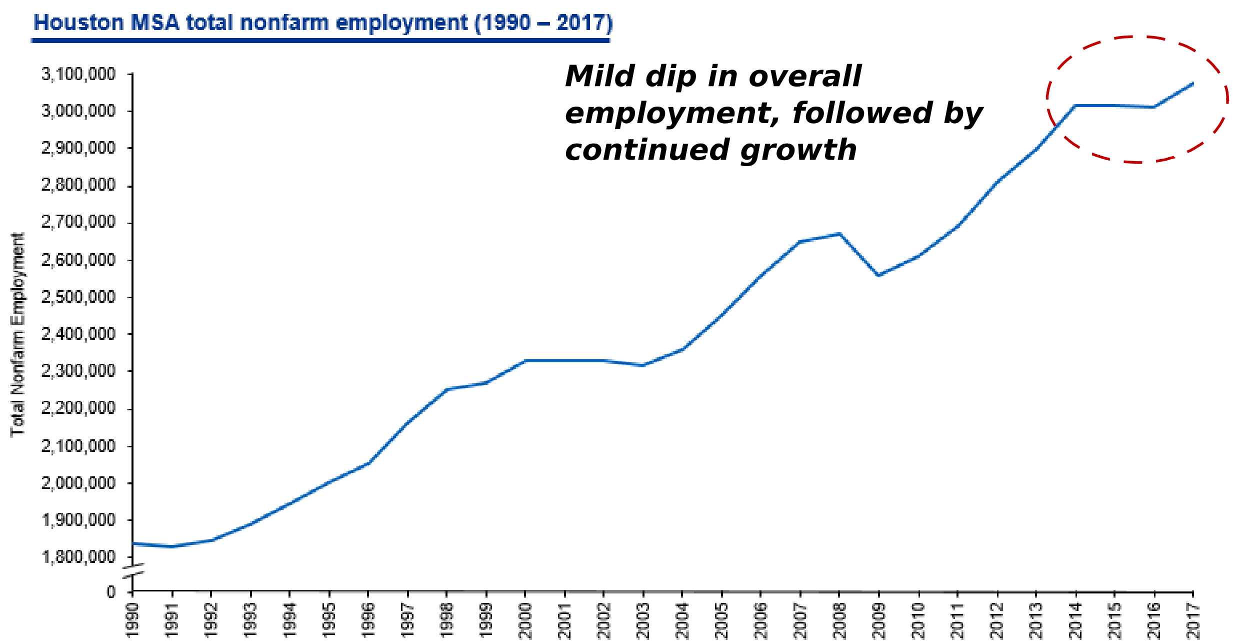
CENTER FOR HOUSTON'S FUTURE

Houston's Call to Arms

Houston MSA job growth appears to have suffered only a minor dip

Recent Houston MSA job reports show surprisingly little job loss given the post 2014 oil and gas industry downturn. On the surface, the reports seem to show little more than a short and mild down dip in jobs, with an upcoming return to normal.

Figure 1: Houston MSA Nonfarm employment



Source: Texas Workforce Commission

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While Houston's overall job growth may continue on an upward trajectory, there has been a significant loss of high value, high multiplier jobs in Houston's economy. Job losses in oil and gas and energy-related sectors (e.g., equipment manufacturing) are significant. Nonetheless, because jobs in service-providing sectors (e.g., restaurants and hotels) have increased, it appears that job losses have been offset by gains.

