr>
<tr>
<td>Philadelphia, PA</td>
<td>1.4%</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>1.4%</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>1.1%</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>0.9%</td>
</tr>
<tr>
<td>Baltimore, MD</td>
<td>0.9%</td>
</tr>
<tr>
<td>Los Angeles, CA</td>
<td>0.9%</td>
</tr>
<tr>
<td>New York, NY</td>
<td>0.9%</td>
</tr>
<tr>
<td>Miami, FL</td>
<td>0.8%</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>0.7%</td>
</tr>
<tr>
<td>Chicago, IL</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Labor Statistics, not seasonally adjusted

After leading the nation in employment gains coming out of the Great Recession, Houston has experienced a slower pace of job growth since ’15 amid an energy downturn. Between September ’16 and September ’17, the region added 19,500 net new jobs, a 0.7 percent increase. Hurricane Harvey caused a short-term drop in employment that is reflected in the above chart. However, those temporary losses will likely return as gains in the October data.
# Employment Growth in Major Metros

## NONFARM PAYROLL EMPLOYMENT (SEPTEMBER ’16 TO SEPTEMBER ’17)
20 Most Populous U.S. Metropolitan Statistical Areas Ranked by Jobs Created

<table>
<thead>
<tr>
<th>Metro Area</th>
<th>Change in Jobs (000)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>93.6</td>
<td>2.7</td>
</tr>
<tr>
<td>New York-Newark-Jersey City, NY-NJ-PA</td>
<td>86.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Atlanta-Sandy Springs-Roswell, GA</td>
<td>68.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Boston-Cambridge-Nashua, MA-NH NECTA</td>
<td>59.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Los Angeles-Long Beach-Anaheim, CA</td>
<td>56.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Seattle-Tacoma-Bellevue, WA</td>
<td>45.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>44.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Minneapolis-St. Paul-Bloomington, MN-WI</td>
<td>42.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE-MD</td>
<td>40.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Riverside-San Bernardino-Ontario, CA</td>
<td>35.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Detroit-Warren-Dearborn, MI</td>
<td>35.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>34.4</td>
<td>1.7</td>
</tr>
<tr>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>33.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Denver-Aurora-Lakewood, CO</td>
<td>20.9</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Houston-The Woodlands-Sugar Land, TX</strong></td>
<td><strong>19.5</strong></td>
<td><strong>0.7</strong></td>
</tr>
<tr>
<td>Miami-Fort Lauderdale-West Palm Beach, FL</td>
<td>19.5</td>
<td>0.8</td>
</tr>
<tr>
<td>San Diego-Carlsbad, CA</td>
<td>16.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Baltimore-Columbia-Towson, MD</td>
<td>12.3</td>
<td>0.9</td>
</tr>
<tr>
<td>St. Louis, MO-IL (1)</td>
<td>12.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Chicago-Naperville-Elgin, IL-IN-WI</td>
<td>11.3</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Purchasing Managers Index

The October PMI for Houston signals the region has nearly recovered from Hurricane Harvey.

The Houston Purchasing Managers Index (PMI), a short-term leading indicator of regional production, registered 49.3 in October '17. Readings above 50 signal likely expansion within the next three or four months.

The collapse of oil prices in late '14 preceded 21 consecutive months of below 50 readings, a period of contraction that lasted from January '15 through September '16. Since then, the PMI has signaled expansion for 10 out of 13 months, with the three most recent months signaling contraction as the region recovered from Hurricane Harvey. The Houston PMI averaged 51.6 for the first 10 months of '17, the highest level for that span since '14.

During the Great Recession, Houston’s PMI registered below 50 from November ‘08 to August ‘09, bottoming out at 39.0 in March ‘09 and bouncing back to 59.0 in May ‘10. A similar v-shaped recovery did not occur in the recent downturn. Instead, the region experienced a shallower but more protracted contraction.

Since the Houston PMI’s inception in January ’95, the all-time low for the index was 39.0 in March ‘09. The all-time high occurred in January of ’06, when the PMI reached 67.9. Over the past 21 years, the PMI has tracked at 50 or above for 222 months and below 50 for 52 months.

The Houston PMI is based on a survey of some 80 purchasing executives in key Houston industries—oil and gas exploration and production; manufacturing; engineering and construction; chemicals; distribution; health care; and business and financial services. It measures over-the-month changes in sales (new orders), production, employment, purchases of new equipment, prices paid for major purchases, lead times from sellers, purchased materials inventory and finished goods inventory.
**Purchasing Managers Index**

**ANNUAL AVERAGES**

Above 50 Signals Short-Term Growth, Below 50 Signals Contraction

<table>
<thead>
<tr>
<th>Year</th>
<th>Houston</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>59.2</td>
<td>51.1</td>
</tr>
<tr>
<td>2008</td>
<td>54.3</td>
<td>45.6</td>
</tr>
<tr>
<td>2009</td>
<td>44.9</td>
<td>46.3</td>
</tr>
<tr>
<td>2010</td>
<td>55.1</td>
<td>57.5</td>
</tr>
<tr>
<td>2011</td>
<td>60.1</td>
<td>55.3</td>
</tr>
<tr>
<td>2012</td>
<td>58.5</td>
<td>51.7</td>
</tr>
<tr>
<td>2013</td>
<td>58.4</td>
<td>53.9</td>
</tr>
<tr>
<td>2014</td>
<td>56.5</td>
<td>55.8</td>
</tr>
<tr>
<td>2015</td>
<td>46.5</td>
<td>51.4</td>
</tr>
<tr>
<td>2016</td>
<td>46.7</td>
<td>51.5</td>
</tr>
<tr>
<td>YTD Average as of October 2017</td>
<td>51.6</td>
<td>57.2</td>
</tr>
</tbody>
</table>

Note: The PMI has a possible range from zero to 100. Readings above the neutral point of 50 indicate likely growth in production over the next three to four months; readings below 50 suggest contraction.

The Houston and U.S. Purchasing Managers Indexes are conceptually similar but not identical.

Source: Institute for Supply Management-Houston
Oil and Natural Gas Prices

Oil prices rose in ’17 but remain well below their recent peak.

The spot closing price for a barrel of West Texas Intermediate (WTI), the U.S. benchmark for light crude, fell from $108 in June ’14 to $26 in February ’16, a 76 percent decline. Prices rose slightly in ’17, hovering near $50 for much of the year. The weekly WTI spot price averaged $49.51 per barrel through the first 10 months of ’17, a 17.9 percent increase from $41.99 for the same span in ’16.

The spot price for natural gas followed that of oil, falling from a peak of $5.63 per million British thermal units (MMBtu) in February ’14 to $1.73 in January ’16. Natural gas prices averaged $3.00 through the first 10 months of ’17, a 25.0 percent rise from $2.40 for the same time period in ’16.

In its November Short-Term Energy Outlook, the U.S. Energy Information Administration forecasts WTI spot prices to average $51.04 in ’18. Henry Hub natural gas spot prices are projected to average $3.10 in ’18.

