

Leyendecker & Associates

Consultants in Executive Search

The Houston Economy From An Employment Perspective

5847 San Felipe, Suite 1700
Houston, Texas 77057

Phone 713.862.3030
www.leyendecker.com

Serving clients since 1981

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Houston - Boom Town

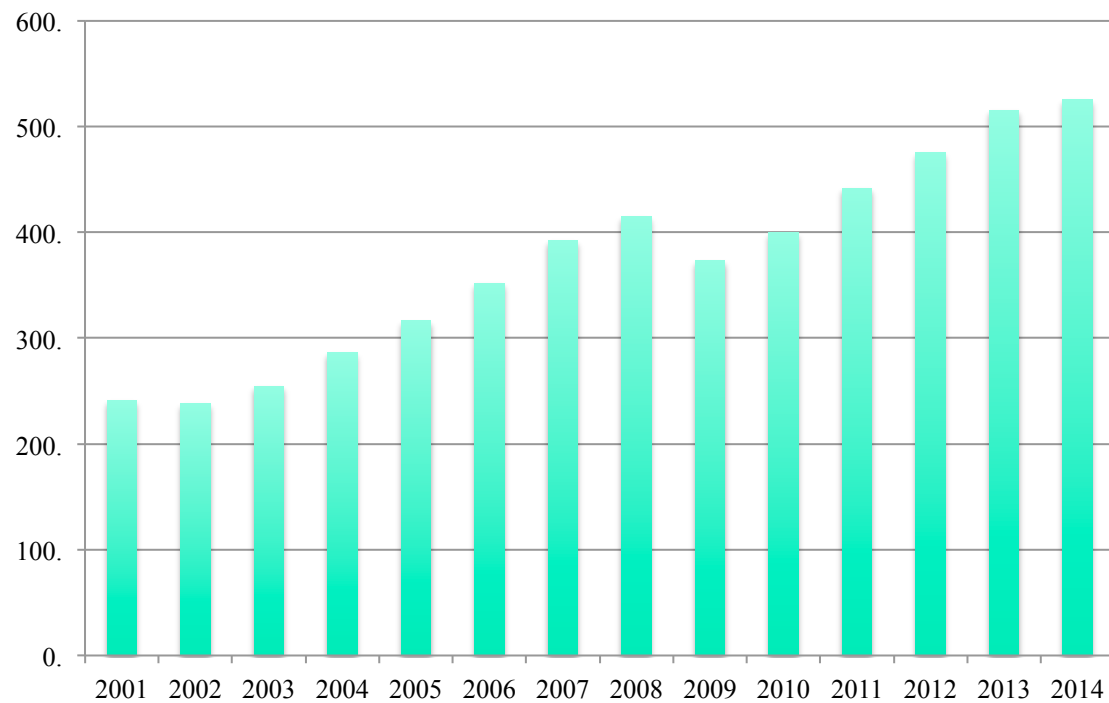
5847 San Felipe, Suite 1700
Houston, Texas 77057

Phone 713.862.3030
www.leyendecker.com

Serving clients since 1981

Committed to the highest standards of value creation

Houston GDP - 2001 to Present



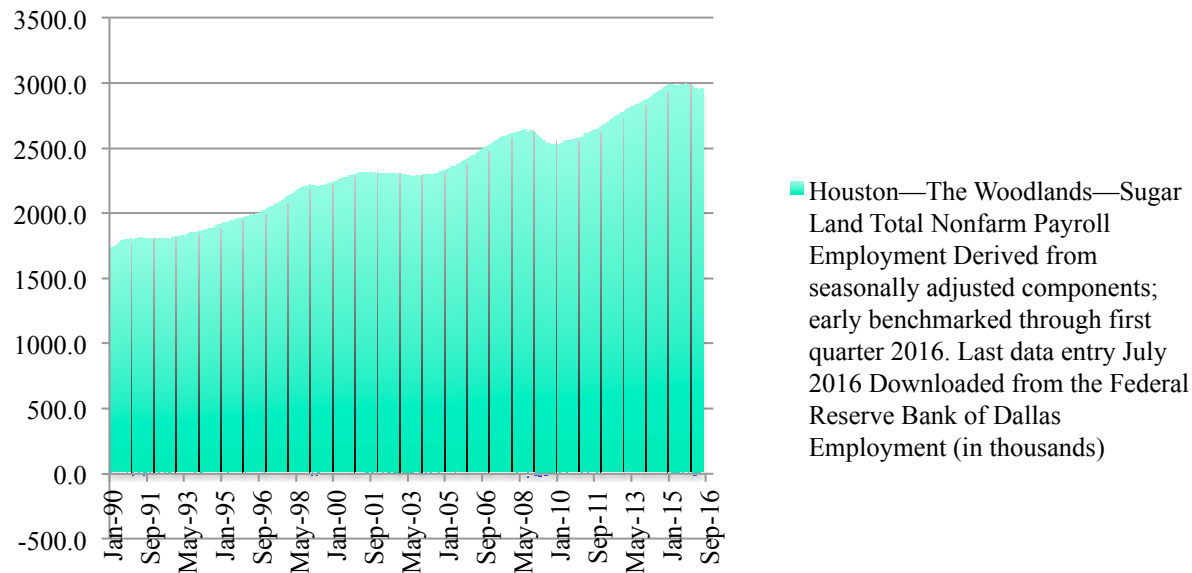
Source – Bureau of Economic Analysis

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Total Houston Employment – 1990 to 2015



