

ISM-Houston Business Report

April 2019



ISM—Houston, Inc.

Analysis and report by **Ross Harvison, CPSM**
 Chair of the ISM-Houston Business Survey Committee

(Houston, Texas) – According to Houston supply chain executives, manufacturing activity in Houston expanded in April for the 20th consecutive month and overall economic activity expanded for the 33rd month. The near-term forecast continues to point to higher manufacturing and overall economic growth than anticipated earlier in the year.

The April Houston Purchasing Managers Index registered **58.7**, down from its March reading of 64.0. The three underlying indicators that have the strongest direct correlation with current economic activity (sales/new orders, employment, and lead times) showed continued strength. The underlying indicator that has the largest inverse correlation, finished goods inventory, moved further below neutral.

The three-month forecast for the Houston PMI registered 55.9, down 2.6 points from its March reading of 58.5. Continued strong performance of the production and lead times indices offset much of the drop in the sales/new orders index to limit the fall of the forecast index. These indices are all directly correlated with economic activity at all forecast horizons.

On an industry specific basis Oil & Gas, EPC activities, Non-Durable Goods Manufacturing, Mid-Stream Operations, Wholesale trade, Professional Services, and Health Care all reported expansion. From a three-month forecast standpoint, all these sectors are pointing to moderate to strong expansion.

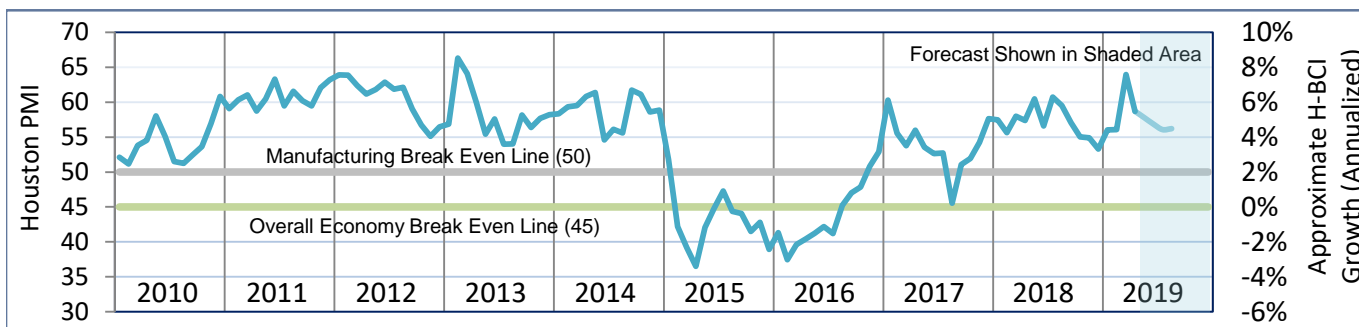
Indices at a Glance

Index	Apr	Mar	Change	Track	Rate	Trend*
Houston PMI - Current	58.7	64.0	-5.3	Expanding	Slower	20
Houston PMI - 3 Month Forecast	55.9	58.5	-2.6	Expanding	Slower	4
Sales/New Orders	57.1	71.3	-14.2	Rising	Slower	4
Production	57.4	59.1	-1.7	Rising	Slower	20
Employment	61.1	64.7	-3.6	Rising	Slower	20
Purchases	50.4	62.6	-12.2	Rising	Slower	2
Prices Paid	54.6	60.0	-5.4	Rising	Slower	3
Lead Times	58.4	57.3	1.1	Rising	Faster	29
Purchased Inventory	47.2	48.6	-1.4	Falling	Faster	6
Finished Goods Inventory	46.0	48.5	-2.5	Falling	Faster	3
Overall Houston Economy				Expanding	Slower	33

* Number of months on current track

Houston PMI Trend

With the Houston PMI registering 58.7 in April, manufacturing activity in Houston has expanded for nearly two years and overall economic activity has grown for almost three years. Readings over 50 generally indicate manufacturing expansion; readings below 50 show contraction. A PMI above 45 generally correlates with expansion of the Houston-The Woodlands-Sugar Land Business Cycle Index (H-BCI).