Gulf Coast petrochemical manufacturers, unlike their counterparts elsewhere, rely heavily on natural gas as a feedstock. As a rule of thumb, Gulf Coast plants can compete on the world market so long as the ratio of oil price to gas price exceeds 6. The ratio is expected to stay above that level over the next several decades. As a result, U.S. and foreign companies have announced a major expansion of chemical plants. The American Chemistry Council has identified 264 chemical industry investment projects valued at $164 billion that have been publicly announced; more than $65 billion will be spent on projects in the Houston area.
## SPOT MARKET PRICES, WEST TEXAS INTERMEDIATE CRUDE AND HENRY HUB NATURAL GAS
### 52-Week Average

<table>
<thead>
<tr>
<th>Year</th>
<th>WTI Crude Price ($/bbl)</th>
<th>Natural Gas Price ($/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>72.20</td>
<td>6.96</td>
</tr>
<tr>
<td>2008</td>
<td>100.18</td>
<td>8.89</td>
</tr>
<tr>
<td>2009</td>
<td>61.33</td>
<td>3.94</td>
</tr>
<tr>
<td>2010</td>
<td>79.45</td>
<td>4.40</td>
</tr>
<tr>
<td>2011</td>
<td>94.95</td>
<td>3.99</td>
</tr>
<tr>
<td>2012</td>
<td>94.11</td>
<td>2.75</td>
</tr>
<tr>
<td>2013</td>
<td>97.92</td>
<td>3.73</td>
</tr>
<tr>
<td>2014</td>
<td>93.64</td>
<td>4.39</td>
</tr>
<tr>
<td>2015</td>
<td>48.90</td>
<td>2.64</td>
</tr>
<tr>
<td>2016</td>
<td>43.15</td>
<td>2.51</td>
</tr>
<tr>
<td>52-week average ending October 2017</td>
<td>49.39</td>
<td>3.01</td>
</tr>
</tbody>
</table>

Source: U.S. Energy Information Administration
Drilling activity increased significantly in ’16 and through the first half of ’17, topping out at 958 rigs in July, as oil prices stabilized near $50 per barrel. The average rig count through the first 10 months of ’17 was 867, up 76.6 percent from an average of 493 rigs during the same span in ’16. The rebound followed a dramatic fall in exploration activity that began in late ’14. The rig count dropped from a high of 1,930 in September ’14 to a low of 407 in May ’16, a 78.9 percent decline. 

The rise in exploration activity has led to an increase in U.S. production. Domestic crude production averaged 9.2 million barrels a day YTD through October ’17, up 5.4 percent from 8.8 million in October ’16 YTD.

The Permian Basin accounts for about half of the rig growth. Of the 378 rigs added in the U.S. since October ’16, 174 went to the Permian. As of October ’17, the Permian was home to 41.3 percent of the U.S. drilling fleet, up from 38.1 percent the same time last year. 

The total rig count dipped to 909 in October ’17, down from a peak of 953 in July ’17. Though oil prices have stabilized, they remain too low to spur the kind of capital investment and hiring that would be needed to keep pace with the rig growth seen over the past 18 months.
## ACTIVE DOMESTIC ROTARY RIG COUNT AND PRICE OF WEST TEXAS INTERMEDIATE CRUDE
54-week Average

<table>
<thead>
<tr>
<th>Year</th>
<th>Active Domestic Rotary Rigs</th>
<th>WTI Crude Price ($/bbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1,768</td>
<td>72.34</td>
</tr>
<tr>
<td>2008</td>
<td>1,879</td>
<td>99.67</td>
</tr>
<tr>
<td>2009</td>
<td>1,089</td>
<td>61.95</td>
</tr>
<tr>
<td>2010</td>
<td>1,546</td>
<td>79.48</td>
</tr>
<tr>
<td>2011</td>
<td>1,879</td>
<td>94.95</td>
</tr>
<tr>
<td>2012</td>
<td>1,919</td>
<td>94.11</td>
</tr>
<tr>
<td>2013</td>
<td>1,761</td>
<td>97.92</td>
</tr>
<tr>
<td>2014</td>
<td>1,862</td>
<td>93.64</td>
</tr>
<tr>
<td>2015</td>
<td>983</td>
<td>48.90</td>
</tr>
<tr>
<td>2016</td>
<td>512</td>
<td>43.15</td>
</tr>
<tr>
<td>52-week average ending October 2017</td>
<td>822</td>
<td>49.39</td>
</tr>
</tbody>
</table>

Sources: Baker Hughes Inc.; U.S. Energy Information Administration
Foreign Trade

Houston handled over $161 billion in foreign trade in ’16 and ranked as the seventh busiest U.S. customs district.

Thirty-three countries logged more than $1 billion each in trade through the Houston-Galveston customs district in ’16. The 10 largest included China ($14.7 billion), Mexico ($14.7 billion), Brazil ($10.2 billion), Germany ($9.3 billion), the Netherlands ($7.7 billion), Saudi Arabia ($6.3 billion), Venezuela ($5.5 billion), South Korea ($5.1 billion), Colombia ($5.0 billion), and Japan ($4.6 billion).

Imports totaled $69.8 billion in ’16. The top five imports were oil and oil products ($21.6 billion), industrial machinery ($9.3 billion), vehicles and parts ($5.1 billion), articles of iron and steel ($4.2 billion) and electrical machinery ($3.8 billion).

Exports totaled $91.6 billion in ’16. Leading exports included refined oil products ($33.1 billion), organic chemicals ($11.4 billion), industrial machinery ($11.0 billion), plastics ($6.5 billion) and electrical machinery ($4.6 billion).

The strong U.S. dollar and drop in oil and gas prices contributed to the 17.4 percent drop in the value of trade in ’16. Exports are down 16.1 percent and imports dropped 19.0 percent.

Despite the decline in overall trade, the Port of Houston ranked first in foreign tonnage among U.S. ports for the 20th consecutive year and first in import tonnage for the 25th consecutive year.
<table>
<thead>
<tr>
<th>Year</th>
<th>Imports</th>
<th>Exports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>112.979</td>
<td>72.329</td>
<td>185.308</td>
</tr>
<tr>
<td>2008</td>
<td>150.998</td>
<td>89.906</td>
<td>240.904</td>
</tr>
<tr>
<td>2009</td>
<td>92.426</td>
<td>75.233</td>
<td>167.659</td>
</tr>
<tr>
<td>2010</td>
<td>116.771</td>
<td>94.685</td>
<td>211.456</td>
</tr>
<tr>
<td>2011</td>
<td>148.629</td>
<td>119.400</td>
<td>268.029</td>
</tr>
<tr>
<td>2012</td>
<td>147.123</td>
<td>126.818</td>
<td>273.941</td>
</tr>
<tr>
<td>2013</td>
<td>122.895</td>
<td>128.835</td>
<td>251.730</td>
</tr>
<tr>
<td>2014</td>
<td>121.935</td>
<td>130.506</td>
<td>252.453</td>
</tr>
<tr>
<td>2015</td>
<td>86.151</td>
<td>109.253</td>
<td>195.367</td>
</tr>
<tr>
<td>2016</td>
<td>69.794</td>
<td>91.630</td>
<td>161.422</td>
</tr>
<tr>
<td>12-month total ending September 2017</td>
<td>79.960</td>
<td>102.490</td>
<td>182.450</td>
</tr>
</tbody>
</table>

Source: Adapted from WISERTrade: International Trade Database, WISER LLC, Copyright 2004. No Claim to Original United States Government Works. All Rights Reserved.
Air Passengers

Total volume has grown by 1.7 million passengers since ‘07.

The Houston Airport System (HAS) offers nonstop flights to more than 190 domestic and international destinations. Bush Intercontinental Airport, Houston’s largest airport and a significant hub for United Airlines, is the world’s 43rd busiest airport and the 14th busiest airport in the U.S. for total passenger traffic according to Airports Council International. Hobby Airport ranks as the nation’s 34th busiest airport.

Since the launch of international service at Hobby in October ‘15, the airport has recorded 936,600 global passengers. Houston is now one of only two municipalities in the United States with two international airports.

In the 12 months ending September ‘17, HAS handled 53.6 million travelers, down 2.9 percent from the same period in ‘16. International passenger traffic fell 4.0 percent from 11.6 million in the 12-months ending September ‘16 to 11.1 million in the 12-months ending September ‘17. During the same period, domestic passenger traffic slipped 2.6 percent from 43.5 million to 42.4 million.