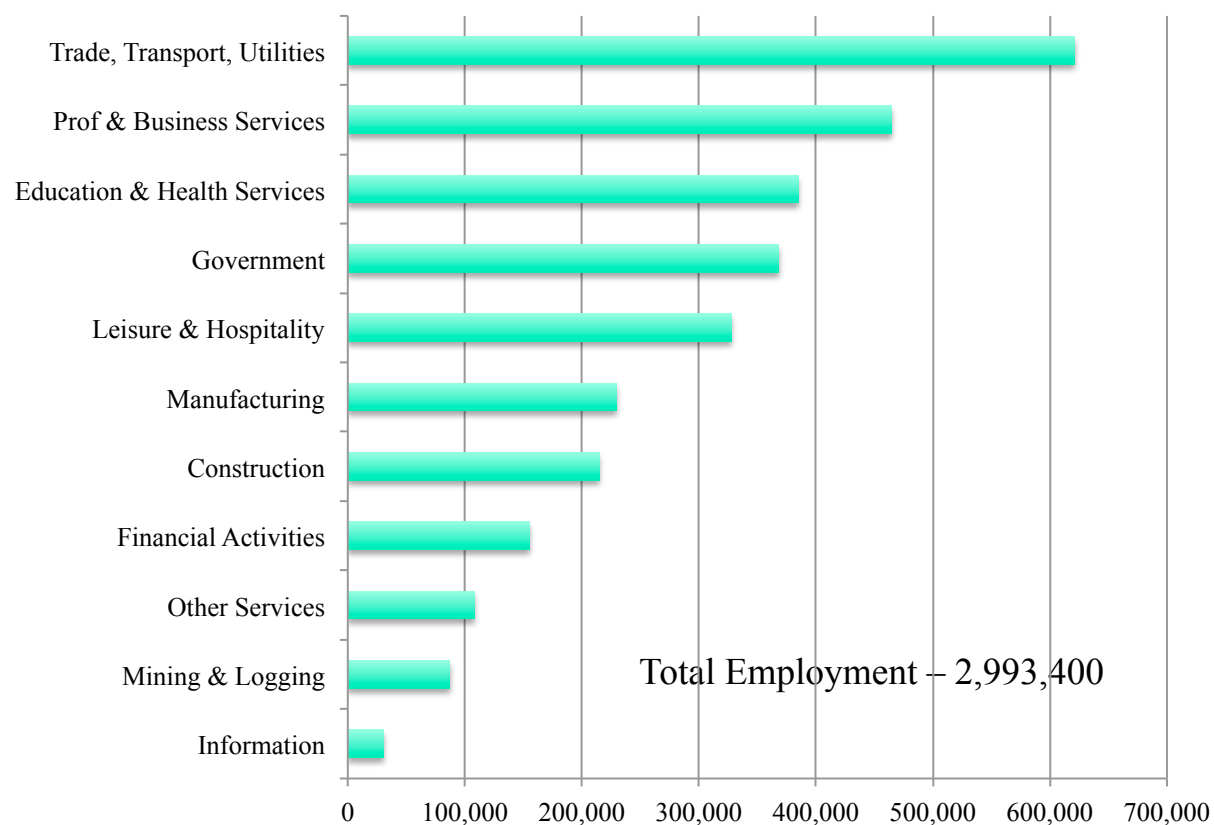
Significant increase in area total employment since 1990. Early (2006) oil & gas shale boom employment around 2.4MM. Current employment around 3MM looks vulnerable. Each past slow down has caused a dip. How deep and how long?

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Total Houston Employment – August 2016



Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Is A Storm Brewing?

5847 San Felipe, Suite 1700
Houston, Texas 77057

Phone 713.862.3030
www.leyendecker.com

Serving clients since 1981

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search



GREATER HOUSTON
PARTNERSHIP

Making Houston Greater.

**From Patrick Jankowski
Chief Economist, Greater Houston Partnership
June 24, 2016**

“Employment growth has fallen from almost 120,000 additional jobs at the end of 2014 to zero last month (May 2016). Worse, the jobs lost have been well-paying positions in manufacturing, engineering, or oil and gas, replaced by lower-paying posts in construction, education and hospitality. Total wages paid dropped from \$48 billion during the last quarter of 2014 to \$44 billion at the end of last year.”

That was in May...

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search



GREATER HOUSTON
PARTNERSHIP

Making Houston Greater.

The Latest News From Greater Houston Partnership...

Houston lost 8,600 jobs in July 2016.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Greater Houston Partnership - June 2016 - Winners & Loses Since 2014

Winners (by job growth since 2014)

Hotel, Restaurants, Bars: **+32,200** – Avg Pay - \$19,760

Health Care: **+21,000** – Avg Pay - \$52,963

Art, Entertainment, Recreation: **+8,400** – Avg Pay \$36,192

Services to Buildings: **+7,800** – Avg Pay \$27,612

Food Stores: **+4,500** – Avg Pay \$26,468

Government: **+3,400** – Avg Pay \$65,052

Construction: **+2,800** – Avg Pay \$68,744

Losers (by job losses since 2014)

Manufacturing: **-31,200** – Avg Pay \$75,816

Mining and Logging: **-25,500** – Avg Pay \$151,840

Engineering Services: **-10,300** – Avg Pay \$126,256

Employment Services: **-7,700** – Avg Pay \$48,516

Transport, Warehousing, Utilities: **-5,100** – Avg Pay \$69,940

Wholesale Trade: **-3,900** – Avg Pay \$78,520

Banks and Credit Unions: **-400** – Avg Pay \$74,048



Committed to the highest standards of value creation

The Compensation Analysis

Taking the job gains and their average compensation and subtracting the job losses and their average compensation means we have lost...

