

ISM-Houston Business Report

December 2021



ISM—Houston, Inc.

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

(Houston, Texas) – According to Houston area supply chain executives, economic activity in Houston expanded at a somewhat slower pace December. The overall ISM-Houston PMI diffusion index fell modestly, led by slower expansion in non-manufacturing sectors. Manufacturing activities also expanded at a slower pace led by declines in the durable goods space.

The Houston Purchasing Managers Index fell 2.5 points to 57.8 during the month. Lower sales/new orders, employment, and lead times indices along with a modestly higher finished goods inventory index caused this fall. The first three of these indicators have the strongest direct correlation with the economic activity in Houston. The sales/new orders index fell 4.8 points to 56.6. The employment index fell 0.2 points to 57.5. The lead times index fell 4.3 points to 62.8. The Finished goods inventory index, the underlying indicator that has the strongest inverse correlation with economic activity, rose 0.7 points to 47.5, continuing to point to moderate economic expansion.

The three-month forecast for the Houston PMI fell 1.4 points to 55.7. Lower sales/new orders and prices paid indices, partially offset by a higher production index, accounted for this fall. These indices have a strong direct correlation with economic activity at the three-month forecast horizon.

On an industry specific basis, healthcare, professional and management services, oil & gas, manufacturing, construction, real-estate, and trade and transportation reported moderate to strong expansion. Leisure and hospitality reported contraction for the first time since early in the pandemic. The three-month forecast continues to predict expansion, primarily due to the strength of the sales/new orders, production, and prices paid indices.

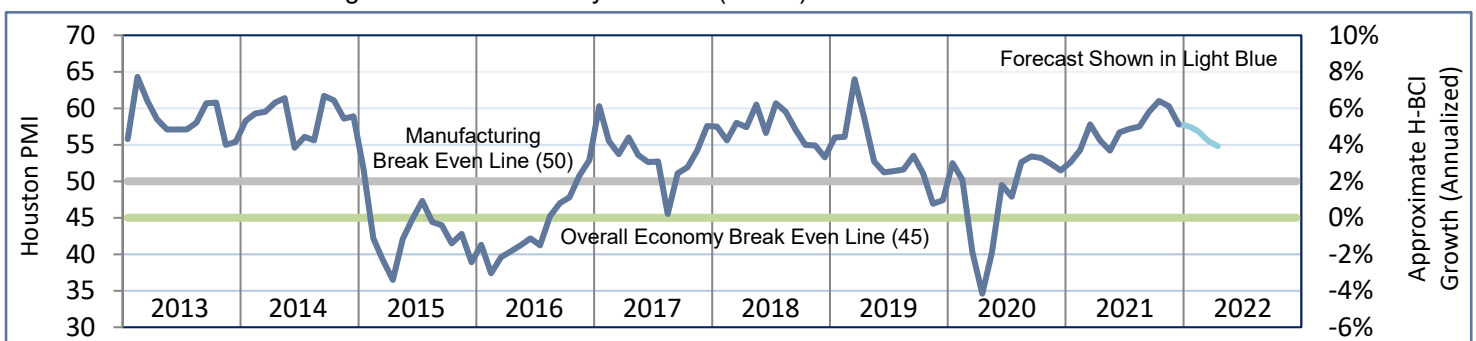
Indices at a Glance

Index	Dec	Nov	Change	Track	Rate	Trend*
Houston Overall PMI - Current	57.8	60.3	-2.5	Expanding	Slower	17
Houston Overall PMI - 3M Forecast	55.7	57.1	-1.4	Expanding	Slower	19
Sales/New Orders	56.6	61.4	-4.8	Rising	Slower	19
Production	53.7	53.0	0.7	Rising	Faster	19
Employment	57.5	57.7	-0.2	Rising	Slower	11
Purchases	54.4	58.4	-4.0	Rising	Slower	4
Prices Paid	64.7	69.2	-4.5	Rising	Slower	16
Lead Times	62.8	67.1	-4.3	Rising	Slower	21
Purchased Inventory	52.3	49.3	3.0	Rising	Fr. Falling	1
Finished Goods Inventory	47.5	46.8	0.7	Falling	Slower	12
Overall Houston Economy				Expanding	Slower	19

* Number of months on current track

Houston PMI Trend

Overall economic activity in Houston expanded in December. HPMI readings over 50 generally indicate goods producing industry expansion; readings below 50 show contraction. An HPMI above 45 generally correlates with expansion of the Houston-The Woodlands-Sugar Land Business Cycle Index (H-BCI).