Growth in international passenger service has driven the overall increase in passenger traffic since ‘07. While domestic passenger counts fell by 1.7 million from ‘07 to ‘17, international passengers grew by 3.4 million. When United Airlines begins service from IAH to Australia in January ‘18, Houston passengers will have direct access to every inhabited continent.
## HOUSTON AIRPORT SYSTEM – DOMESTIC AND INTERNATIONAL AIR PASSENGERS

### Annual Totals

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic (000)</th>
<th>International (000)</th>
<th>Total (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>44,094.6</td>
<td>7,723.0</td>
<td>51,817.6</td>
</tr>
<tr>
<td>2008</td>
<td>42,524.2</td>
<td>7,960.1</td>
<td>50,484.4</td>
</tr>
<tr>
<td>2009</td>
<td>40,695.9</td>
<td>7,809.9</td>
<td>48,505.8</td>
</tr>
<tr>
<td>2010</td>
<td>41,025.7</td>
<td>8,507.9</td>
<td>49,533.6</td>
</tr>
<tr>
<td>2011</td>
<td>41,393.4</td>
<td>8,637.3</td>
<td>50,030.7</td>
</tr>
<tr>
<td>2012</td>
<td>41,564.5</td>
<td>8,764.6</td>
<td>50,329.1</td>
</tr>
<tr>
<td>2013</td>
<td>41,922.6</td>
<td>8,986.3</td>
<td>50,908.9</td>
</tr>
<tr>
<td>2014</td>
<td>43,386.7</td>
<td>9,815.6</td>
<td>53,202.3</td>
</tr>
<tr>
<td>2015</td>
<td>44,430.9</td>
<td>10,688.9</td>
<td>55,119.8</td>
</tr>
<tr>
<td>2016</td>
<td>42,965.0</td>
<td>11,581.4</td>
<td>54,546.4</td>
</tr>
<tr>
<td>12-month total ending September 2017</td>
<td>42,415.4</td>
<td>11,143.6</td>
<td>53,558.9</td>
</tr>
</tbody>
</table>

Source: Houston Airport System

Note: Totals may not sum due to rounding.
Residential Real Estate

Pent-up demand and strong population growth have kept home sales resilient throughout the downturn.

The 12-month total of Houston-area home sales rose for 10 consecutive months reaching a peak of 95,242 units in July ‘17. The next month, Hurricane Harvey caused sales to fall to 93,167 for the 12 months ending August ‘17. Sales include single-family homes, townhomes, condominiums, duplexes, high-rise units, and residential lots.

Home sales began their post-Harvey rebound immediately, increasing to 93,907 in the 12 months ending October, a 4.5 percent increase from the year before.

The median single-family sales price continues to grow and post historic highs, averaging $227,698 for the 12-months ending October ‘17, a 4.4 percent increase from $218,016 a year ago.

Houston’s housing inventory averaged 3.9 months for the 12-months ending October ‘17, up from 3.6 months for same period in ’16. Inventory is measured by the estimated number of months it would take to deplete the current active listings based on the previous 12 months of sales. A market is considered balanced with inventory at six months. U.S. inventory currently sits at 4.5 months.

From April 1, 2010 to July 1, 2016, Houston has added 852,000 residents, the largest gain of any U.S. metro over that period. Approximately 477,000 residents, or 56.0 percent of the gains resulted from people moving to the region from elsewhere in the United States or from abroad.

Source: Houston Association of Realtors®
## HOUSTON MULTIPLE LISTING SERVICE DATA

Historical Closings, Sales Prices and Listings

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Closings</th>
<th>Median Sales Price ($)</th>
<th>Average Active Listings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>83,736</td>
<td>151,706</td>
<td>50,643</td>
</tr>
<tr>
<td>2008</td>
<td>69,336</td>
<td>150,724</td>
<td>50,946</td>
</tr>
<tr>
<td>2009</td>
<td>63,801</td>
<td>150,963</td>
<td>45,286</td>
</tr>
<tr>
<td>2010</td>
<td>61,005</td>
<td>153,330</td>
<td>51,097</td>
</tr>
<tr>
<td>2011</td>
<td>63,606</td>
<td>153,618</td>
<td>48,800</td>
</tr>
<tr>
<td>2012</td>
<td>74,116</td>
<td>162,502</td>
<td>40,247</td>
</tr>
<tr>
<td>2013</td>
<td>88,080</td>
<td>179,737</td>
<td>32,101</td>
</tr>
<tr>
<td>2014</td>
<td>91,340</td>
<td>197,462</td>
<td>28,363</td>
</tr>
<tr>
<td>2015</td>
<td>89,296</td>
<td>211,396</td>
<td>31,326</td>
</tr>
<tr>
<td>2016</td>
<td>91,528</td>
<td>220,191</td>
<td>35,720</td>
</tr>
<tr>
<td>12-month total/avg ending October 2017</td>
<td>93,907</td>
<td>227,698</td>
<td>39,194</td>
</tr>
</tbody>
</table>

* Average of monthly medians

Source: Houston Association of Realtors®
Office Market

The decline in Houston’s office occupancy translates into a significant amount of space available at highly favorable terms.

<table>
<thead>
<tr>
<th>OFFICE OCCUPANCY RATES</th>
<th>Percent of Completed Space Leased</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CBD</td>
</tr>
<tr>
<td>'07</td>
<td>78%</td>
</tr>
<tr>
<td>'08</td>
<td></td>
</tr>
<tr>
<td>'09</td>
<td></td>
</tr>
<tr>
<td>'10</td>
<td></td>
</tr>
<tr>
<td>'11</td>
<td></td>
</tr>
<tr>
<td>'12</td>
<td></td>
</tr>
<tr>
<td>'13</td>
<td></td>
</tr>
<tr>
<td>'14</td>
<td></td>
</tr>
<tr>
<td>'15</td>
<td></td>
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<tr>
<td>'16</td>
<td></td>
</tr>
<tr>
<td>'17</td>
<td></td>
</tr>
<tr>
<td>'18</td>
<td></td>
</tr>
</tbody>
</table>

In Houston—the nation’s fifth-largest office market with 213.7 million square feet (msf) of net rentable area—overall occupancy at the end of the third quarter of ’17 stood at 82.4 percent. Occupancy in the Central Business District (CBD) was 86.0 percent, while the suburbs had an occupancy rate of 81.5 percent. Houston’s 115.9 msf of Class A space was 84.3 percent leased.

A total of 2.2 million square feet of office space was under construction as of Q3/17, with 51.2 percent of the space preleased.

Sublease space has decreased from 11.0 msf in Q3/16 to 10.5 msf in Q3/17, accounting for nearly 4.9 percent of Houston’s office market. Tenants are able to benefit from discounted rates on premier Class A space offering six-year terms on average, more than the two- to three-year terms typical for sublease space.

Vacancy rates are expected to increase in ’18 as sublease terms expire and convert to direct availability.
## CENTRAL BUSINESS DISTRICT AND SUBURBAN OFFICE OCCUPANCY RATES
### Percent of Completed Space

<table>
<thead>
<tr>
<th>Year</th>
<th>Central Business District</th>
<th></th>
<th></th>
<th></th>
<th>Suburbs</th>
<th></th>
<th></th>
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<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
<td>Q2</td>
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<tr>
<td>2007</td>
<td>87.5</td>
<td>88.7</td>
<td>89.9</td>
<td>91.1</td>
<td>88.5</td>
<td>89.0</td>
<td>89.2</td>
<td>88.4</td>
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<tr>
<td>2008</td>
<td>91.1</td>
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<td>91.7</td>
<td>87.4</td>
<td>87.4</td>
<td>87.3</td>
<td>87.1</td>
</tr>
<tr>
<td>2009</td>
<td>91.5</td>
<td>91.0</td>
<td>90.8</td>
<td>90.2</td>
<td>86.2</td>
<td>84.6</td>
<td>83.0</td>
<td>82.4</td>
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<tr>
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<td>89.9</td>
<td>89.6</td>
<td>89.5</td>
<td>89.8</td>
<td>82.0</td>
<td>82.0</td>
<td>82.1</td>
<td>82.0</td>
</tr>
<tr>
<td>2011</td>
<td>88.3</td>
<td>88.4</td>
<td>88.9</td>
<td>89.3</td>
<td>82.8</td>
<td>83.0</td>
<td>83.1</td>
<td>83.8</td>
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<td>89.2</td>
<td>89.7</td>
<td>90.3</td>
<td>84.5</td>
<td>85.2</td>
<td>85.4</td>
<td>86.2</td>
</tr>
<tr>
<td>2013</td>
<td>90.3</td>
<td>91.2</td>
<td>88.8</td>
<td>90.8</td>
<td>86.7</td>
<td>87.0</td>
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<tr>
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<td>90.8</td>
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<td>92.1</td>
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<tr>
<td>2015</td>
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<td>91.2</td>
<td>91.1</td>
<td>90.9</td>
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<td>85.4</td>
<td>85.7</td>
<td>84.6</td>
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<tr>
<td>2016</td>
<td>90.5</td>
<td>89.7</td>
<td>89.7</td>
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<td>83.9</td>
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</tr>
<tr>
<td>2017</td>
<td>87.1</td>
<td>86.3</td>
<td>86.0</td>
<td>---</td>
<td>82.2</td>
<td>81.7</td>
<td>81.5</td>
<td>---</td>
</tr>
</tbody>
</table>

Source: CBRE
Houston Hotel Data

Houston hotels enjoyed a boost in activity in ’17 with the city hosting Super Bowl LI and housing evacuees from Hurricane Harvey.