\$5.8B in compensation.

We may have replaced a bunch of the jobs we lost, but the \$2.8B in compensation from the gains pales in comparison to the \$8.6 in compensation we have lost.

Committed to the highest standards of value creation

Additional Economic Data Points

Houston/Galveston Customs District (YTD July 2016)

Exports down **\$28B**

Imports down **\$10.7B**

Source: Greater Houston Partnership

Port of Houston

Import tonnage down **19%** for the year

Export tonnage up **5%** for the year.

Source: Port of Houston Authority, July 2016

Houston MSA Total Building Permits

Year to date building permits are down **8.6%** as of July 2016.

Source: Greater Houston Partnership

Committed to the highest standards of value creation

Additional Economic Data Points

Sales Tax Receipts

Down 4.47% in Houston from a year ago.

Source: Texas Comptroller of Public Accounts

Houston Area New Auto Sales

At a five year low, down 38.1% compared to July 2015

Source: Greater Houston Partnership

Houston Home Sales

**Single family home sales were down 8.8% July 2015
but rebounded 8.2% in August
Home sales for calendar year 2016 are up 1.5%**

Source: Houston Association of Realtors

Committed to the highest standards of value creation

Additional Economic Data Points

Since 2015, almost 50% of the 90 oil and gas upstream and over 50% of the 80 oilfield service company bankruptcies have occurred in Houston.

Source: Haynes & Boone, August 1, 2016

That means at least 85 oil patch companies in Houston have gone bankrupt.

This doesn't count the smaller companies that don't get big law firm attention. The projection is that we will have a good number more bankruptcies this year. If oil prices don't recover measurably soon we can expect more next year.

More oil patch job losses to come?

Leyendecker & Associates

Consultants in Executive Search

Where Do Jobs Come From?

Follow The Money

\$\$\$\$\$\$\$

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Every economy is like a freight train.

Economic engines \$\$\$\$\$ pull the freight cars.



What are the engines of Houston's economy?

Committed to the highest standards of value creation

The Big Three

Upstream Oil & Gas Capex

Midstream Energy Transportation Capex

Downstream Hydrocarbon Processing Capex

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search



Upstream Oil & Gas

Domestic Capital Expenditures

2014 - \$232B

2016 - \$88B



A 62% reduction in capex over 2 years

Reductions in capex leads to a reduction in Houston jobs.

That's a reduction of \$144B in capex over 2 years.

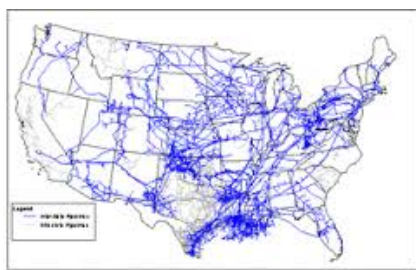
Source: Oil & Gas Journal, March 2016

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Midstream Energy Transportation



Domestic Capital Expenditures

2014 - \$33B

2016 - \$23B

A 30% reduction in capex over 2 years.



Source: Oil & Gas Journal, March 2016

With oil and gas production declining will we need less transportation and storage? Are we currently over building transportation and storage?

Committed to the highest standards of value creation

Downstream Hydrocarbon Processing



Domestic Capital Expenditures

2014 - \$19B

2016 - \$22B

A 16% increase in capex over 2 years

Source: Oil & Gas Journal, March 2016



Jobs are strong in hydrocarbon processing.

*Challenge – It may take 3,000 people to build a petrochemical plant,
but it may only take 150 people to operate it.*