Commodities Reported to have Notable Prices Changes or to be in Short Supply

Up in Price: Crude; gasoline, distillate (diesel/jet), alkylate, reformate; aromatics (benzene/toluene/xylene), cyclohexane, butadiene; copper wire and cable; pumps and compressors, electrical equipment, copper based equipment and materials, exchangers, fabricated structural steel; ocean freight

Down in Price: Natural gas, propane, butane, ethylene, methanol; carbon steel pipe

In Short Supply: Skilled craft labor, chemical plant operators, CDL drivers; lidocaine, prilocaine

Sector Summaries

Oil and Gas Exploration, and Key Support Services:

- We saw a slight uptick in hiring this month
- *This sector reported continued growth this month with the sales, production, and lead times indices providing strong performance; the employment index moderated to neutral; purchases fell*

Engineering and Construction:

- Volatility is making forecasting difficult for projects in all segments
- *Respondents in this sector reported strong performance again this month; the new orders, employment, purchases, prices paid, and lead times indices were all reported as rising at a fast pace*

Manufacturing - Durable Goods:

- Manufacturing for oil and gas has hit a bubble; we are seeing a drop in new orders for the first time in several years
- *This sector reported contraction this month with the sales, production, employment, and purchases indices all moving below neutral; both inventory indices were also reported well below neutral*

Manufacturing - Non-Durable Goods:

- Ethylene remains long with recent plant startups and is expected to get worse with additional plants coming on line near term
- Intercontinental Terminals (ITC) is expected to reopen soon
- *This sector showed significant strength; the sales, production, employment, purchases, prices paid, and lead times indices all reported above neutral; inventories fell*

Mid-Stream Operations:

- *This sector reported improvement again this month; sales, production, purchases, prices paid, and lead times rose at a good pace; employment was flat*

Wholesale Trade:

- *Respondents in this area reported mixed performance this month; the employment index showed strong growth while all other indicators were near neutral*

Professional Services:

- Hiring in the shale basins has leveled off as lack of pipeline infrastructure capacity has caused oil and gas drilling to level off
- Aquisitions in the O&G sector are expected to result in the release over the near to medium time frame of a significant number of highly qualified folks from all disciplines
- *Respondents in this area indicated further softening this month; employment is expanding at a slower pace and all other indicators are near neutral*

Health Care:

- *This sector improved modestly after showing slowing growth last month; employment and prices paid rose while all other indicators were flat*

Trend of Underlying Indicators

The Houston PMI is based on diffusion indices for eight underlying indicators. The net value of each indicator is simply the percentage of respondents who cite a positive shift from the previous month minus the percentage who cite a negative shift. The diffusion index is calculated based on the percent of respondents reporting higher results plus one-half of those responding the same with a seasonal adjustment based on an X13 ARIMA forecast. Seasonally adjusted values above 50 for the Sales/New Orders, Production, Employment, Prices Paid, and Lead Times indicators generally point towards expansion at all forecast horizons and values below 50 signal contraction. Note that the Prices Paid Index may not follow this trend late in an economic expansion. The Inventory measures have an inverse correlation at most forecast horizons, meaning that values below 50 point to expansion and values above point to contraction. The Purchases index is inversely correlated with economic activity at the two, three, and four month forecast horizons.

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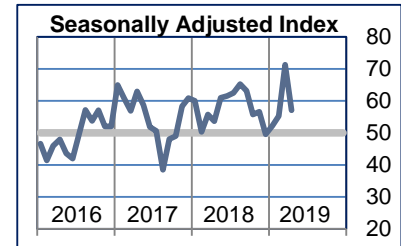
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Sales/New Orders Index

The sales/new orders index fell significantly in April, but continued to indicate strong expansion. EPC firms, oil & gas, non-durable goods manufacturing, and mid-stream operations reported sustained sales growth.