Figure 2: Houston MSA energy sector job losses and top non-energy sector gains

Sector	Jobs Lost Dec '14 – Dec '17	%	Sector	Jobs Gained Dec '14 – Dec '17	%
Exploration & Production	-18,700	-31.1	Hotels, Restaurants, Bars	+27,600	10.7
Oil Field Services	-16,000	-33.8	Health Care	+19,300	6.3
Fabricated Metal Products	-18,000	-27.8	Retail Trade	+17,200	5.6
Oilfield Equip Mfg.	-16,400	-36.7	Public Education (ISDs)	+13,900	7.0
Engineering	-9,000	-11.8	Financial Activities	+9,800	6.5
Total Losses	**-78,100**		**Total Gains**	**+87,800**	

Source: Texas Workforce Commission

However, this masks an underlying issue of job value

Looking at the job market from the point of view of overall employment is deceiving. It masks an underlying issue relevant to Houston MSA's distinguished economic growth for the decades leading up to the 2014 downturn: **job value.** When comparing job multipliers across the selected sectors, the issue of job value becomes evident. Houston has lost in that category disproportionately. High multiplier jobs are those that drive the flow of capital in the economy – for example creating or directing new investment projects – which in turn creates new construction and additional service-industry jobs.

Figure 3: Multiplier effect for selected sectors

Sector	Multiplier effect	Sector	Multiplier effect
Exploration & Production	3.72	Hotels, Restaurants, Bars	1.25
Oil Field Services	2.84	Health Care	1.58
Fabricated Metal Products	2.29	Retail Trade	1.44
Oilfield Equip Mfg.	3.45	Public Education (ISDs)	1.26
Engineering	2.17	Financial Activities	2.76
Average	**2.90**	**Average**	**1.66**

Source: IMPLAN

Typically high multiplier jobs provide higher compensation as well, which increases local spending and business activity, therefore supporting additional jobs in sectors such as retail and restaurants, and even demand for more doctors and lawyers.

Figure 4: Average annual compensation for selected sectors

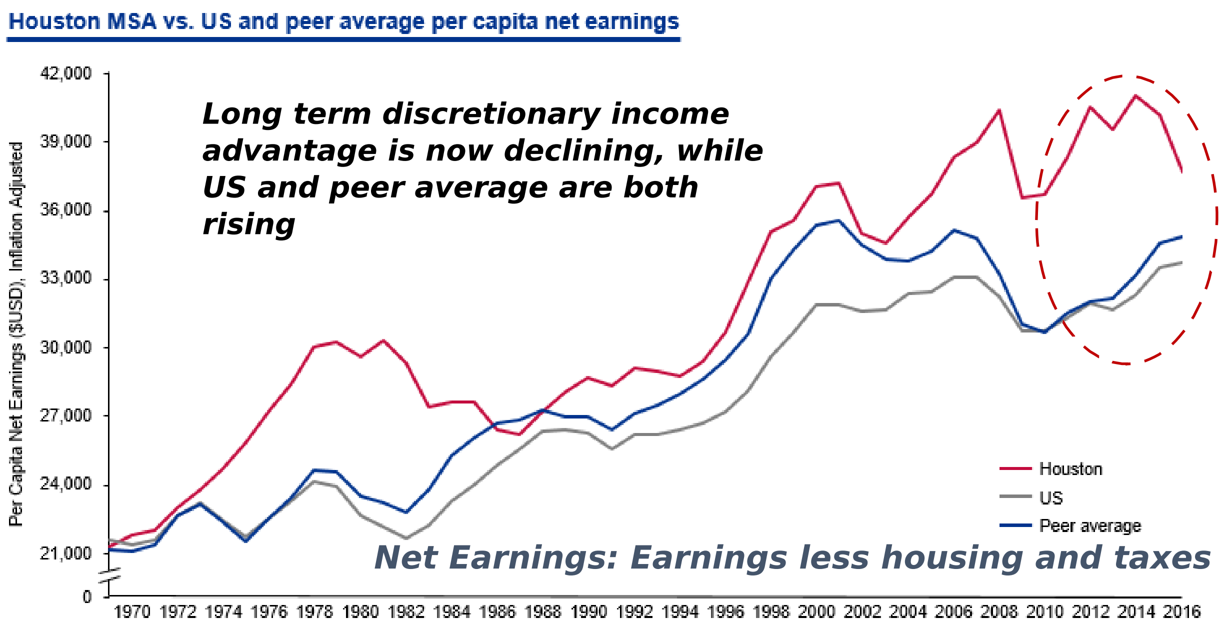
Job Losses	$/Yr	Job Gains	$/Yr
Exploration & Production	185,400	Hotels, Restaurants, Bars	19,900
Oil Field Services	115,900	Health Care	53,800
Fab Metal Products	63,500	Retail Trade	31,500
Oilfield Equip Mfg	118,900	Public Education (ISDs)	45,500
Engineering	103,200	Financial Activities	90,300