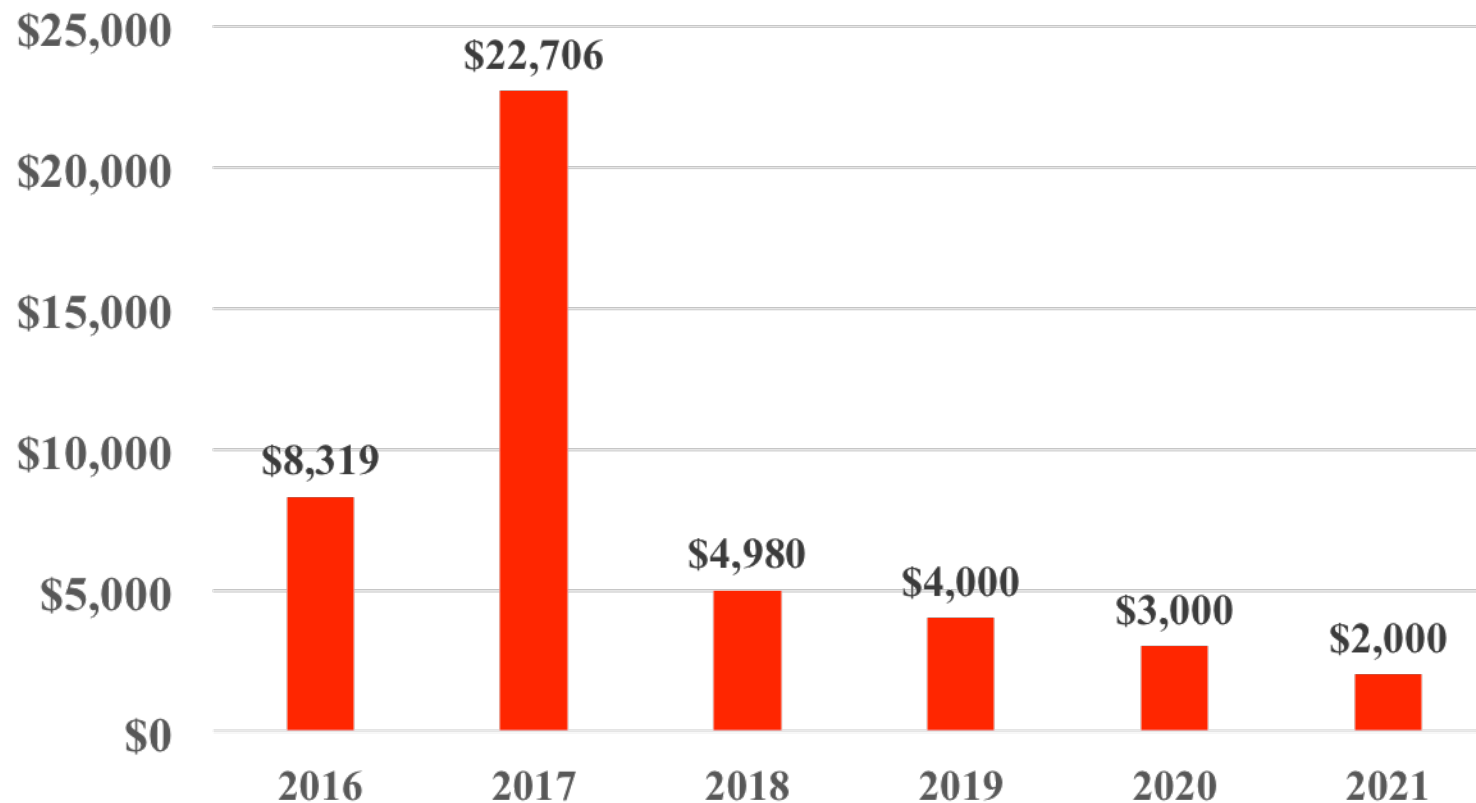
*When all this hydrocarbon processing construction is over might we see
a big fall in construction and related employment?*

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Estimated Petrochem Construction Completions



Source: Dr. Bill Gilmer, Director for the Institute of Regional Forecasting, The University of Houston.

Committed to the highest standards of value creation

The Smaller Engines

The Port of Houston Authority

In 2016, the Port Authority expects to commit \$314 million for various capital projects. **A positive catalyst.** Source: Port Authority of Houston

Houston's Medical Community

Current projects under construction (July 2016) represent about 2 million sq ft of new development. One year ago (July 2015) it was 2.7 million sq ft.

Not so positive. Source: Collier's International

NASA

JSC annual budget for FY 2016 is \$4.6B, similar to 2014.

In FY 2010 it was \$6B. Not so positive. Source: Johnson Space Center

Committed to the highest standards of value creation

Houston's Biggest Economic Engine?

2014 Upstream Capex - \$232B

2016 Upstream Capex - \$88B

Loss of \$144B

2016 Midstream Capex - \$23B

2016 Processing Capex - \$22B

Total of these two - \$45B

Basically ½ of upstream's current depressed number

Conclusion – Upstream capex is Houston's primary economic engine.

The Lag Effect

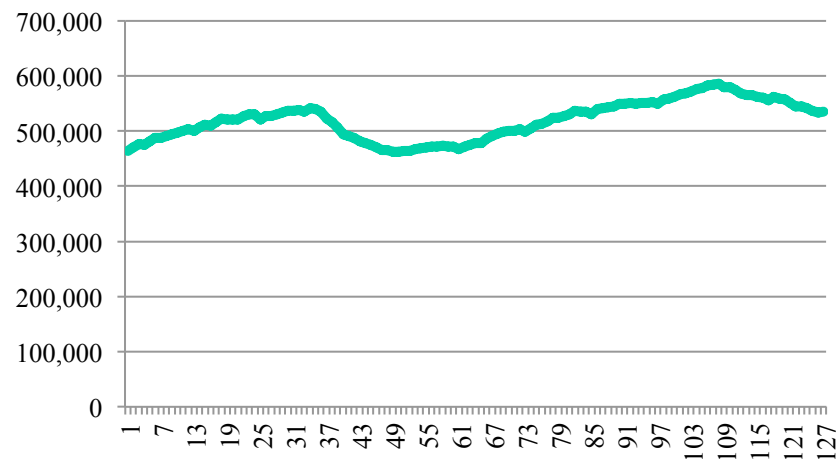
When a freight train engine goes down, because of the significant weight and momentum of all the cars behind the engine, the train doesn't appear to slow measurably for a while.

