

At a Glance

- The Spindletop oil discovery near Beaumont in 1901 transformed the small lumber and port town into a thriving oil and gas hub, with one of the nation's largest concentrations of refineries, petrochemical plants and related businesses.
- The area, which includes the city of Orange, became known as the Golden Triangle, a reference to the wealth that came as a result of Spindletop's oil riches.
- Median household income grew faster in Beaumont–Port Arthur than in all major Texas metros from 2014 to 2016, likely due to the boom in downstream energy and the resulting highly paid jobs. However, median household income remains far below the comparable state and U.S. figures.

Population
(2017): 412,437

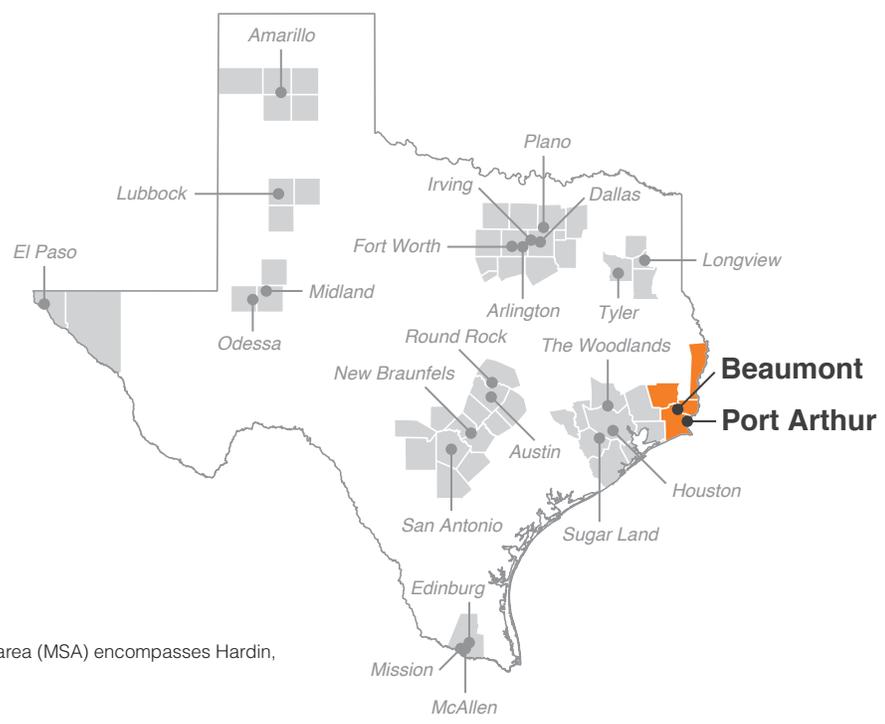
Population growth
(2010–17): 2.2 percent (Texas: 12.1 percent)

Median household income (2017): \$49,875 (Texas: \$59,206)

National MSA rank (2017): No. 130*

Beaumont

Port Arthur



*The Beaumont–Port Arthur metropolitan statistical area (MSA) encompasses Hardin, Jefferson, Newton and Orange counties.

Beaumont—Port Arthur:

The Golden Triangle Shines as Petrochemicals Boom

HISTORY: Discovery of Oil Transforms the Area

While Beaumont, like many Texas communities, traces its initial growth to the post-Civil War arrival of the railroad, it owes its longer-term viability to the Spindletop oil gusher in 1901. The oil field south of town spawned three oil companies—the Texas Co. (later Texaco), Gulf Oil Corp. and Humble (later Exxon Mobil)—and established the region as an oil distribution and refining hub. Beaumont, part of Texas’ Golden Triangle along with Port Arthur and Orange, saw its population double during Spindletop’s first decade. Discovery of another oil field at Spindletop in 1925 again brought a burst of growth to the area.¹

Nearby Port Arthur, which founder Arthur E. Stilwell initially envisioned as a tourist destination (naming the town after himself), became a seaport following creation of a canal linking Sabine Lake to Sabine Pass in 1899. The canal was deepened and extended up the