Source: Texas Workforce Commission

Houston, a historical outperformer, is now losing ground

As the oil and gas industry grew over several decades prior to 2014, Houston MSA's high multiplier jobs grew alongside it, resulting in an economic growth rate that outpaced the US average and peer cities such as Atlanta and Dallas. Currently, however, the greater Houston economy, measured in terms such as GDP, real wages, and discretionary income per capita is growing far less than many peer cities, and on most measures declining.

Figure 5: Houston MSA vs. US and peer average per capita net earnings



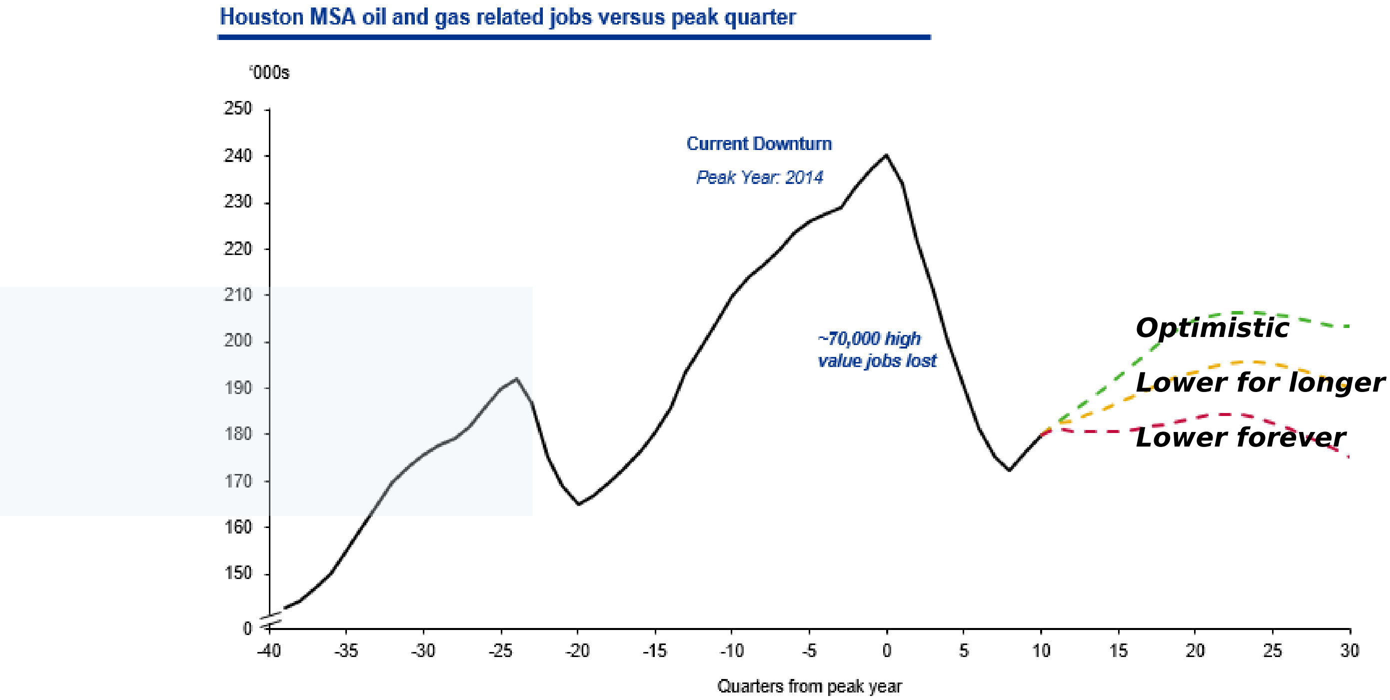
Source: US Bureau of Economic Analysis
Peer group includes: Atlanta, Austin, Chicago, Dallas, Denver, Phoenix