Houston’s hotel inventory, approximately 85,600 rooms, averaged 61.0 percent occupancy in the four quarters ending Q2/17. The average daily room rate during this period was $104.24 and revenue per available room (RevPAR) averaged $63.75 per day.

Houston added 4,600 hotel rooms for the four quarters ending Q2/17.

Super Bowl LI helped increase occupancy from 57.2 percent in Q4/16 to 63.7 percent in Q1/17. RevPAR jumped from $56.70 in Q4/16 to $73.97 in Q1/17.

Though occupancy levels and room rates were trending slightly down through the second quarter of ’17, Hurricane Harvey caused a spike in demand that boosted hotel occupancy and room rates in the second half of the year. CBRE forecasts occupancy to reach 72.0 percent and RevPAR to rise to $75.22 in the fourth quarter, both surpassing the impact of the Super Bowl on Houston’s hotels.
## Houston Hotel Data

### Houston Hotel Occupancy, Room Rates and Revenue Per Available Room (RevPAR) Annual Averages

<table>
<thead>
<tr>
<th>Year</th>
<th>Occupancy (Percent)</th>
<th>Room Rate ($/Day)</th>
<th>RevPAR($/Day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>66.2</td>
<td>95.75</td>
<td>63.44</td>
</tr>
<tr>
<td>2008</td>
<td>67.6</td>
<td>104.75</td>
<td>70.92</td>
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<td>2009</td>
<td>55.4</td>
<td>91.64</td>
<td>51.00</td>
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<td>2010</td>
<td>55.0</td>
<td>88.24</td>
<td>48.57</td>
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<td>2011</td>
<td>59.8</td>
<td>90.49</td>
<td>54.13</td>
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<td>2012</td>
<td>65.6</td>
<td>93.58</td>
<td>61.43</td>
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<td>2013</td>
<td>69.3</td>
<td>100.86</td>
<td>69.97</td>
</tr>
<tr>
<td>2014</td>
<td>72.0</td>
<td>107.08</td>
<td>77.11</td>
</tr>
<tr>
<td>2015</td>
<td>68.6</td>
<td>108.62</td>
<td>74.53</td>
</tr>
<tr>
<td>2016</td>
<td>62.3</td>
<td>104.45</td>
<td>65.33</td>
</tr>
<tr>
<td><strong>Average for the four quarters ending Q2 2017</strong></td>
<td><strong>61.0</strong></td>
<td><strong>104.24</strong></td>
<td><strong>63.75</strong></td>
</tr>
</tbody>
</table>

Source: CBRE Hotels’ Americas Research, STR, Q2 2017
New Car, Truck and SUV Sales

Vehicle sales continued to trend down in ’17, though Harvey created a surge in demand that buoyed sales late in the year.

Hurricane Harvey destroyed an estimated 300,000 vehicles in the Houston region, according to InfoNation of Sugar Land. Replacing those vehicles could result in 75,000 new sales in the short-term though it’s unlikely to affect the underlying market fundamentals that have caused sales to fall over the last two years. Sales in the Houston region hit a record high of 377,705 vehicles sold in the 12 months ending October ’15, but have since fallen 24.4 percent to 285,604 in the 12 months ending October ’17.

Low gasoline prices have encouraged consumers to purchase more trucks and SUVs than cars. The market share for truck and SUV sales in Houston averaged 63.3 percent in the 12 months ending October ’17, roughly even to last year’s level but up from 59.7 percent during the same period in ’15.

The average retail sales price per vehicle fell to $35,250 in October ’17, down 2.4 percent from the same month last year. The average retail sales price for the truck/SUV segment was $38,482 in October ’17 compared to $28,510 for cars.
## New Car, Truck and SUV Sales

### ANNUAL TOTALS IN NEW CAR, TRUCK AND SUV SALES
Houston-Sugar Land-Baytown MSA*

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars</th>
<th>Trucks and SUVs</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>149,677</td>
<td>209,093</td>
<td>358,770</td>
</tr>
<tr>
<td>2008</td>
<td>140,088</td>
<td>166,772</td>
<td>306,860</td>
</tr>
<tr>
<td>2009</td>
<td>100,129</td>
<td>118,581</td>
<td>218,710</td>
</tr>
<tr>
<td>2010</td>
<td>105,753</td>
<td>134,601</td>
<td>240,354</td>
</tr>
<tr>
<td>2011</td>
<td>107,552</td>
<td>147,444</td>
<td>254,996</td>
</tr>
<tr>
<td>2012</td>
<td>143,061</td>
<td>182,027</td>
<td>325,088</td>
</tr>
<tr>
<td>2013</td>
<td>153,210</td>
<td>194,649</td>
<td>347,859</td>
</tr>
<tr>
<td>2014</td>
<td>159,899</td>
<td>214,099</td>
<td>373,998</td>
</tr>
<tr>
<td>2015</td>
<td>150,622</td>
<td>225,859</td>
<td>376,481</td>
</tr>
<tr>
<td>2016</td>
<td>111,655</td>
<td>193,077</td>
<td>304,732</td>
</tr>
<tr>
<td>12-month total ending October 2017</td>
<td>96,351</td>
<td>189,253</td>
<td>285,604</td>
</tr>
</tbody>
</table>

* Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto and Waller counties. Austin and San Jacinto counties were added in January 2007, but the series may be treated as continuous because those counties have a negligible impact on the totals.

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

Local inflation, like U.S. inflation, has remained subdued in recent years.

The cost of consumer goods and services as measured by the Consumer Price Index for All Urban Consumers (CPI-U) rose 2.0 percent nationwide from October '16 to October '17, according to the U.S. Bureau of Labor Statistics. Over the same period, core inflation (all items less the volatile food and energy categories) increased 1.8 percent.

From October '16 to October '17, consumer prices in the Houston-Galveston-Brazoria metro area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties) grew 2.3 percent. Core inflation rose 1.6 percent.

Energy prices increased throughout '17 after falling in '15 and '16. In the 12 months ending October '17, U.S. energy prices increased 6.4 percent and Houston energy prices rose 12.6 percent. Disruptions from Hurricane Harvey further elevated prices, primarily in motor fuel, in August, September and October.

Houston’s food index rose 1.6 percent from October ‘16 to October ‘17. The cost of dining out increased 0.9 percent while grocery prices grew 2.2 percent. The cost of shelter rose 1.5 percent since October ‘16, the largest contributor to the rise in core inflation.
## CHANGE IN THE CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS

Annual Change, Percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Houston</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>3.93</td>
<td>4.08</td>
</tr>
<tr>
<td>2008</td>
<td>-0.17</td>
<td>0.09</td>
</tr>
<tr>
<td>2009</td>
<td>2.69</td>
<td>2.72</td>
</tr>
<tr>
<td>2010</td>
<td>1.86</td>
<td>1.50</td>
</tr>
<tr>
<td>2011</td>
<td>3.08</td>
<td>2.96</td>
</tr>
<tr>
<td>2012</td>
<td>1.00</td>
<td>1.74</td>
</tr>
<tr>
<td>2013</td>
<td>3.62</td>
<td>1.50</td>
</tr>
<tr>
<td>2014</td>
<td>1.12</td>
<td>0.76</td>
</tr>
<tr>
<td>2015</td>
<td>0.36</td>
<td>0.73</td>
</tr>
<tr>
<td>2016</td>
<td>2.26</td>
<td>2.07</td>
</tr>
<tr>
<td>YOY change as of October 2017</td>
<td>2.30</td>
<td>2.04</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Labor Statistics
Living Cost Comparison

Houston offers a low cost of living while maintaining a high quality of life with the amenities expected in a world-class city.