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

Up in Price: Medical supplies; truck, general, craft, skilled, and professional labor; motor fuels[†], electricity; chemicals, industrial gasses; oil country tubular goods (OCTG), drilling rigs, frac crews, structural steel[†], carbon and alloy steel pipe, lined pipe, capital equipment, lumber, MRO materials; rail and truck transportation; IT software and hardware

Down in Price: Crude oil, motor fuels[†], natural gas, natural gas liquids; ethane, propane, normal-butane, iso-butane, propylene, PVC pipe and components, structural steel[†]; silver, platinum and palladium for catalysts

In Short Supply: Medical supplies; general, craft, and professional labor (accounting, finance, HR, IT, supply chain, administrative); chemicals, MRO materials, OEM spare and repair parts; transportation equipment; computer hardware

[†] reported as up or down by different respondents

What Our Respondents Are Saying

Oil and Gas Exploration, and Key Support Services:

- Taking action to mitigate the effects of inflation and monitoring our access to labor closely
- Rising COVID-19 cases putting renewed pressure on labor availability
- *This sector expanded at a moderately slower pace during the month; the purchases index joined the production, employment, prices paid, and lead times indices in pointing to strong expansion*

Construction:

- Transportation difficulties remain a concern
- *This sector reported strong growth at a minimally lower rate; the employment, prices paid, and lead times indices stayed at high levels while the sales/new orders index indicated modest contraction*

Durable Goods Manufacturing:

- All material necessary to manufacture goods is going up on price and/or delivery of material is almost always delayed
- *This sector weakened to near neutral during the month; while the lead times index remained strong, the sales/new orders and production indices fell to well below neutral; All other indices reported near neutral*

Non-durable Goods Manufacturing:

- *This sector strengthened with all indices except the purchases and inventory indices reporting well above neutral*

Trade, Transportation, and Warehousing:

- Houston container traffic is running well above historic levels
- *This sector expanded at a significantly slower pace this month with all indices except the prices paid index reporting near neutral*

Real-Estate Services:

- The industrial real estate market is very strong
- Our [new home] sales are slowing but continue to run above last year's levels
- *This sector expanded at a moderately slower pace; the sales/new orders, prices paid, lead times, and inventory indices moderated but remained strong; all other indices reported near neutral*

Professional and Business Services:

- Job openings continue to exceed the availability of talent for professional and technical roles and also for light and heavy industrial labor positions
- There is an adequate supply of candidates but they are being picky regarding the opportunities they will pursue
- Resignations by professionals and technical talent continue to increase as individuals leave the job market or look for more flexible work environments and higher pay; wages and salaries continue to rise
- Capital spending in the O&G sector is slowly increasing as oil prices remain above \$60, however, finding talent to work on the projects is proving to be a significant challenge.
- *This sector continued to show strength during the month; the sales/new orders, employment, prices paid, and lead times indices remained strong*

Leisure and Hospitality

- We were forced to close during the last week of the year due to staff COVID-19 infections
- *Activity in this sector fell considerably during the month; the sales index showed contraction while all other indices reported near neutral*

What Our Respondents Are Saying (Continued)

Health Care

- The rise in COVID-19 cases has put significant strain on the test supply market for both COVID and other test materials
- Booster shot mandates for healthcare workers will put pressure on the supply for needles and syringes near term
- *This sector reported expansion at a higher rate than last month; the sales/new orders, employment, purchases, prices paid, and lead times indices all showed strength*

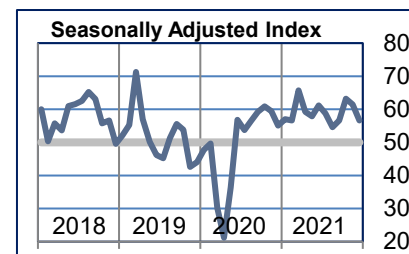
Trend of Underlying Indicators

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. Values above 50 for Sales/New Orders, Production, Employment, Prices Paid, and Lead Times generally point towards expansion 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 three-month forecast horizon.