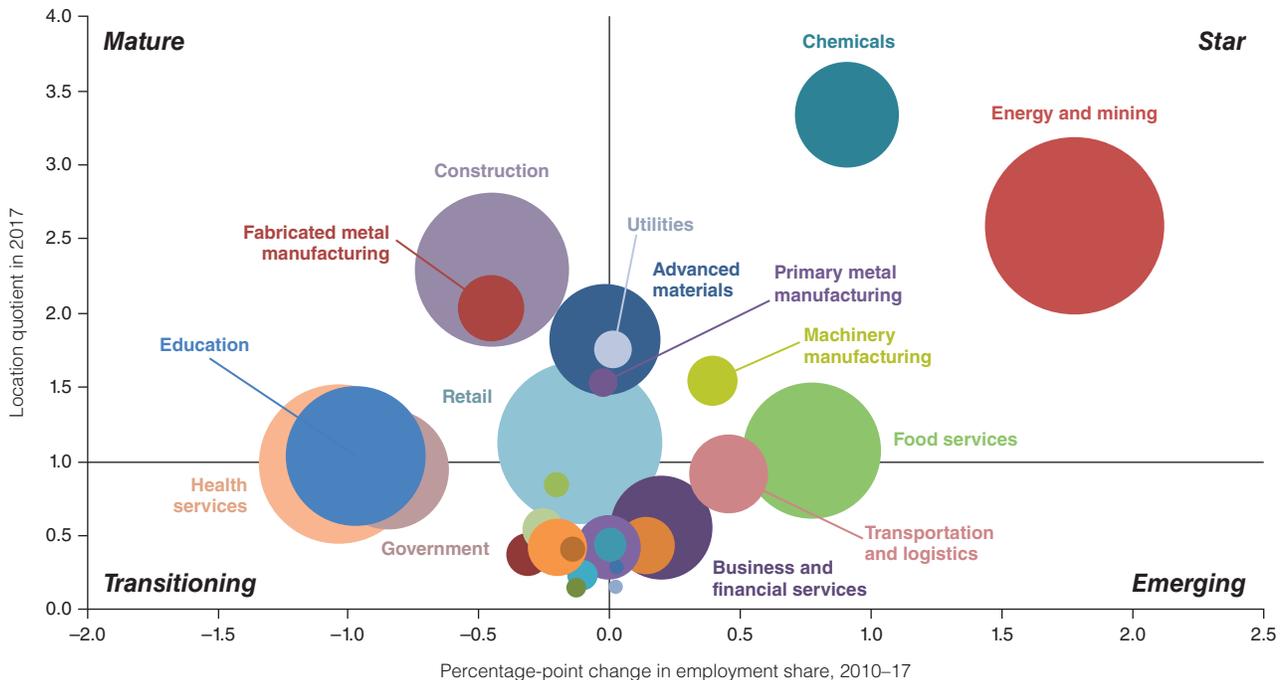
Neches River to Beaumont and Orange in 1908. Refineries tied to Spindletop followed and, by 1909, Port Arthur was already the nation’s 12th-largest port based on the value of exports. By 1914, it became the second-largest oil-refining center in the country.

INDUSTRY CLUSTERS: A Global Petrochemical and Industrial Complex

Location quotients (LQs), which compare the relative concentration of industry clusters locally and nationally, are a convenient way of assessing key drivers in an economy. Industry cluster growth is measured by the percentage-point change in its share of local employment between 2010 and 2017 (*Chart 11.1*).²

Clusters in the top half of *Chart 11.1*, such as chemicals, construction, and energy and mining, have a larger share of employment relative to the nation and, thus, an LQ greater than 1. These clusters are generally vital

Chart 11.1: Petrochemicals and Refineries Central to Beaumont–Port Arthur's Economy



NOTE: Bubble size represents cluster share of metropolitan statistical area employment.
 SOURCES: Texas Workforce Commission; Bureau of Labor Statistics.

to the area's economy and can be expanding relatively rapidly ("star") or growing relatively slowly ("mature"). Those in the bottom half are less-dominant locally than nationally and, hence, have an LQ less than 1. "Emerging" clusters are fast growing; those growing slowly or declining are "transitioning."

Energy and mining-related companies, including both upstream and downstream firms, make up the largest cluster in Beaumont-Port Arthur, employing 14.7 percent of the workforce. Major employers include Exxon Mobil in Beaumont (2,000 workers) and Motiva Enterprises and Valero in Port Arthur (1,500 and 850, respectively).³ The Motiva facility processes more than 600,000 barrels of oil per day, making it the largest refinery in North America.

Similarly, the chemical industry is a major cluster, its relative size increasing since 2010. Chemical manufacturing boasts 3.3 times the concentration in Beaumont-Port Arthur than in the U.S. due to the significant presence of employers such as BASF Corp. and Total Petrochemicals and Refining USA, which together operate the world's largest steam cracker in Port Arthur, and Exxon Mobil's chemical and polyethylene plants.