The C2ER Cost of Living Index for Q3 '17 shows Houston has the fifth lowest cost of living among the nation’s 20 most populous metropolitan areas. Houston’s overall after-taxes living costs are 1.9 percent below the average for all 267 urban areas participating in the survey.

COST OF LIVING COMPARISON - 20 MOST POPULOUS U.S. METROS*
% Below/Above U.S. Average

New York (Manhattan), NY 142.9
San Francisco, CA 91.8
Washington, D.C. 57.4
Seattle, WA 52.8
Los Angeles, CA 47.0
Boston, MA 45.7
San Diego, CA 44.1
Chicago, IL 23.5
Philadelphia, PA 16.4
Miami, FL 14.3
Denver, CO 12.1
Minneapolis, MN 4.9
Dallas, TX 2.0
-0.7 Atlanta, GA
-1.9 Houston, TX
-4.3 Detroit, MI
-4.9 Phoenix, AZ
-8.3 Tampa, FL
-9.5 St. Louis, MO

*Metro areas represented by most dominant urban area. Riverside, California is among the 20 most populous metros, but did not submit COLI data.

Source: Council for Community and Economic Research (C2ER), Cost of Living Index, Q3 2017
(Data based on a survey of 267 urban areas, published October 2017).
## Living Cost Comparison

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>Composite</th>
<th>Groceries</th>
<th>Housing</th>
<th>Utilities</th>
<th>Transportation</th>
<th>Health Care</th>
<th>Misc. Goods &amp; Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York (Manhattan), NY</td>
<td>242.9</td>
<td>141.4</td>
<td>516.8</td>
<td>118.1</td>
<td>128.5</td>
<td>116.7</td>
<td>148.4</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>191.8</td>
<td>125.2</td>
<td>365.1</td>
<td>116.8</td>
<td>138.7</td>
<td>126.2</td>
<td>125.1</td>
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<tr>
<td>Washington, DC</td>
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<td>111.8</td>
<td>261.4</td>
<td>115.2</td>
<td>107.9</td>
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<td>125.3</td>
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<td>Seattle, WA</td>
<td>152.8</td>
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<td>206.6</td>
<td>127.9</td>
<td>137.6</td>
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<td>116.0</td>
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<td>123.1</td>
<td>109.5</td>
<td>109.8</td>
</tr>
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<td>105.8</td>
<td>204.9</td>
<td>139.9</td>
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<td>133.3</td>
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<td>San Diego, CA</td>
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<td>106.3</td>
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<td>108.6</td>
<td>145.7</td>
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<td>106.3</td>
<td>95.5</td>
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<td>102.7</td>
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<td>106.1</td>
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<td>84.6</td>
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<td>107.9</td>
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<td>Houston, TX</td>
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<td><strong>88.6</strong></td>
<td><strong>101.5</strong></td>
<td><strong>121.5</strong></td>
<td><strong>100.3</strong></td>
<td><strong>93.0</strong></td>
<td><strong>92.4</strong></td>
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<td>Detroit, MI</td>
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<td>91.0</td>
<td>91.8</td>
<td>103.3</td>
<td>107.1</td>
<td>93.7</td>
<td>95.6</td>
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<td>96.1</td>
<td>94.4</td>
<td>98.2</td>
<td>93.3</td>
<td>96.2</td>
<td>94.6</td>
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<tr>
<td>Tampa, FL</td>
<td>91.7</td>
<td>97.2</td>
<td>72.6</td>
<td>104.0</td>
<td>98.7</td>
<td>97.0</td>
<td>98.4</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>90.5</td>
<td>106.9</td>
<td>71.2</td>
<td>115.1</td>
<td>95.5</td>
<td>97.3</td>
<td>90.2</td>
</tr>
</tbody>
</table>

*Metro areas represented by most dominant urban area. Riverside, California, is among the 20 most populous metros, but did not submit COLI data.

Source: Council for Community and Economic Research (C2ER), Cost of Living Index, Q3 2017 (Data based on a survey of 267 urban areas, published October 2017).
Housing Cost Comparison

Houston’s housing costs are among the lowest of the major U.S. metro areas.

The C2ER Cost of Living Index for Q3 ’17 shows that Houston’s housing costs are 1.5 percent above the nationwide average but 42.0 percent below the average for the 20 most populous U.S. metros. Lower housing costs are one of the reasons Houston’s overall living costs are 23.1 percent below the large-metro average. (This housing index is based 71.0 percent on homeownership and 29.0 percent on rental occupancy.)

Excluding the two most expensive housing markets—New York and San Francisco—which tend to skew the average, Houston’s housing costs are still 29.3 percent below the major metro average.
# Housing Cost Comparison

**HOUSING COST COMPARISON – 20 MOST POPULOUS U.S. METROS***
(Average for 267 Urban Areas = 100)

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>Housing Cost Index**</th>
<th>Percent Above or Below the Nationwide Average</th>
<th>Average Price for New 2,400-Square-Foot House*** ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York (Manhattan), NY</td>
<td>516.8</td>
<td>416.8</td>
<td>1,853,004</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>365.1</td>
<td>265.1</td>
<td>1,221,676</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>261.4</td>
<td>161.4</td>
<td>912,667</td>
</tr>
<tr>
<td>Los Angeles, CA</td>
<td>241.0</td>
<td>141.0</td>
<td>806,908</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>233.9</td>
<td>133.9</td>
<td>826,430</td>
</tr>
<tr>
<td>Seattle, WA</td>
<td>206.6</td>
<td>106.6</td>
<td>682,472</td>
</tr>
<tr>
<td>Boston, MA</td>
<td>204.9</td>
<td>104.9</td>
<td>627,881</td>
</tr>
<tr>
<td>Chicago, IL</td>
<td>156.1</td>
<td>56.1</td>
<td>488,675</td>
</tr>
<tr>
<td>Miami, FL</td>
<td>145.7</td>
<td>45.7</td>
<td>422,142</td>
</tr>
<tr>
<td>Denver, CO</td>
<td>133.7</td>
<td>33.7</td>
<td>455,409</td>
</tr>
<tr>
<td>Philadelphia, PA</td>
<td>126.7</td>
<td>26.7</td>
<td>422,214</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>103.1</td>
<td>3.1</td>
<td>320,688</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td>102.7</td>
<td>2.7</td>
<td>358,141</td>
</tr>
<tr>
<td>Houston, TX</td>
<td><strong>101.5</strong></td>
<td><strong>1.5</strong></td>
<td><strong>310,250</strong></td>
</tr>
<tr>
<td>Phoenix, AZ</td>
<td>94.4</td>
<td>-5.6</td>
<td>321,525</td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td>94.3</td>
<td>-5.7</td>
<td>297,504</td>
</tr>
<tr>
<td>Detroit, MI</td>
<td>91.8</td>
<td>-8.2</td>
<td>296,435</td>
</tr>
<tr>
<td>Tampa, FL</td>
<td>72.6</td>
<td>-27.4</td>
<td>225,733</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>71.2</td>
<td>-28.8</td>
<td>229,713</td>
</tr>
</tbody>
</table>

*Metro areas represented by most dominant urban area. Riverside, California is one of the 20 most populous areas, but did not submit COLI data.

**Index is based 71.0 percent on homeownership costs and 29.0 percent on apartment rent.

***Approximately 2,400 square foot home with 4 bedrooms, 2 baths, family-room (or equivalent), 2-car garage and 8,000 square foot lot. Neighborhoods are typical for corporate middle-management transferees.