If Houston's economy continues on its current trajectory, the city is headed towards a situation similar to Denver pre its recent technology driven turnaround, or San Francisco pre the high tech boom.

Houston should not rely entirely on an oil and gas industry upcycle to re-establish high value job levels

Turning Houston's job market decline – particularly in the realm of high value jobs – will not be easy. While the oil and gas industry is expected to stay a large and critical part of the energy landscape for many years, the consensus view is increasingly becoming one of 'lower oil price for longer', or even 'lower oil price forever'.

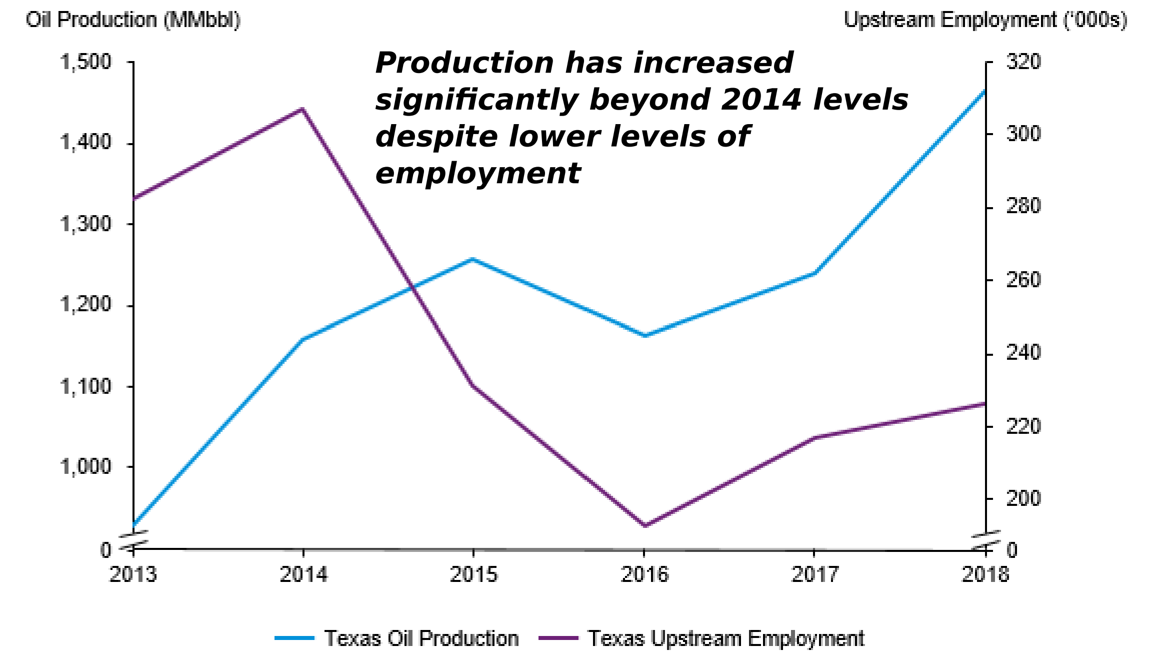
Figure 7: Houston MSA oil and gas related jobs vs. peak year: historical and scenario forecasts



Source: US Bureau of Labor Statistics, Institute for Regional Forecasting

Additionally, oil industry jobs are continuing to show a trend of increasing productivity, meaning less jobs are required to perform the same level of activity.

