

ISM-Houston Business Report

December 2018



ISM—Houston, Inc.

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

(Houston, Texas) – According to Houston supply chain executives, manufacturing activity in Houston expanded in December for the 15th consecutive month and overall economic activity expanded for the 29th month. The near-term forecast points to continued overall economic growth. Manufacturing growth may slow during the coming quarter.

The December Houston Purchasing Managers Index registered **53.3**, down from 54.9 last month. The performance of the employment and lead times indices, two of the three underlying indicators that have the strongest positive correlation with current economic activity, showed continued strength. The other indicator with a very strong positive correlation to economic activity, the sales/new orders index, fell below neutral for the first time in 13 months. The prices paid index fell again during the month indicating falling prices for the second month in a row.

The three-month forecast for the Houston PMI registered **49.8**, down 3.3 points from its November reading of 53.1. Weakening sales/new orders, production, and lead times, which are all directly correlated with economic activity at all forecast horizons, were the primary drivers for the fall in the forecast index.

On an industry specific basis Health Care, Oil and Gas, Construction, Manufacturing, and Wholesale Trade reported moderate to strong levels of expansion. Professional Services reported significant contraction. From a three-month forecast standpoint, Health Care and Construction should show continued strength. Manufacturing and Wholesale Trade are expected to weaken.

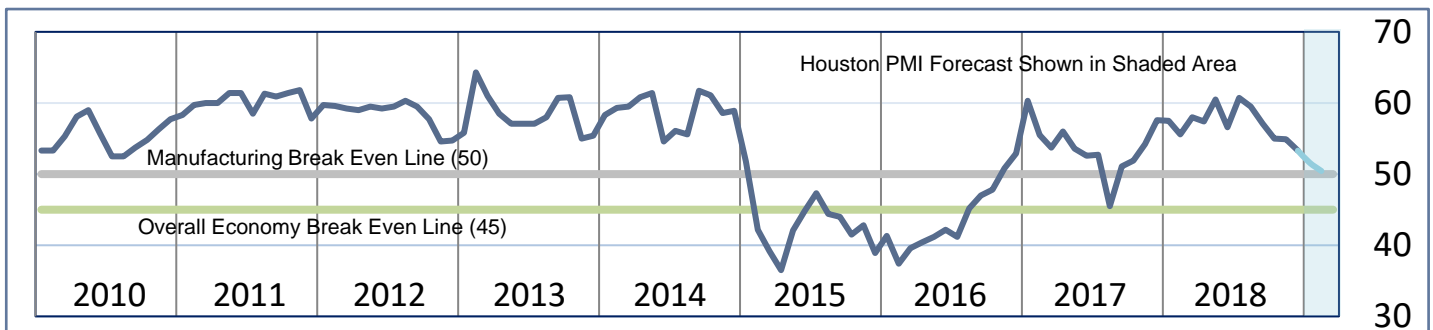
Indices at a Glance

Index	Dec	Nov	Change	Track	Rate	Trend*
Houston PMI - Current	53.3	54.9	-1.6	Expanding	Slower	15
Houston PMI - 3 Month Forecast	49.8	53.1	-3.3	Contracting	Fr. Expanding	1
Sales/New Orders	49.5	56.6	-7.1	Falling	Fr. Rising	1
Production	51.6	54.5	-2.9	Rising	Slower	16
Employment	55.7	53.6	2.1	Rising	Faster	16
Purchases	54.0	54.6	-0.6	Rising	Slower	15
Prices Paid	45.3	47.4	-2.1	Falling	Faster	2
Lead Times	54.0	57.7	-3.7	Rising	Slower	25
Purchased Inventory	47.3	49.7	-2.4	Falling	Faster	2
Finished Goods Inventory	46.8	51.0	-4.2	Falling	Fr. Rising	1
Overall Houston Economy				Expanding	Slower	29

* Number of months on current track

Houston PMI Trend

Manufacturing expansion, including supporting services, continued for the 15th consecutive month in December with the Houston PMI registering 53.3, a decrease of 1.6 points from November. This growth was led by strong performance in the employment, purchases, and lead times indices. The sales/new orders index fell significantly. 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.