Source: Council for Community and Economic Research (C2ER), Cost of Living Index, Q3 2017 (Data based on a survey of 267 urban areas, published October 2017).
Houston Region Population

Houston has a sustained history of exponential population growth.

From the first census in Texas in 1850 through the 2016 intercensal estimates the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area has averaged a compound annual growth rate of 3.4 percent.

The Houston-The Woodlands-Sugar Land MSA is the nation’s fifth most populous metropolitan area. As Houston’s population has grown, the region has climbed in the rankings. In ’70, Houston was the nation’s 14th most populous metro, 10th in ’90, 8th in ’00, and 6th in ’10. Today, Houston is the nation’s fifth. Over that period, three metros—Cleveland, Detroit and San Francisco—have slipped from the top 10 and three metros—Atlanta, Miami and Houston—took their places.

Between ’10 and ’16 (the period for which the Bureau of the Census released its most recent population estimates), metro Houston added 851,971 residents, the largest gain of any U.S. metro over that period. About 44 percent of this growth came from the natural increase (births minus deaths) and around 56 percent came from net in-migration (more residents moving in than out).
## Houston Region Population

### POPULATION TOTALS

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Houston-The Woodlands-Sugar Land MSA*</th>
<th>Harris County</th>
<th>City of Houston</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>27,984</td>
<td>4,688</td>
<td>2,396</td>
</tr>
<tr>
<td>1860</td>
<td>55,317</td>
<td>9,070</td>
<td>4,845</td>
</tr>
<tr>
<td>1870</td>
<td>80,866</td>
<td>17,375</td>
<td>9,332</td>
</tr>
<tr>
<td>1880</td>
<td>112,053</td>
<td>27,985</td>
<td>16,513</td>
</tr>
<tr>
<td>1890</td>
<td>137,800</td>
<td>37,249</td>
<td>27,557</td>
</tr>
<tr>
<td>1900</td>
<td>202,438</td>
<td>63,768</td>
<td>44,633</td>
</tr>
<tr>
<td>1910</td>
<td>252,066</td>
<td>115,693</td>
<td>78,800</td>
</tr>
<tr>
<td>1920</td>
<td>348,661</td>
<td>186,667</td>
<td>138,276</td>
</tr>
<tr>
<td>1930</td>
<td>545,547</td>
<td>359,328</td>
<td>292,352</td>
</tr>
<tr>
<td>1940</td>
<td>752,937</td>
<td>528,961</td>
<td>384,514</td>
</tr>
<tr>
<td>1950</td>
<td>1,083,100</td>
<td>806,701</td>
<td>596,163</td>
</tr>
<tr>
<td>1960</td>
<td>1,594,894</td>
<td>1,243,158</td>
<td>938,219</td>
</tr>
<tr>
<td>1970</td>
<td>2,195,146</td>
<td>1,741,912</td>
<td>1,233,505</td>
</tr>
<tr>
<td>1980</td>
<td>3,135,806</td>
<td>2,409,544</td>
<td>1,595,138</td>
</tr>
<tr>
<td>1990</td>
<td>3,750,411</td>
<td>2,818,199</td>
<td>1,630,553</td>
</tr>
<tr>
<td>2000</td>
<td>4,693,161</td>
<td>3,400,578</td>
<td>1,953,631</td>
</tr>
<tr>
<td>2010</td>
<td>5,920,416</td>
<td>4,092,459</td>
<td>2,099,451</td>
</tr>
<tr>
<td>2011</td>
<td>6,059,752</td>
<td>4,181,238</td>
<td>2,142,221</td>
</tr>
<tr>
<td>2012</td>
<td>6,185,988</td>
<td>4,262,504</td>
<td>2,177,376</td>
</tr>
<tr>
<td>2013</td>
<td>6,332,710</td>
<td>4,352,462</td>
<td>2,216,460</td>
</tr>
<tr>
<td>2014</td>
<td>6,497,864</td>
<td>4,441,928</td>
<td>2,256,192</td>
</tr>
<tr>
<td>2015</td>
<td>6,647,465</td>
<td>4,533,341</td>
<td>2,296,224</td>
</tr>
<tr>
<td>2016</td>
<td>6,772,470</td>
<td>4,589,928</td>
<td>2,303,482</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

* The Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) contains nine counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller.
Nearly one in four Houstonians was born outside the U.S.

In 2016, the Houston Metropolitan Statistical Area (MSA) contained an estimated 1.6 million foreign-born residents, according to the U.S. Census Bureau. This figure represents 23.5 percent of the metro population.

Mexico accounts for two-fifths of Houston’s foreign-born residents (638,520). El Salvador (117,801) was the birthplace of the next largest group from Central America, followed by Honduras (60,812) and Guatemala (40,611).

Asia accounts for one-fourth of Houston’s foreign-born residents (400,248). Asian nations with the largest populations in Houston include Vietnam (91,080), India (81,949), China (62,889), Philippines (40,785) and Pakistan (34,931).
Houston is a magnet for international migration.

<table>
<thead>
<tr>
<th>PERCENT OF METRO POPULATION FOREIGN-BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Most Populous Metro Areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metro Area</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miami, FL</td>
<td>40.5%</td>
</tr>
<tr>
<td>Los Angeles, CA</td>
<td>33.6%</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>30.9%</td>
</tr>
<tr>
<td>New York, NY</td>
<td>29.3%</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>24.1%</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>23.5%</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>23.0%</td>
</tr>
<tr>
<td>Riverside, CA</td>
<td>21.5%</td>
</tr>
<tr>
<td>Boston, MA</td>
<td>18.8%</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>18.2%</td>
</tr>
<tr>
<td>Seattle, WA</td>
<td>18.2%</td>
</tr>
<tr>
<td>Chicago, IL</td>
<td>17.6%</td>
</tr>
<tr>
<td>Phoenix, AZ</td>
<td>14.5%</td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td>13.7%</td>
</tr>
<tr>
<td>Tampa, FL</td>
<td>13.3%</td>
</tr>
<tr>
<td>Denver, CO</td>
<td>12.2%</td>
</tr>
<tr>
<td>Philadelphia, PA</td>
<td>11.1%</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td>10.6%</td>
</tr>
<tr>
<td>Detroit, MI</td>
<td>9.7%</td>
</tr>
<tr>
<td>St. Louis, MO</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2016 American Community Survey

Houston’s foreign-born population nearly doubled in the nineties, from 460,380 in ’90 to 895,944 in ’00. Since then, the region’s foreign-born population continued its rapid growth reaching 1.6 million in ’16.

In ’16, nearly one in four Houstonians was foreign-born, versus one in seven nationwide.

Only five of the nation’s 20 most populous metropolitan areas—Miami, Los Angeles, San Francisco, New York and San Diego—have a larger share of foreign residents than Houston.
Most Populous Metropolitan Areas

Houston is the fifth most populous metro in the nation.