Leyendecker & Associates

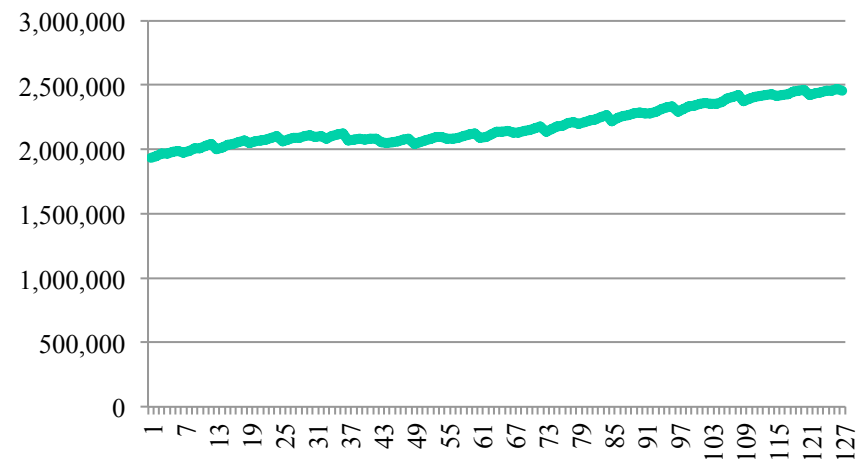
Consultants in Executive Search

The Lag Effect

Goods Producing Jobs
2006 to Present



Service Providing Jobs
2006 to Present



Source: Texas Workforce Commission

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Year	GP	SP	Multiplier
1990	395,900	1,377,900	3.48
1991	400,600	1,404,800	3.51
1992	388,000	1,419,000	3.66
1993	384,800	1,456,000	3.78
1994	395,800	1,489,200	3.76
1995	409,500	1,535,400	3.75
1996	426,000	1,568,400	3.68
1997	441,500	1,636,400	3.71
1998	466,100	1,716,300	3.68
1999	456,200	1,761,700	3.86
2000	464,700	1,806,500	3.89
2001	476,800	1,832,900	3.84
2002	463,700	1,840,100	3.97
2003	446,100	1,843,600	4.13
2004	437,200	1,869,500	4.28
2005	453,600	1,919,200	4.23
2006	485,300	1,986,600	4.09
2007	518,000	2,055,800	3.97
2008	533,400	2,096,200	3.93
2009	487,800	2,071,200	4.25
2010	468,100	2,086,500	4.46
2011	487,200	2,134,500	4.38
2012	521,100	2,205,000	4.23
2013	546,000	2,282,100	4.18
2014	569,700	2,358,200	4.14
2015	565,600	2,423,400	4.28
Aug-16	532,200	2,461,200	4.62

The Lag Effect

Goods Producing – Service Providing Jobs
1990 to Present

Source: Texas Workforce Commission

Committed to the highest standards of value creation

The Lag Effect

**Goods Producing jobs peaked in December 2014
586,300**

**Service Providing jobs peaked in June 2016
2,467,800**

Source: Texas Workforce Commission

Committed to the highest standards of value creation

The Lag Effect

Ratio of Goods Producing to Service Providing jobs is...

1990 to Present – 4 to 1

Source: Texas Workforce Commission

2006 to Present – 4.21 to 1

August 2016 – 4.62 to 1

Current number of Goods Producing Jobs, August 2016 – 532,200

Current number of Service Providing Jobs, August 2016 – 2,461,200

Service Providing Job losses to maintain historical ratios

Using 1990 to Present Ratio – 332,400

Using 2006 to Present Ratio – 215,316

Committed to the highest standards of value creation

Another Bugaboo...

Construction Jobs

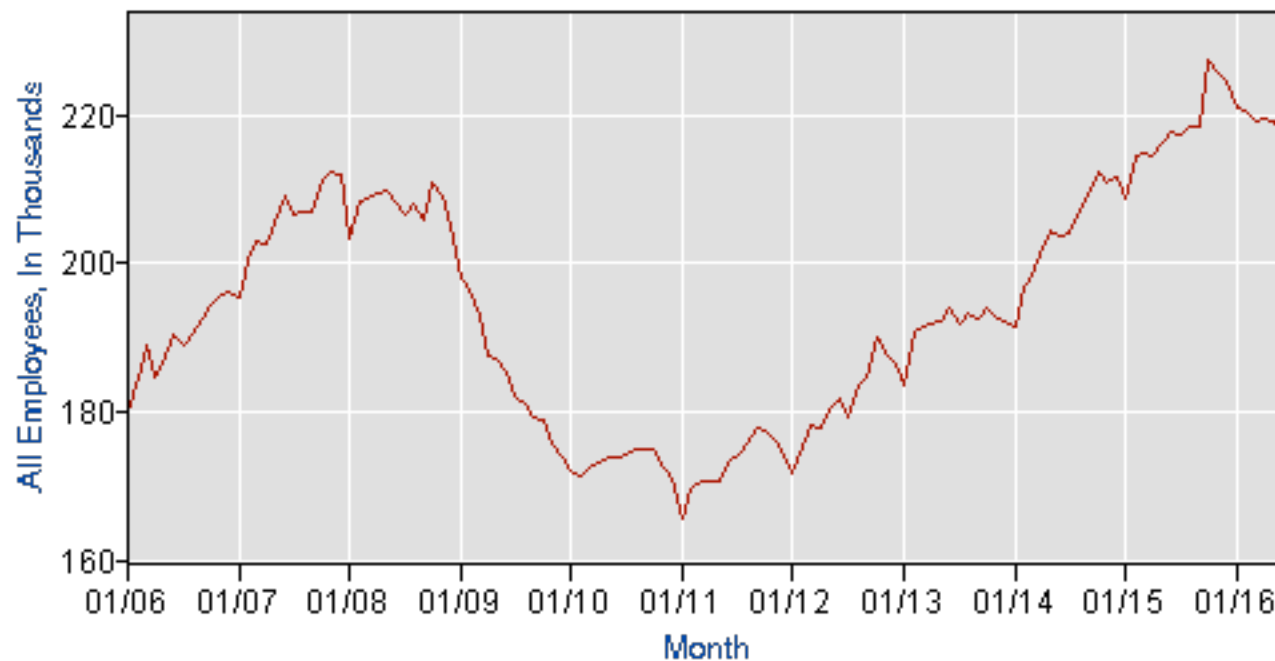
Construction Jobs are Counted as...