Figure 6: Texas oil production vs. Upstream oil and gas employment*



Source: Texas Alliance of Energy Producers, Federal Reserve Bank of Dallas
**Note: 2018 Oil Production forecasted base on January and February 2018 monthly rate*

As a result, although oil prices and oil industry growth are stabilizing, Houston cannot count on the oil and gas industry to cycle upward to the extent of vintage early 1980’s or 2014 boom.

In order to bring back the extent of high multiplier jobs lost post 2014, other avenues will need to be pursued.

Additional events reinforce the need for a targeted, leadership-backed effort and integrated plan

Further recent events in greater Houston, including Hurricane Harvey and losing out as a potential finalist for Amazon’s second headquarters, have led key leaders such as Sylvester Turner and Bob Harvey to issue a ‘call to arms’ regarding change in Houston.

As disappointing and heartbreaking as [not making the Amazon cut] is, **it serves as a wakeup call** that we must move at a much quicker pace

-Sylvester Turner

Houston did not make Amazon’s short list…we are obviously disappointed and believe this is **a wakeup call for Houston**

-Bob Harvey

While infrastructure improvements are a clear part of the future need, attracting high value industries, companies, and the talent associated with high value jobs is an equal or greater imperative. KPMG's 'Magnet City' case study effort analyzed cities that went through a down period – similar to Houston's current 'call to arms' – and were able to successfully transform and grow, attracting new businesses and residents. The common thread between these cities was an integrated plan tying together business, talent, and infrastructure efforts that worked in tandem to create outperforming economic growth. Such cities include Oklahoma City, that lost out on a major United Airlines maintenance depot due to 'poor quality of life', and San Francisco, that had to rebound after a major earthquake in 1989.

Figure 8: KPMG Magnet City case study examples

Oklahoma City

Call to Arms: United chose not to move a major depot to OKC citing ‘poor quality of life’

Infrastructure enhancement:
- Voter approved revitalization projects (MAPs)
- Repurposed old warehouses for residential space

Business rejuvenation:
- Stabilized existing industry (purchased aero plant for Air Force program; incented shale drillers to stay in OK)
- Collaborated with Brookings on an innovation district driving health, energy, and aerospace

Talent influx:
- Downtown and Innovation District attract talent

San Francisco

Call to Arms: Earthquake in 1989 devastated infrastructure and caused $5b in damage

Infrastructure enhancement:
- Redesigned for the future (e.g., highlighted waterfront, increased residential space)
- Leveraged old industrial sites to expand (e.g., Mission Bay Renewal)

Business rejuvenation:
- Used tax incentives to target hi tech start ups, and ‘surplus’ from nearby Silicon Valley
- Leveraged existing VC focus on tech companies

Talent influx:
- Attracted talent through urban renewal and hi tech job opportunities

Denver

Call to Arms: 1980’s oil glut edged Denver into a recession

Infrastructure enhancement:
- Dedicated task force (Greater Denver Corp) and Metro Vision plan
- Designed suburban business area with urban amenities (Denver Tech Center)

Business rejuvenation:
- Preserved old energy (e.g., shale drillers, new BP HQ)
- Moved into new energy (e.g., Solar Energy Lab repurposed as renewable R&D center)
- Tech Center now focused on energy tech VC and startups

Talent influx:
- Targeted energy & tech talent through accelerator programs
- Nurtured VC growth through tax incentives

Integrated plan tying infrastructure investment to attracting specific businesses and talent