### POPULATION ESTIMATES

#### U.S. Metros

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Residents July 1, 2016</th>
<th>Residents added 7/1/15 to 7/1/16</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York-Newark-Jersey City, NY-NJ-PA</td>
<td>20,153,634</td>
<td>35,571</td>
<td>0.2%</td>
</tr>
<tr>
<td>Los Angeles-Long Beach-Anaheim, CA</td>
<td>13,310,447</td>
<td>41,619</td>
<td>0.3%</td>
</tr>
<tr>
<td>Chicago-Naperville-Elgin, IL-IN-WI</td>
<td>9,512,999</td>
<td>-19,570</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>7,233,323</td>
<td>143,435</td>
<td>2.0%</td>
</tr>
<tr>
<td>Houston-The Woodlands-Sugar Land, TX</td>
<td>6,772,470</td>
<td>125,005</td>
<td>1.9%</td>
</tr>
<tr>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>6,131,977</td>
<td>53,508</td>
<td>0.9%</td>
</tr>
<tr>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE-MD</td>
<td>6,070,500</td>
<td>8,197</td>
<td>0.1%</td>
</tr>
<tr>
<td>Miami-Fort Lauderdale-West Palm Beach, FL</td>
<td>6,066,387</td>
<td>64,670</td>
<td>1.1%</td>
</tr>
<tr>
<td>Atlanta-Sandy Springs-Roswell, GA</td>
<td>5,789,700</td>
<td>90,650</td>
<td>1.6%</td>
</tr>
<tr>
<td>Boston-Cambridge-Newton, MA-NH</td>
<td>4,794,447</td>
<td>27,692</td>
<td>0.6%</td>
</tr>
<tr>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>4,679,166</td>
<td>36,939</td>
<td>0.8%</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>4,661,537</td>
<td>93,680</td>
<td>2.1%</td>
</tr>
<tr>
<td>Riverside-San Bernardino-Ontario, CA</td>
<td>4,527,837</td>
<td>52,400</td>
<td>1.2%</td>
</tr>
<tr>
<td>Detroit-Warren-Dearborn, MI</td>
<td>4,297,617</td>
<td>79</td>
<td>0.0%</td>
</tr>
<tr>
<td>Seattle-Tacoma-Bellevue, WA</td>
<td>3,798,902</td>
<td>71,805</td>
<td>1.9%</td>
</tr>
<tr>
<td>Minneapolis-St. Paul-Bloomington, MN-WI</td>
<td>3,551,036</td>
<td>32,784</td>
<td>0.9%</td>
</tr>
<tr>
<td>San Diego-Carlsbad, CA</td>
<td>3,317,749</td>
<td>27,504</td>
<td>0.8%</td>
</tr>
<tr>
<td>Tampa-St. Petersburg-Clearwater, FL</td>
<td>3,032,171</td>
<td>61,085</td>
<td>2.1%</td>
</tr>
<tr>
<td>Denver-Aurora-Lakewood, CO</td>
<td>2,853,077</td>
<td>44,261</td>
<td>1.6%</td>
</tr>
<tr>
<td>St. Louis, MO-IL</td>
<td>2,807,002</td>
<td>-1,328</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

Between July 1, 2015 and July 1, 2016 (the period for which the U.S. Census Bureau released its most recent population estimates), the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) added 125,005 residents, the second largest gain among all U.S. metro areas.
### Most Populous Counties

Harris County is the third most populous county in the nation.

#### POPULATION ESTIMATES

#### U.S. Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Population As of July 1, 2016</th>
<th>Residents Added 7/1/15 to 7/1/16</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles County, CA</td>
<td>10,137,951</td>
<td>25,660</td>
<td>0.3%</td>
</tr>
<tr>
<td>Cook County, IL</td>
<td>5,203,499</td>
<td>-21,324</td>
<td>-0.4%</td>
</tr>
<tr>
<td><strong>Harris County, TX</strong></td>
<td>4,589,928</td>
<td>56,587</td>
<td>1.3%</td>
</tr>
<tr>
<td>Maricopa County, AZ</td>
<td>4,242,997</td>
<td>81,360</td>
<td>2.0%</td>
</tr>
<tr>
<td>San Diego County, CA</td>
<td>3,317,749</td>
<td>27,504</td>
<td>0.8%</td>
</tr>
<tr>
<td>Orange County, CA</td>
<td>3,172,532</td>
<td>15,959</td>
<td>0.5%</td>
</tr>
<tr>
<td>Miami-Dade County, FL</td>
<td>2,712,945</td>
<td>20,352</td>
<td>0.8%</td>
</tr>
<tr>
<td>Kings County, NY</td>
<td>2,629,150</td>
<td>4,209</td>
<td>0.2%</td>
</tr>
<tr>
<td>Dallas County, TX</td>
<td>2,574,984</td>
<td>29,209</td>
<td>1.2%</td>
</tr>
<tr>
<td>Riverside County, TX</td>
<td>2,387,741</td>
<td>34,849</td>
<td>1.5%</td>
</tr>
<tr>
<td>Queens County, NY</td>
<td>2,333,054</td>
<td>5,826</td>
<td>0.3%</td>
</tr>
<tr>
<td>San Bernardino County, CA</td>
<td>2,155,664</td>
<td>46,375</td>
<td>2.2%</td>
</tr>
<tr>
<td>King County, WA</td>
<td>2,149,970</td>
<td>35,714</td>
<td>1.7%</td>
</tr>
<tr>
<td>Clark County, NV</td>
<td>2,140,096</td>
<td>17,551</td>
<td>0.8%</td>
</tr>
<tr>
<td>Tarrant County, TX</td>
<td>2,016,872</td>
<td>35,462</td>
<td>1.8%</td>
</tr>
<tr>
<td>Santa Clara County, CA</td>
<td>1,928,680</td>
<td>33,198</td>
<td>1.8%</td>
</tr>
<tr>
<td>Bexar County, TX</td>
<td>1,919,402</td>
<td>9,297</td>
<td>0.5%</td>
</tr>
<tr>
<td>Broward County, FL</td>
<td>1,909,632</td>
<td>22,351</td>
<td>1.2%</td>
</tr>
<tr>
<td>Wayne County, MI</td>
<td>1,749,366</td>
<td>-7,696</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Alameda County, CA</td>
<td>1,647,704</td>
<td>14,957</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
Most Populous Cities

Houston is the fourth most populous city in the nation.

<table>
<thead>
<tr>
<th>City</th>
<th>Residents as of July 1, 2016</th>
<th>Residents added 7/1/15 to 7/1/16</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York, NY</td>
<td>8,537,673</td>
<td>21,171</td>
<td>0.2%</td>
</tr>
<tr>
<td>Los Angeles, CA</td>
<td>3,976,322</td>
<td>27,173</td>
<td>0.7%</td>
</tr>
<tr>
<td>Chicago, IL</td>
<td>2,704,958</td>
<td>-8,638</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>2,303,482</td>
<td>18,666</td>
<td>0.8%</td>
</tr>
<tr>
<td>Phoenix, AZ</td>
<td>1,615,017</td>
<td>32,113</td>
<td>2.0%</td>
</tr>
<tr>
<td>Philadelphia, PA</td>
<td>1,567,872</td>
<td>2,908</td>
<td>0.2%</td>
</tr>
<tr>
<td>San Antonio, TX</td>
<td>1,492,510</td>
<td>24,473</td>
<td>1.7%</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>1,406,630</td>
<td>15,715</td>
<td>1.1%</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>1,317,929</td>
<td>20,602</td>
<td>1.6%</td>
</tr>
<tr>
<td>San Jose, CA</td>
<td>1,025,350</td>
<td>2,723</td>
<td>0.3%</td>
</tr>
<tr>
<td>Austin, TX</td>
<td>947,890</td>
<td>17,738</td>
<td>1.9%</td>
</tr>
<tr>
<td>Jacksonville, FL</td>
<td>880,619</td>
<td>13,455</td>
<td>1.6%</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>870,887</td>
<td>8,883</td>
<td>1.0%</td>
</tr>
<tr>
<td>Columbus, OH</td>
<td>860,090</td>
<td>10,046</td>
<td>1.2%</td>
</tr>
<tr>
<td>Indianapolis, IN</td>
<td>855,164</td>
<td>2,869</td>
<td>0.3%</td>
</tr>
<tr>
<td>Fort Worth, TX</td>
<td>854,113</td>
<td>19,942</td>
<td>2.4%</td>
</tr>
<tr>
<td>Charlotte, NC</td>
<td>842,051</td>
<td>15,656</td>
<td>1.9%</td>
</tr>
<tr>
<td>Seattle, WA</td>
<td>704,352</td>
<td>20,847</td>
<td>3.1%</td>
</tr>
<tr>
<td>Denver, CO</td>
<td>693,060</td>
<td>13,028</td>
<td>1.9%</td>
</tr>
<tr>
<td>El Paso, TX</td>
<td>683,080</td>
<td>4,510</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
The Work Ethic in Houston

The work ethic is alive, well and flourishing in Houston.

Houston’s business success appears related, at least in part, to the overwhelming prevalence of the strong work ethic here and to confidence that Houston provides an environment in which individual effort is rewarded.