Goods Producing

Source: Texas Workforce Commission

Committed to the highest standards of value creation

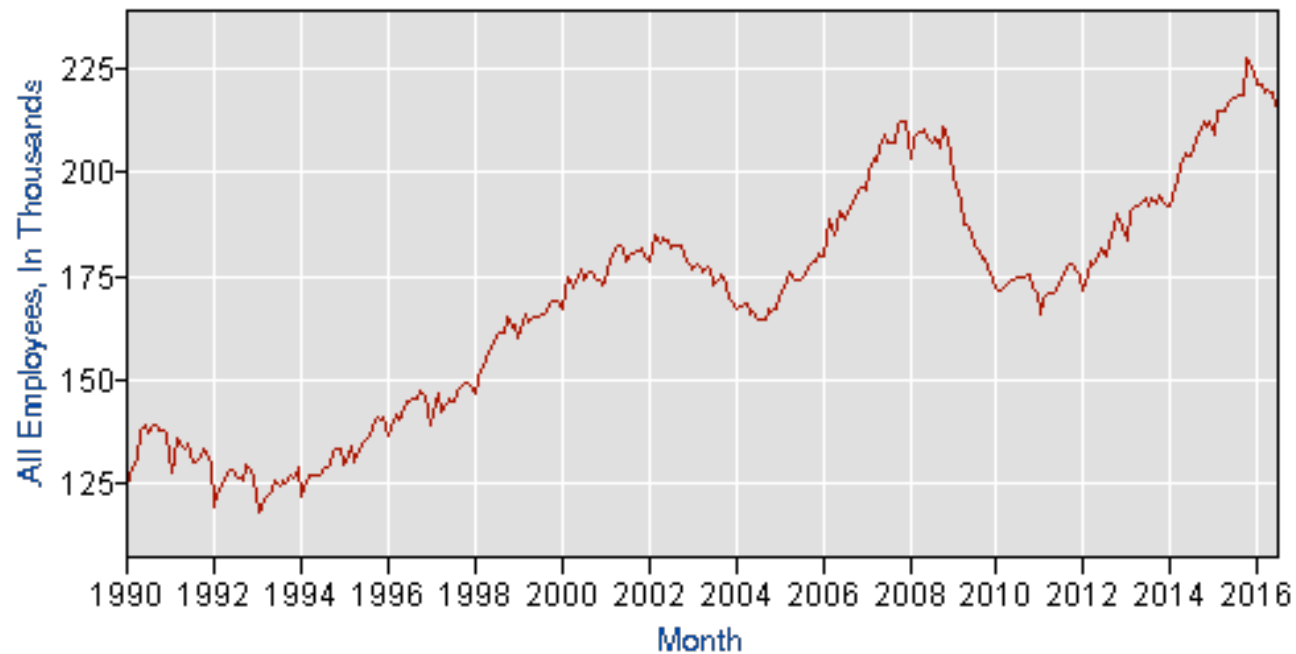
Construction Jobs – 2006 to Present



Source: BLS – Houston SMSA

Committed to the highest standards of value creation

Construction Jobs – 1990 to Present



Source: BLS – Houston SMSA

Committed to the highest standards of value creation

Another Bugaboo - Construction Jobs

January of 1990 – 124,000 employed in construction

January of 2006 -180,000 employed in construction

July 2016 - 217,000 employed in construction

Source: BLS – Houston MSA

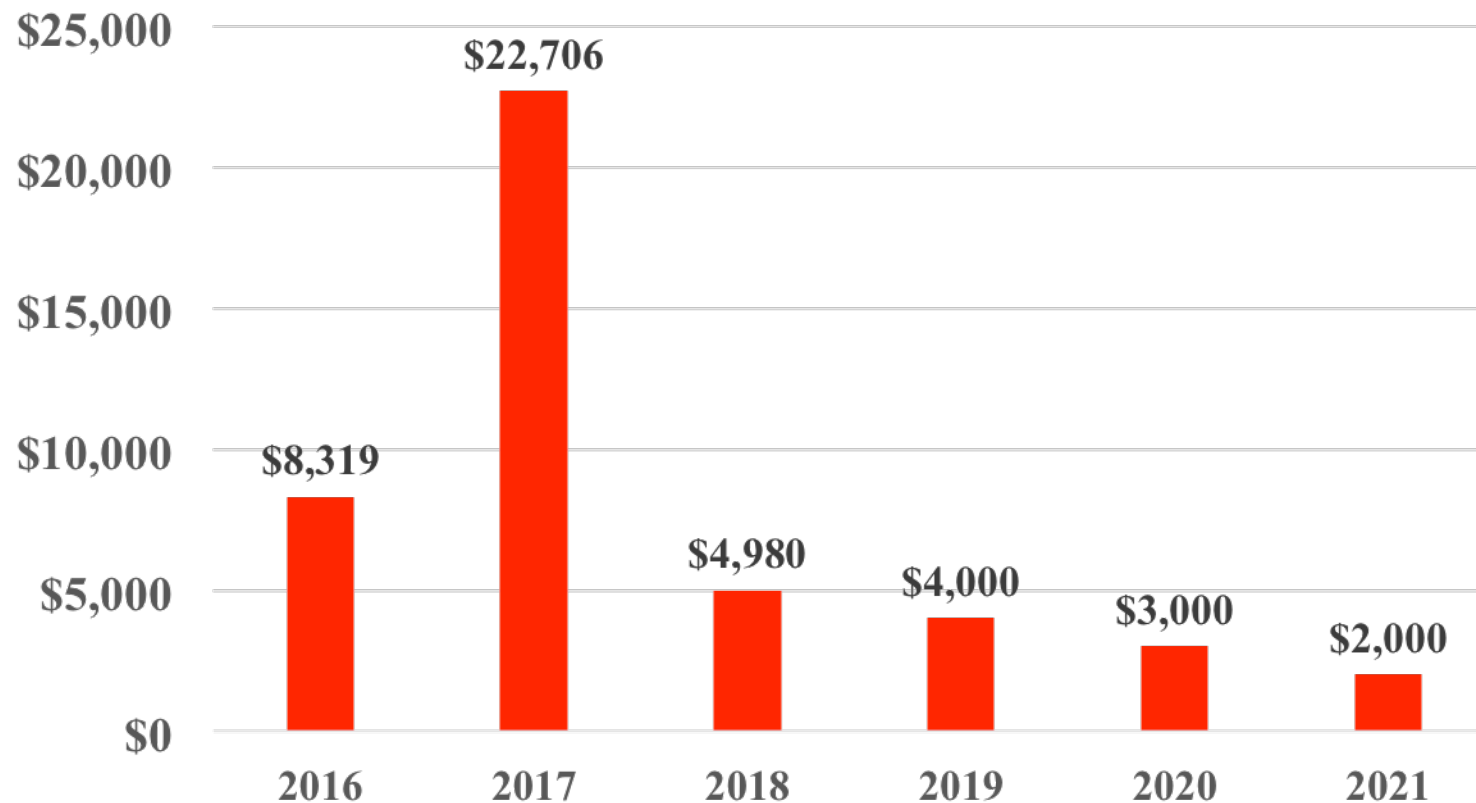
If we lose 40,000 Construction jobs to maintain the historical ratio we will lose another 160,000+/- Service Providing jobs.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Estimated Petrochem Construction Completions