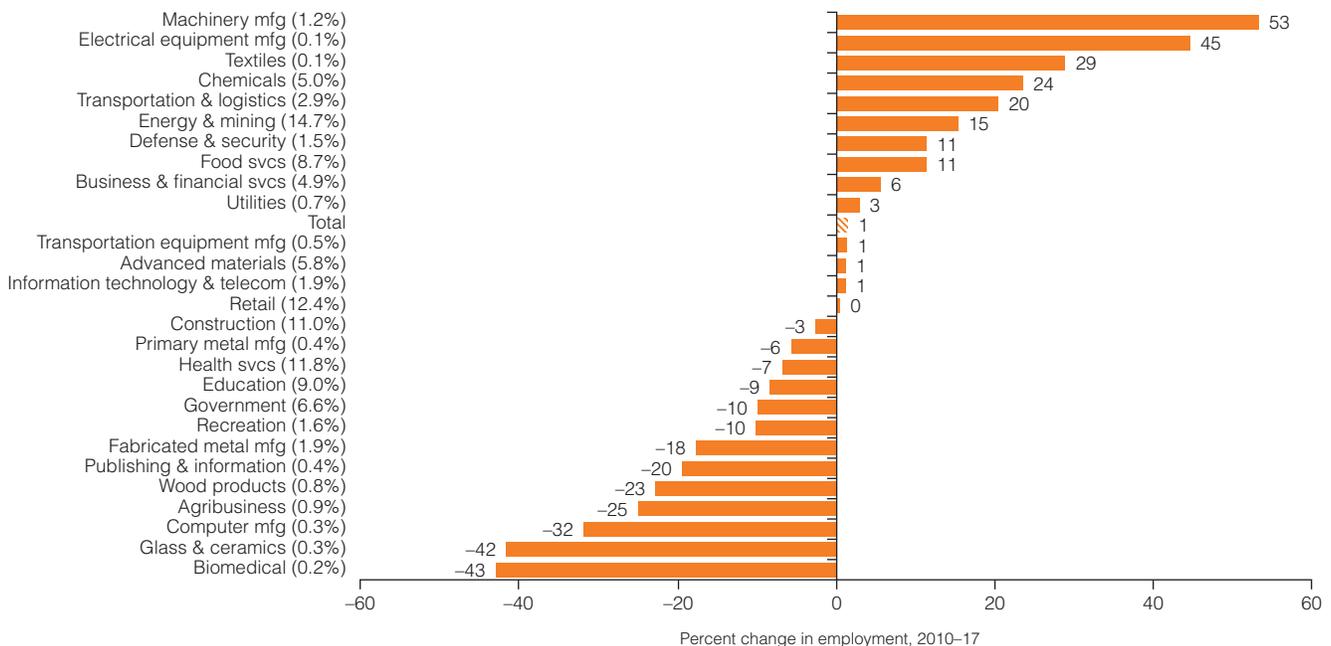
Texas-based chemical companies have benefited from the last decade's shale-led boom that has produced cheap and plentiful supplies of natural gas,

which is feedstock for propylene and other petrochemicals. Record low natural gas prices gave the companies a competitive edge vis-à-vis foreign producers that rely on oil as an input and propelled the construction or expansion of plants along the Gulf Coast. The projects include BASF's \$270 million expansion of its dicamba herbicide production facility in Beaumont.⁴

With the decline of oil prices in mid-2014, many refinery-related expansions were put on hold. As prices stabilized and then increased, some companies renewed plans. Total Petrochemicals has confirmed plans to build a \$1.7 billion ethane cracker in Port Arthur, scheduled to begin operations in 2020.

Beaumont-Port Arthur's other important industries have grown in support of its outsized manufacturing and energy base. Payrolls in electrical equipment and machinery manufacturing each grew at around 50 percent in 2010-17 (Chart 11.2). The transportation and logistics cluster, employing 3 percent of the workforce, is also among the fastest growing in Beaumont-Port Arthur, expanding 20 percent in 2010-17. The region remains an important seaport, with both the ports of Beaumont and Port Arthur placing among the top 25 U.S. water ports for total tonnage in 2017.⁵ The majority of the tonnage moving through both ports is crude petroleum and its refined products (gasoline, diesel

Chart 11.2: Energy and Manufacturing Payrolls See Strong Growth



NOTES: Percent change in employment is shown in whole numbers. Each cluster's share of total jobs is shown in parentheses (rounded to one decimal place). SOURCES: Texas Workforce Commission; authors' calculations.