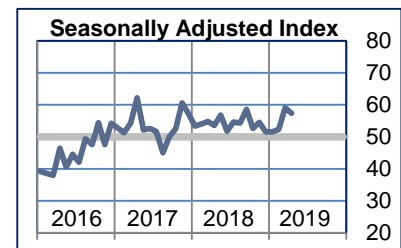
	Higher	Same	Lower	Net	Index
Nov/18	11%	83%	6%	5%	56.6
Dec/18	9%	77%	14%	-5%	49.5
Jan/19	11%	81%	8%	3%	52.2
Feb/19	20%	75%	5%	15%	55.2
Mar/19	42%	57%	1%	41%	71.3
Apr/19	22%	75%	3%	19%	57.1



Production Index

This index showed rising production at a marginally slower pace. Oil & gas, mid-stream operations, and non-durable goods manufacturing reported growth at a faster pace. Durable goods reported significant slowing.

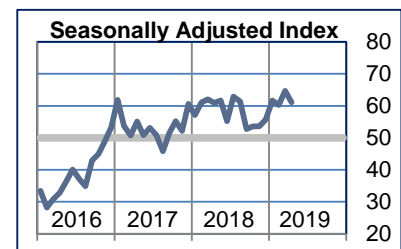
	Higher	Same	Lower	Net	Index
Nov/18	6%	93%	1%	5%	54.5
Dec/18	5%	92%	3%	2%	51.6
Jan/19	3%	96%	1%	2%	51.5
Feb/19	8%	90%	2%	6%	52.3
Mar/19	21%	77%	2%	19%	59.1
Apr/19	19%	78%	3%	16%	57.4



Employment Index

The employment index is pointing to continued strong growth. EPC firms, non-durable goods manufacturing, professional services, and healthcare reported continued gains. Durable goods manufacturing reported job losses.

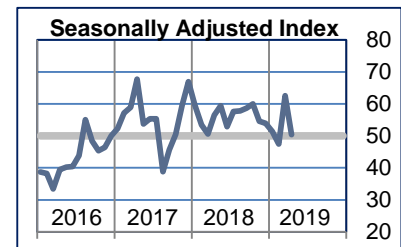
	Higher	Same	Lower	Net	Index
Nov/18	16%	75%	9%	7%	53.6
Dec/18	20%	74%	6%	14%	55.7
Jan/19	35%	50%	15%	20%	61.7
Feb/19	24%	70%	6%	18%	60.2
Mar/19	27%	72%	1%	26%	64.7
Apr/19	32%	61%	7%	25%	61.1



Purchases Index

After significant gains last month, the purchases index came in near neutral. Oil & gas and durable goods manufacturing showed significantly slowing while non-durable goods and healthcare indicated higher purchases.

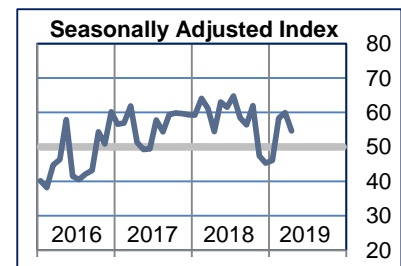
	Higher	Same	Lower	Net	Index
Nov/18	10%	87%	3%	7%	54.6
Dec/18	12%	82%	6%	6%	54.0
Jan/19	16%	72%	12%	4%	51.3
Feb/19	6%	84%	10%	-4%	47.5
Mar/19	28%	70%	2%	26%	62.6
Apr/19	13%	78%	9%	4%	50.4



Prices Paid Index

The prices paid index showed rising prices at a slower pace. Non-durable goods manufacturing, EPC firms, and mid-stream operations reported significant price growth while all other sectors reported near neutral.