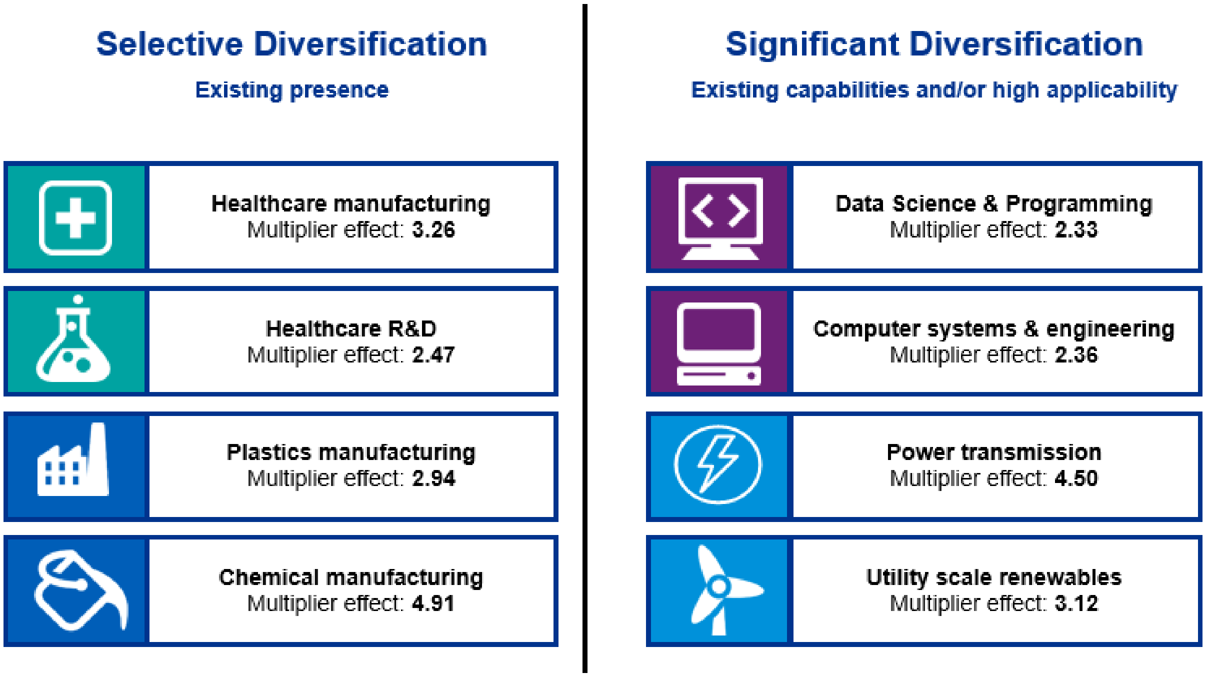
The key to re-establishing an outperforming growth trajectory lies in targeting select high value industries

The key is which industries Houston can benefit from, and how to attract these industries and associated talent. Several initiatives are underway to foster entrepreneurship and innovation in Houston (e.g., Station Houston, The Cannon), which is a good start and will help grow Houston’s venture capitalism presence. However, the timing and level of high multiplier jobs from these efforts will only close a small portion of the gap.

Houston will also need to focus on growing industries with high potential impact that fit well with Houston’s existing companies, assets, and talent skillset. One key area is healthcare, where there is potential to expand Houston’s already significant health care R&D base and grow health care manufacturing. A second key area is chemicals, where there is opportunity to extend basic petrochemicals in specialties and plastics.

Then there are additional sectors that have an existing capability and/or high applicability in Houston, but will require additional effort to grow. The first is utility scale renewables, where skills in the Houston economy in terms of land acquisition and major project management could lend themselves to businesses that develop utility scale solar and wind farm projects, as well as large scale power transmission projects. Lastly, the rise of data science, and its applicability to multiple industries – including the many oil and gas and health enterprises already in Houston – creates the potential to grow both programming and computer engineering fields.

Figure 11: Targeted industries and multipliers



In order to succeed, this effort will require support and commitment from leadership

A call to arms will require the broader support and commitment of the business community to build and diversify Houston’s business base, supplementing the ongoing critical role of the oil and gas industry. Lessons learned by cities who went through a similar call to arms and successfully turned around their economy highlights that concerted plans to tie infrastructure and other investments to talent and business attraction strategies is the path to success. Greater Houston leadership should seize this moment to orchestrate such an integrated plan for Houston.