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

Up in Price: Labor; pumps, compressors, electrical equipment, copper based products; pediatric vaccines

Down in Price: Carbon steel pipe, alloy pipe, fab structural steel; crude oil, motor fuels, ethane, propane, butanes, and other hydrocarbon related products

In Short Supply: Craft labor and similar trades; carbon and stainless gauge and plate products

Sector Summaries

Oil and Gas Exploration, and Key Support Services:

- This sector reported improvement this month with rising production, purchases, prices paid, and lead times

Engineering and Construction:

- Generally flat, subject to market volatility and concern

- Respondents in this sector reported growth rising modestly from neutral last month; the employment and prices paid indices pointed to expansion; purchases and inventories fell

Manufacturing - Durable Goods:

- Typical activity for December; holidays hindered deliveries and production

- This sector moved to indicating potential contraction this month; sales, production, and purchases fell; lead times increased; inventories also fell

Manufacturing - Non-Durable Goods:

- Global macro economic uncertainty starting to be discussed

- This sector continued to report solid growth this month; the employment and purchases indices pointed to growth; sales, production and inventories were flat; prices paid fell

Mid-Stream Operations:

- Respondents in this area reported all indices as flat with the previous month

Wholesale Trade:

- Respondents in this area reported modest improvement this month; employment was up; prices paid were down

Professional Services:

- The labor market for energy sector is very uncertain; with the price of oil now below \$50 companies are slowing their spend on goods, services and staffing

- Hiring of both direct and contingent workers slowed in December as oil prices dipped below \$50; O&G companies are taking a wait and see approach on hiring and capital investment as we enter 2019

- The first quarter of 2019 will be a good barometer of the year; most energy companies do want to make investments in production and exploration; we need the price of oil stay above \$55 before significant investments will occur

- Overall, respondents in this area reported significant weakening; the sales/new orders and employment indices fell significantly; all other indices were near neutral

Health Care:

- Most items that have been in short supply now have substitutes to carry us through

- This sector continues to report strong growth; the employment and purchases indices strengthened significantly; other indicators came in near neutral

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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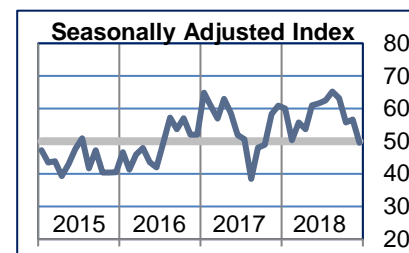
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Sales/New Orders Index

The sales/new orders index moved to a falling track this month. Only oil and gas reported this index as improving. Durable goods manufacturing and professional services reported this index as falling.

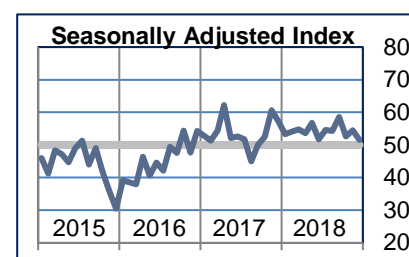
	Higher	Same	Lower	Net	Index
Jul/18	28%	71%	1%	27%	62.5
Aug/18	28%	71%	1%	27%	65.2
Sep/18	32%	61%	7%	25%	63.1
Oct/18	19%	69%	12%	7%	55.8
Nov/18	11%	83%	6%	5%	56.6
Dec/18	9%	77%	14%	-5%	49.5



Production Index

The production index also fell, but remained above neutral. Oil and gas reported strength while durable goods manufacturing indicated significant weakening. All other sectors reported near neutral.

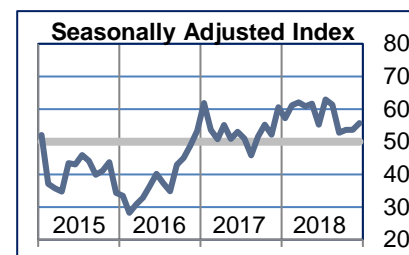
	Higher	Same	Lower	Net	Index
Jul/18	11%	88%	1%	10%	54.6
Aug/18	11%	87%	2%	9%	54.3
Sep/18	18%	81%	1%	17%	58.6
Oct/18	12%	83%	5%	7%	52.6
Nov/18	6%	93%	1%	5%	54.5
Dec/18	5%	92%	3%	2%	51.6



Employment Index

The employment index improved modestly with construction, non-durable goods manufacturing, wholesale trade, and health care reporting increased employment. Professional services reported reductions.