	Higher	Same	Lower	Net	Index
Nov/18	8%	81%	11%	-3%	47.4
Dec/18	10%	74%	16%	-6%	45.3
Jan/19	12%	68%	20%	-8%	46.1
Feb/19	19%	78%	3%	16%	58.4
Mar/19	22%	76%	2%	20%	60.0
Apr/19	13%	86%	1%	12%	54.6



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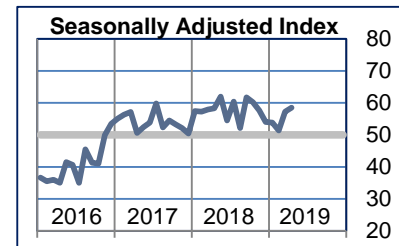


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Lead Times Index

The lead times index rose marginally after a significant gain last month. EPC firms joined manufacturing, oil & gas, and mid-stream operations reporting rising lead times. All other sectors remain near neutral.

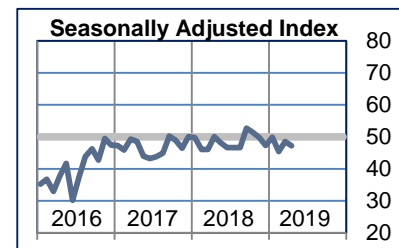
	Higher	Same	Lower	Net	Index
Nov/18	17%	82%	1%	16%	57.7
Dec/18	11%	85%	4%	7%	54.0
Jan/19	10%	85%	5%	5%	53.9
Feb/19	9%	88%	3%	6%	51.4
Mar/19	15%	84%	1%	14%	57.3
Apr/19	19%	80%	1%	18%	58.4



Purchased Inventory Index

Respondents continue to report purchased goods inventories as falling at a modest pace. Durable goods manufacturing and EPC firms reported a significant number of inventory reductions while all other sectors came in near neutral.

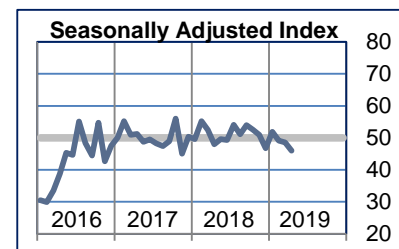
	Higher	Same	Lower	Net	Index
Nov/18	5%	90%	5%	0%	49.7
Dec/18	1%	89%	10%	-9%	47.3
Jan/19	10%	87%	3%	7%	49.9
Feb/19	4%	88%	8%	-4%	45.4
Mar/19	2%	95%	3%	-1%	48.6
Apr/19	1%	93%	6%	-5%	47.2



Finished Goods Inventory Index

The finished goods inventory index fell at a faster pace this month. A large number of manufacturing respondents reported this index as lower. All other sectors reported near neutral.

	Higher	Same	Lower	Net	Index
Nov/18	5%	93%	2%	3%	51.0
Dec/18	1%	94%	5%	-4%	46.8
Jan/19	10%	89%	1%	9%	51.9
Feb/19	4%	92%	4%	0%	49.2
Mar/19	1%	94%	5%	-4%	48.5
Apr/19	1%	91%	8%	-7%	46.0



Comments on Houston PMI Calculation Methods

The Houston PMI is calculated by applying optimal regression factors to each of the eight underlying indicators noted above. These regression factors are determined using standard regression techniques comparing these underlying indicators to the Houston-The Woodlands-Sugar Land Business Cycle Index (Houston BCI), which is reported on a monthly basis by the Federal Reserve Bank of Dallas. ISM-Houston periodically reviews the capability of its correlations and adjusts the regression factors when appropriate. The most recent revision occurred as a result of a review undertaken during the third quarter of 2018, which determined that changes in the Houston economy over the last decade have shifted the intercept of the correlation, causing a neutral Houston PMI to no longer align with a neutral Houston BCI. A Houston PMI of 45 points now equates to a neutral Houston BCI. A similar offset between the National PMI and the National economy has existed for some time.

The new regression factors have been utilized for this report. Additionally, the Houston PMI reported from the beginning of 2014 to present has been restated using the revised regression factors.

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