Sales/New Orders Index

The sales/new orders index fell significantly due to lower activity in non-manufacturing sectors and durable goods manufacturing. Non-durable goods manufacturing improved to indicate significant strength in this index.

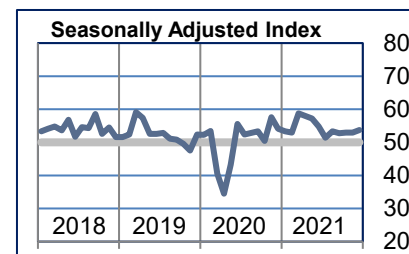
	Higher	Same	Lower	Net	Index
Jul/21	19%	81%	0%	19%	58.7
Aug/21	10%	89%	1%	9%	54.6
Sep/21	15%	84%	1%	14%	56.7
Oct/21	23%	75%	2%	21%	63.2
Nov/21	17%	82%	1%	16%	61.4
Dec/21	12%	82%	6%	6%	56.6



Production Index

The production index was relatively unchanged. Oil & gas and non-durable goods manufacturing operations reported considerable strength again this month. All other sectors that report this index came in near neutral.

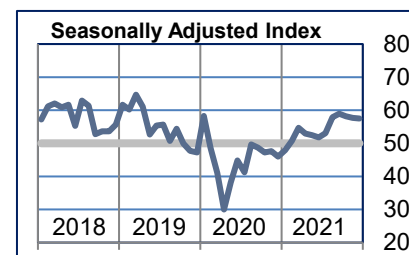
	Higher	Same	Lower	Net	Index
Jul/21	4%	95%	1%	3%	51.4
Aug/21	6%	94%	0%	6%	53.3
Sep/21	10%	86%	4%	6%	52.7
Oct/21	10%	86%	4%	6%	52.9
Nov/21	7%	92%	1%	6%	53.0
Dec/21	8%	90%	2%	6%	53.7



Employment Index

The employment index was relatively unchanged. Non-durable goods, oil & gas, transportation, health care, and professional and business services reported above neutral. Durable goods, and leisure and hospitality fell to neutral.

	Higher	Same	Lower	Net	Index
Jul/21	13%	79%	8%	5%	53.1
Aug/21	16%	81%	3%	13%	57.9
Sep/21	19%	80%	1%	18%	58.9
Oct/21	21%	73%	6%	15%	58.2
Nov/21	20%	74%	6%	14%	57.7
Dec/21	16%	82%	2%	14%	57.5



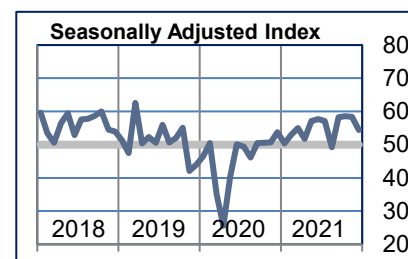
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Purchases Index

The purchases index fell significantly during the month. Healthcare was the only sector to show strength in this index. All other sectors reported near neutral.

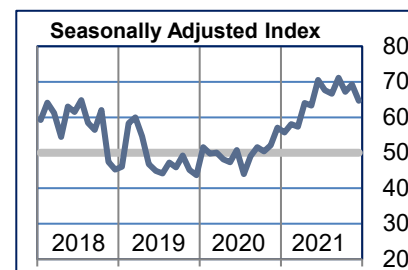
	Higher	Same	Lower	Net	Index
Jul/21	17%	77%	6%	11%	57.1
Aug/21	3%	94%	3%	0%	49.2
Sep/21	22%	78%	0%	22%	58.3
Oct/21	20%	78%	2%	18%	58.6
Nov/21	16%	82%	2%	14%	58.4
Dec/21	8%	88%	4%	4%	54.4



Prices Paid Index

The prices paid index also fell during the month. Almost all sectors continue to report this index as expanding at a rapid, but somewhat slower, pace.