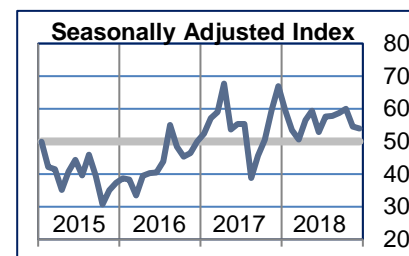
	Higher	Same	Lower	Net	Index
Jul/18	29%	66%	5%	24%	62.9
Aug/18	25%	68%	7%	18%	61.4
Sep/18	14%	78%	8%	6%	52.7
Oct/18	18%	73%	9%	9%	53.6
Nov/18	16%	75%	9%	7%	53.6
Dec/18	20%	74%	6%	14%	55.7



Purchases Index

The purchases index was relatively unchanged. Oil & gas, non-durable goods manufacturing, and health care reported this index as rising. Construction and durable goods reported purchases as down.

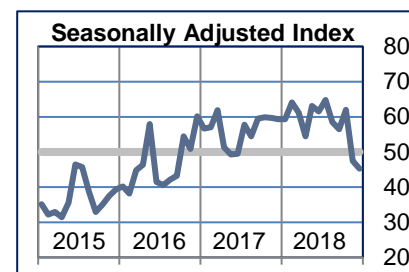
	Higher	Same	Lower	Net	Index
Jul/18	17%	78%	5%	12%	57.6
Aug/18	22%	74%	4%	18%	57.8
Sep/18	26%	66%	8%	18%	58.7
Oct/18	22%	70%	8%	14%	60.0
Nov/18	10%	87%	3%	7%	54.6
Dec/18	12%	82%	6%	6%	54.0



Prices Paid Index

The prices paid index fell further below neutral during the month. While O&G and construction reported this index as rising, durable goods manufacturing and wholesale trade indicated falling prices.

	Higher	Same	Lower	Net	Index
Jul/18	32%	67%	1%	31%	64.8
Aug/18	16%	83%	1%	15%	58.5
Sep/18	20%	72%	8%	12%	56.4
Oct/18	30%	69%	1%	29%	62.0
Nov/18	8%	81%	11%	-3%	47.4
Dec/18	10%	74%	16%	-6%	45.3



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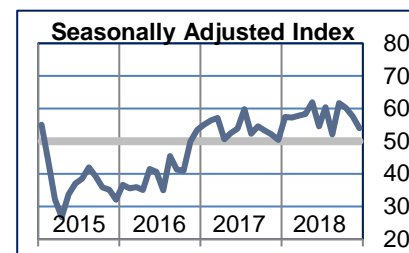
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Lead Times Index

The lead times index pointed to growth at a moderately slower pace. Only oil & gas reported lead times as rising. All other sectors reported near neutral.

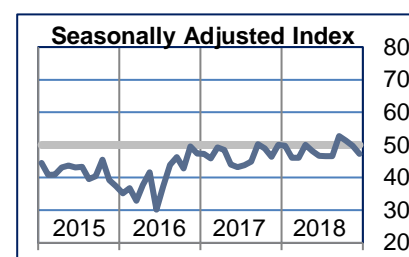
	Higher	Same	Lower	Net	Index
Jul/18	20%	77%	3%	17%	60.4
Aug/18	8%	91%	1%	7%	52.1
Sep/18	24%	75%	1%	23%	61.7
Oct/18	18%	81%	1%	17%	60.2
Nov/18	17%	82%	1%	16%	57.7
Dec/18	11%	85%	4%	7%	54.0



Purchased Inventory Index

The purchased goods inventory index fell further this month. O&G and construction reported significant contraction in this index. All other sectors reported near neutral.

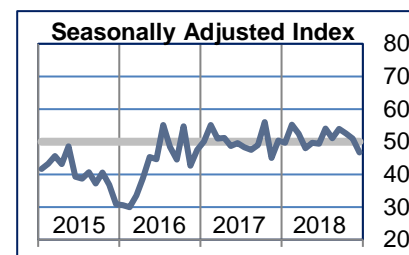
	Higher	Same	Lower	Net	Index
Jul/18	1%	90%	9%	-8%	46.6
Aug/18	1%	92%	7%	-6%	46.6
Sep/18	8%	89%	3%	5%	52.7
Oct/18	4%	89%	7%	-3%	51.4
Nov/18	5%	90%	5%	0%	49.7
Dec/18	1%	89%	10%	-9%	47.3



Finished Goods Inventory Index

The finished goods inventory index fell below neutral during the month with many sectors indicating modest declines in these inventories.

	Higher	Same	Lower	Net	Index
Jul/18	13%	82%	5%	8%	54.0
Aug/18	11%	81%	8%	3%	51.1
Sep/18	9%	89%	2%	7%	53.9
Oct/18	5%	94%	1%	4%	52.6
Nov/18	5%	93%	2%	3%	51.0
Dec/18	1%	94%	5%	-4%	46.8



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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