Source: Dr. Bill Gilmer, Director for the Institute of Regional Forecasting, The University of Houston.

Committed to the highest standards of value creation

New Asset Job Creation

Although not perfectly accurate, economic impact consulting firm IMPLAN produces data that projects job growth in certain industries. Their view of the petrochemical industry suggests that for every one petrochemical construction job we lose we gain two direct, indirect and induced jobs in the local economy.

Source: IMPLAN

So when we lose 40,000 construction jobs we could gain 80,000 other jobs.
(It's imperfect data but let's be a little optimistic.)

If we lose 40,000 Construction jobs to maintain the historical ratio we will lose another 160,000+/- Service Providing jobs. A total of 200,000 losses, but then we gain 80,000 new jobs, putting us at a **net loss of 120,000 jobs**

The Total Lag Effect

Houston could lose as many as 400,000 jobs.

Service Providing Job losses to maintain historical ratios

Using 1990 to Present Ratio – 332,400

Using 2006 to Present Ratio – 215,316

Potential job losses from construction project wind downs

120,000

Potential combined job losses – 335,316 to 452,000

Committed to the highest standards of value creation

The Bottom Line

“Losing 400,000 jobs would be an almost identical percentage of losses as was experienced during the 1980’s oil and gas bust.”

Dr. Bill Gilmer, Director for the Institute of Regional Forecasting, The University of Houston.

Committed to the highest standards of value creation

**If oil & gas capital expenditures don't turn
around soon, creating more Goods
Producing jobs, then...**

Houston, we have a problem!

Leyendecker & Associates

Consultants in Executive Search

The Good News

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search



Every Forest Fire Creates Fertile Ground For The Next Forest.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search



*When the forest burns down, there is more fertile soil.
More fertile soil means lower business input costs, lower rents, and
lower labor costs - all good for new business creation.
And when the forest burns down, there are fewer trees competing for
sunlight, meaning less competition for new businesses*

Committed to the highest standards of value creation

Houston is Highly Entrepreneurial

According to the Kauffman Foundation's 2016 Report on Entrepreneurship, Houston ranks #7 out of 40 major cities in start up/entrepreneurial activity. This moved Houston up from #8 in the country in 2015 and #9 in 2014.

Austin ranks #1 in “start up density” with 105.2 new companies started for every 1,000 companies in the market while Houston comes in #7 with a score of 94.2.

This is, however, a 2-point decline from our score of 96 in 2015.

Source: *Houston Business Journal*

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

The Next Boom

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Japanese company Daikin is building a 4.1 million square foot operational plant to build HVAC appliances on Highway 290, northwest of the Grand Parkway. It will permanently employ over 5,000 people.

Source: Realty News



If Houston can build air conditioners and heaters,
what other appliances can we build?

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Why A Next Boom

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Panama Canal expansion



Opened in June of 2016, this increases Houston's competitive position for trade.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Excellent logistical center



We are the easiest port to serve the center of the country.

Committed to the highest standards of value creation

Vibrant labor pool

Texas has the third lowest median age in the country.

Houston median age – 32.3

Texas – 34.3

California - 36

Michigan – 39.6

New York – 38.2

Florida – 41.6

Source: Sperling's Best Places

Young workers provide a vibrant labor pool.

Committed to the highest standards of value creation

Housing costs 46.7% below average

The C2ERCost of Living Index for the first quarter of '16 shows Houston has the fifth lowest cost of living among the nation's 20 most populous metropolitan areas.

Houston's housing costs are 46.7% below the average for the 20 most populous U.S. metros, and its overall costs are 22.1% below the average for this group. If one excludes the three most expensive housing markets — New York, San Francisco, San Diego — which tend to skew the average, Houston's housing costs are still 35.3% below the major metro average.