Table 11.1: Earnings in Energy-Related Clusters Outperform U.S. Averages

Cluster	Beaumont—Port Arthur					U.S.
	2010	2012	2014	2016	2017	2017
Chemicals	104,749	110,483	118,628	120,187	127,863	72,887
Energy and mining	88,747	89,992	90,947	100,690	98,938	80,900
Construction	61,393	64,965	65,214	72,117	72,728	60,742
Fabricated metal manufacturing	63,403	69,540	66,602	61,919	61,656	55,830
Advanced materials	90,693	97,395	105,335	107,557	114,780	85,695
Utilities	124,886	111,957	116,700	119,614	122,068	107,188
Machinery manufacturing	60,754	61,640	62,879	69,385	69,905	70,059
Primary metal manufacturing	69,779	74,267	72,041	72,756	70,851	67,868
Retail	29,366	28,766	29,764	30,814	31,376	31,216
Food services	17,500	17,280	16,153	17,101	16,832	18,963
Education	39,895	37,815	38,322	39,391	39,380	49,322
Clusters with location quotient > 1	55,939	61,225	66,369	63,073	67,299	–
Clusters with location quotient < 1	56,207	53,399	51,437	58,991	53,934	–
Average earnings (total)	49,481	51,145	52,279	54,139	54,572	55,375

NOTES: Clusters are listed in order of location quotient (LQ); clusters shown are those with LQs greater than 1. Earnings are in 2017 dollars. SOURCES: Texas Workforce Commission; Bureau of Labor Statistics; authors' calculations.

and fuel oil). In November 2017, voters passed an \$85 million bond measure to upgrade facilities at the Port of Beaumont and improve its rail and highway access.

Driven by high-paying energy and manufacturing jobs, inflation-adjusted annual wages have grown rapidly since 2010 (*Table 11.1*). On average, a worker in Beaumont–Port Arthur made 10.3 percent more in 2017 than in 2010 in real (inflation-adjusted) terms.

Wages in industries with an LQ greater than 1 have driven the area's wages up, and in 2017, workers in these clusters (star and mature) made \$67,300 annually on average, compared with \$54,600 on average across all sectors.

DEMOGRAPHICS: Household Income Increasing, Underscoring Industrial Base

Primarily a petrochemical manufacturing-driven economy benefiting from the shale oil boom, Beaumont–Port Arthur saw median household income expand at a faster pace than in most Texas metros from 2014 to 2017, rising 13 percent.

Still, the metro's median household income of \$49,875 trails the state median, likely due to a less-educated workforce than in the state as a whole. About 17 percent of residents age 25 and older have at least a bachelor's degree, the lowest share among Texas metros covered in

this report and 12 percentage points lower than the Texas average of 28.9 percent. Many petrochemical and manufacturing-related jobs do not require a college degree.

Beaumont–Port Arthur's significance as a key player in the petrochemical industry will continue to dominate its fortunes. Energy companies have several billion-dollar projects planned, which will boost growth in the medium term, particularly in terms of construction employment and both retail and leisure and hospitality spending in the area.

—*Laila Assanie*

Notes

¹ The history of Beaumont and Port Arthur has been adapted from the Texas State Historical Association's *Handbook of Texas*, tshaonline.org/handbook/online/articles/hdb02 and tshaonline.org/handbook/online/articles/hdp05.

² The percentage shares of individual clusters do not add to 100 because some industries are counted in multiple clusters, and some industries are not counted at all based on cluster definitions. (See the appendix for detail.)

³ Employment data are from the individual companies websites: Exxon Mobil's Beaumont facilities, www.corporate.exxonmobil.com/en/company/worldwide-operations/locations/united-states/beaumont-operations/about-us; Motiva Enterprises' refinery, <https://motiva.com/About/What-We-Do/Our-Production>; and Valero's Port Arthur refinery, www.valero.com/en-us/Pages/PortArthur.aspx.

⁴ See "BASF Expands Production Capacity for Herbicide Dicamba in Beaumont, Texas," BASF news release, March 21, 2017, www.basf.com/en/company/news-and-media/news-releases/2017/03/p-17-154.html.

⁵ Port data are from the Bureau of Transportation Statistics, www.bts.dot.gov/port-performance-freight-statistics.