According to Rice University’s annual Houston Area Survey, a large majority of Houstonians agree that “if you work hard in this city, eventually you will succeed.” In March 1982, when employment in Houston stood at what was then the all-time peak, 82.3 percent of respondents agreed. In February 1987, when Houston was at the bottom of its recession and unemployment stood above 10 percent, 77.1 percent of respondents still shared this view. In 1999, 85 percent of Houstonians accepted this statement — a record at the time. In 2001, agreement soared to 88.7 percent. (By 1990, it had become clear that Houstonians’ responses to this item barely shifted, thus the question is only asked every other year.)

In ’15, when the region struggled with massive layoffs in the oil and gas industry, Houstonians remained optimistic, with 87.3 percent agreeing with the statement.

In contrast to Houston’s strongly positive attitude, agreement with this same statement in national samples over the same period has ranged only from 58 to 63 percent. The difference between Houston and the nation as a whole is significant and has endured through the entire range of the regional business cycle.

The confidence that personal effort will be rewarded in Houston transcends racial and ethnic categories. Over the past six surveys, on average 85 percent of Anglos, 82 percent of Blacks, 88 percent of U.S.-born Latinos, and 94 percent of U.S.-born Asians agreed with the statement.
Gross Area Product Forecast

The Perryman Group forecasts sustained economic growth for the Houston metro over the next quarter century.

Real (i.e., net of inflation) Gross Area Product (GAP) in the Houston region is expected to grow at an average annual rate of 3.1 percent from ‘15 to ‘40 in The Perryman Group’s forecast.

The Houston MSA’s real gross area product is projected to more than double between ‘15 and ‘40.

Compound annual growth rates of real gross area product from ‘15 to ‘40 are highest in services (3.8 percent), trade (3.4 percent) and manufacturing (3.2 percent).
## Gross Area Product Forecast

### REAL GROSS AREA PRODUCT: HOUSTON-THE WOODLANDS-SUGAR LAND MSA

Estimates and Forecasts

<table>
<thead>
<tr>
<th>Year</th>
<th>Real Gross Area Product ($ Billions) Constant '09 Dollars</th>
<th>Compound Annual Growth Rate (Percent), 5 Years Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$472.544</td>
<td>5.4%</td>
</tr>
<tr>
<td>2020</td>
<td>557.923</td>
<td>3.4%</td>
</tr>
<tr>
<td>2025</td>
<td>668.199</td>
<td>3.7%</td>
</tr>
<tr>
<td>2030</td>
<td>783.939</td>
<td>3.3%</td>
</tr>
<tr>
<td>2035</td>
<td>901.058</td>
<td>2.8%</td>
</tr>
<tr>
<td>2040</td>
<td>1,015.464</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Population and Employment Forecast

The Perryman Group forecasts Houston’s population to reach 10 million and employment to grow to 4.7 million by 2040.

### POPULATION AND EMPLOYMENT: HOUSTON MSA

<table>
<thead>
<tr>
<th>Years</th>
<th>Population</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘15</td>
<td>6.6</td>
<td>3.1</td>
</tr>
<tr>
<td>‘20</td>
<td>7.2</td>
<td>3.4</td>
</tr>
<tr>
<td>‘25</td>
<td>7.8</td>
<td>3.7</td>
</tr>
<tr>
<td>‘30</td>
<td>8.5</td>
<td>4.1</td>
</tr>
<tr>
<td>‘35</td>
<td>9.3</td>
<td>4.4</td>
</tr>
<tr>
<td>‘40</td>
<td>10.0</td>
<td>4.7</td>
</tr>
</tbody>
</table>


From ‘15 to ‘40, The Perryman Group sees population growth averaging 2.1 percent annually in the Houston region. Over the same period, the Texas-based economic forecasting firm expects wage and salary employment to also rise at an annual rate of 2.1 percent.

The Houston–The Woodlands–Sugar Land Metro Area will add 3.5 million residents between ‘15 and ‘40. Perryman also forecasts that Houston will add an additional 1.6 million jobs and account for one-fourth of Texas job growth during that time frame.
## Population and Employment Forecast

### HOUSTON-THE WOODLANDS – SUGAR LAND MSA

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (000,000)</th>
<th>Payroll Employment (000,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6.583</td>
<td>3.086</td>
</tr>
<tr>
<td>2020</td>
<td>7.192</td>
<td>3.397</td>
</tr>
<tr>
<td>2025</td>
<td>7.829</td>
<td>3.739</td>
</tr>
<tr>
<td>2030</td>
<td>8.515</td>
<td>4.075</td>
</tr>
<tr>
<td>2035</td>
<td>9.251</td>
<td>4.396</td>
</tr>
<tr>
<td>2040</td>
<td>10.040</td>
<td>4.693</td>
</tr>
</tbody>
</table>

Top Metro Areas by Gross Domestic Product

Houston has the sixth largest metro GDP in the nation.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metro Area</th>
<th>GDP (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New York-Newark-Jersey City, NY-NJ-Pa</td>
<td>$1,657,457</td>
</tr>
<tr>
<td>2</td>
<td>Los Angeles-Long Beach-Anaheim, CA</td>
<td>$1,001,677</td>
</tr>
<tr>
<td>3</td>
<td>Chicago-Naperville-Elgin, IL-IN-WI</td>
<td>$651,222</td>
</tr>
<tr>
<td>4</td>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>$511,606</td>
</tr>
<tr>
<td>5</td>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>$509,224</td>
</tr>
<tr>
<td>6</td>
<td>Houston-The Woodlands-Sugar Land, TX</td>
<td>$478,618</td>
</tr>
<tr>
<td>7</td>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>$470,529</td>
</tr>
<tr>
<td>8</td>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE-MD</td>
<td>$431,038</td>
</tr>
<tr>
<td>9</td>
<td>Boston-Cambridge-Newton, MA-NH</td>
<td>$422,660</td>
</tr>
<tr>
<td>10</td>
<td>Atlanta-Sandy Springs-Roswell, GA</td>
<td>$363,768</td>
</tr>
<tr>
<td>11</td>
<td>Seattle-Tacoma-Bellevue, WA</td>
<td>$330,409</td>
</tr>
<tr>
<td>12</td>
<td>Miami-Fort Lauderdale-West Palm Beach, FL</td>
<td>$328,482</td>
</tr>
<tr>
<td>13</td>
<td>Detroit-Warren-Dearborn, MI</td>
<td>$251,691</td>
</tr>
<tr>
<td>14</td>
<td>San Jose-Sunnyvale-Santa Clara, CA</td>
<td>$252,487</td>
</tr>
<tr>
<td>15</td>
<td>Minneapolis-St. Paul-Bloomington, MN-WI</td>
<td>$246,689</td>
</tr>
<tr>
<td>16</td>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>$230,070</td>
</tr>
<tr>
<td>17</td>
<td>San Diego-Carlsbad, CA</td>
<td>$215,343</td>
</tr>
<tr>
<td>18</td>
<td>Denver-Aurora-Lakewood, CO</td>
<td>$197,969</td>
</tr>
<tr>
<td>19</td>
<td>Baltimore-Columbia-Towson, MD</td>
<td>$187,395</td>
</tr>
<tr>
<td>20</td>
<td>Portland-Vancouver-Hillsboro, OR-WA</td>
<td>$164,466</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Economic Analysis, 2016 GDP by Metropolitan Area, current dollars

The U.S. Bureau of Economic Analysis estimates Houston’s gross domestic product (GDP) at $478.6 billion in ‘16, ranking it as the nation’s sixth largest metro economy. Metro Houston’s GDP decreased 3.6 percent from $496.7 billion in ‘15.

The Houston region has a gross domestic product greater than 37 states and accounted for more than a quarter of Texas’ GDP.

If Houston were an independent nation, the region would have the 24th largest economy in the world, placing it behind Sweden ($511.4 billion) and ahead of Poland ($467.6 billion).
Stay up to date on the Houston economy through the year.

Check out other Partnership Research publications at houston.org/economy.