Source: GHP – C2ER

More affordability draws business and individual relocations.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Best skilled labor pool in the country

In September 2104 *USA Today* published an article about “The New Blue Collar”, describing the coming growth of middle-skilled jobs, essentially higher trained and capable labor needed primarily in the production-oriented industries. According to the article these middle-skilled jobs will make up 37% of new job creations over the next few years, compared to 27% for high and 26% for low skilled.

Top of USA Today’s list of expected middle skilled job creation?

Houston, TX

Committed to the highest standards of value creation

High number of engineers per capita

A *Forbes* published article in July 2013 ranked Houston as 2nd in the nation in engineers per capita. Per 1,000 residents

Silicon Valley MSA – 45 per capita (40,400 total engineers)

Houston MSA – 22.4 per capita (59,070 total engineers)

San Diego MSA – 20.2 per capita (25,490 total engineers)

Boston MSA – 17.5 per capita (43,340 total engineers)

Denver MSA – 17.0 per capita (20,910 total engineers)

MSA: Metropolitan Statistical Area

Engineers create things that create jobs.

Committed to the highest standards of value creation

Lots of immigrants, lots of entrepreneurs

A March 2015 study by the Migration Policy Institute reports that 1.4 million of Houston's 6.3 million residents were foreign born (23%) and named Houston as the country's Most Diverse Metropolitan Area.

According to a Small Business Administration-commissioned report in 2012 by Robert W. Fairlie, an economics professor at the University of California, Santa Cruz, the business ownership rate is higher (10.5%) for immigrants than the for native-born (9.3%).

Expect lots of entrepreneurial activity from our diverse population.

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Texas' business friendly nature

Texas ranks up at the top of best states to do business in.

#1 in the country according to *Chief Executive Magazine*

#2 in the country according to CNBC

#6 in the country according to *Forbes*

A business friendly environment encourages entrepreneurial activity and attracts company relocations.

Committed to the highest standards of value creation

Conclusion

No one is taking the word “cycle” out of the dictionary any time soon.

This too will pass.

Houston has recently been through a gold rush period, akin to the dot.com boom of the 1990s and the housing boom of the 2000s.

We have to work our way through the process of rebalancing our economy.

Our strengths as an economic region are great.
In addition to energy, our future could be, should be
as a manufacturing power center in the U.S.
...and why not the world?

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Reference Sources

Greater Houston Partnership – Economy at a Glance

https://www.houston.org/pdf/research/quickview/Economy_at_a_Glance.pdf

Texas Comptroller – Sales Tax Receipts

<http://comptroller.texas.gov/taxinfo/allocsum/citycnty.html>

Haynes & Boone Bankruptcy Report

<http://www.haynesboone.com/news-and-events/news/publications/2016/01/31/energy-bankruptcy-monitors-and-surveys>

Oil & Gas Journal – Capital Expenditures

<http://www.ogj.com/articles/print/volume-114/issue-3/special-report-capital-spending-outlook/capital-expenditures-to-be-squeezed-further-in-2016.html>

Port Authority of Houston

<http://www.portofhouston.com/inside-the-port-authority/communications/business-news/port-commission-approves-2016-budget/>

Collier's Report on Houston Health Care

http://www.colliers.com/sitecore/shell/-/media/files/marketresearch/unitedstates/markets/texas/houston/2016/midyear_2016_houston_healthcare_marketresearchreport

JSC Economic Impact

https://www.nasa.gov/sites/default/files/atoms/files/jsc_economic_impact_report_fy14_0.pdf

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Reference Sources

Texas Workforce Commission – Houston MSA

http://www.bls.gov/regions/southwest/tx_houston_msa.htm

Bureau of Labor Statistics – Southwest Region – Construction Jobs

http://www.bls.gov/regions/southwest/tx_houston_msa.htm

Greater Houston Partnership – Southwest Regional Report

http://www.bls.gov/regions/southwest/tx_houston_msa.htm

2016 Kauffman Report – Houston Business Journal

<http://www.bizjournals.com/houston/news/2016/08/25/houston-sees-small-improvement-in-startup-activity.html>

Daikon Plant News – Realty News

<http://realtynewsreport.com/2016/03/08/daikin-adds-1000-employees-to-hiring-plan-at-new-4-million-sf-factory-in-houston/>

Sperling's Best Places

<http://www.bestplaces.net/people/city/texas/houston>

Houston Affordability

https://www.houston.org/newgen/08_Market_Research_Data/08B%20W001%20C2ER%20Cost%20of%20Living%20Index%20Comparisons.pdf

USA Today – Middle Skilled jobs

<http://www.usatoday.com/story/news/nation/2014/09/30/job-economy-middle-skill-growth-wage-blue-collar/14797413/>

Committed to the highest standards of value creation

Leyendecker & Associates

Consultants in Executive Search

Reference Sources

Forbes – Engineers Per Capita

<http://www.forbes.com/sites/joelkotkin/2013/07/31/americas-engineering-centers/#3fd28ad81e2f>

Houston Migration/Diversity

<https://www.google.com/#q=houston+immigrant+population>

New York Times – Entrepreneurial Immigrants

<http://economix.blogs.nytimes.com/2013/07/01/immigration-and-entrepreneurship/>

Dallas Morning News – Texas #1 CEO Magazine

<http://bizbeatblog.dallasnews.com/2016/05/ceos-in-magazine-survey-again-pick-texas-as-best-state-for-business.html/>

Committed to the highest standards of value creation