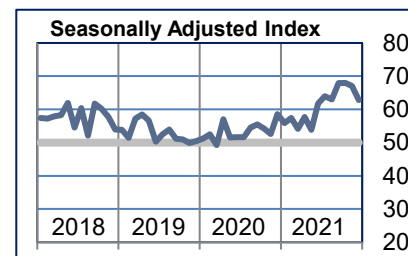
	Higher	Same	Lower	Net	Index
Jul/21	32%	68%	0%	32%	67.6
Aug/21	31%	69%	0%	31%	66.7
Sep/21	42%	58%	0%	42%	71.1
Oct/21	39%	61%	0%	39%	67.1
Nov/21	37%	62%	1%	36%	69.2
Dec/21	26%	72%	2%	24%	64.7



Lead Times Index

The lead times index also fell during the month. As with the prices paid index, most sectors reported this index as continuing to expand at a rapid pace.

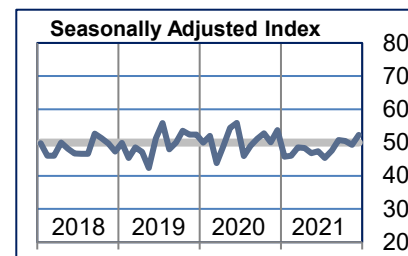
	Higher	Same	Lower	Net	Index
Jul/21	27%	73%	0%	27%	63.9
Aug/21	26%	74%	0%	26%	63.1
Sep/21	36%	64%	0%	36%	67.9
Oct/21	35%	64%	1%	34%	68.0
Nov/21	35%	62%	3%	32%	67.1
Dec/21	26%	70%	4%	22%	62.8



Purchased Inventory Index

The purchased inventory index rose to above neutral. Durable goods manufacturing reported significant expansion in these inventories while all other sectors that report these inventories reported near neutral.

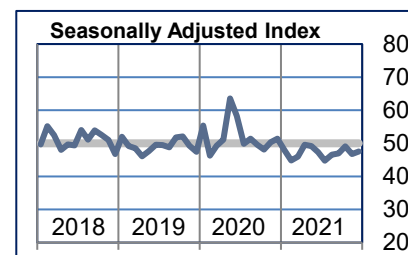
	Higher	Same	Lower	Net	Index
Jul/21	0%	93%	7%	-7%	45.4
Aug/21	0%	95%	5%	-5%	47.6
Sep/21	2%	96%	2%	0%	50.8
Oct/21	2%	95%	3%	-1%	50.4
Nov/21	2%	95%	3%	-1%	49.3
Dec/21	2%	97%	1%	1%	52.3



Finished Goods Inventory Index

The finished goods inventory index rose modestly. New home construction continues to report these inventories as contracting at a rapid pace. All other sectors reported near neutral.

	Higher	Same	Lower	Net	Index
Jul/21	0%	92%	8%	-8%	44.7
Aug/21	0%	95%	5%	-5%	46.6
Sep/21	0%	92%	8%	-8%	47.0
Oct/21	0%	93%	7%	-7%	49.1
Nov/21	1%	93%	6%	-5%	46.8
Dec/21	1%	95%	4%	-3%	47.5



Houston PMI Calculation Methods

The Houston Purchasing Managers Index has been included as an integral part of the ISM-Houston Business Report since the Houston chapter of the Institute for Supply Management started publication of this document in January 1995. The report and index are published monthly as the primary deliverables from a survey of Houston area Supply Chain leaders regarding the status of key activities believed to provide insight into the strength of the economy. The respondents come from diverse organizations including construction, energy, engineering, health care, durable and non-durable goods manufacturing, financial and business services, wholesale and retail trade, and utilities related companies.

The Houston Purchasing Managers Index is determined from diffusion indices of the eight indicators of economic activity covered by the ISM-Houston Business Survey and Report. These underlying indicators are sales or new orders, production, employment, purchases, prices paid for major purchases, lead times from sellers, purchased materials inventory (raw materials and supplies), and finished goods inventories. The respondents to the survey report the direction of each these activities as either up, the same or down in comparison to the previous month. An index for each of these areas is then calculated by subtracting the percentage of respondents that sight a negative shift from the percentage that sight a positive shift. For indicators that are positively correlated with economic growth, this results in an underlying index that points to expansion when it is above zero. Indicators that are negatively correlated with growth point to expansion when they are below zero.

The final 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. This top-level index is converted to a 0 to 100 scale to match that of the national Purchasing Managers Index® (PMI®) which is published monthly by the Institute for Supply Management® (ISM®). Readings over 50 for the HPMI generally indicate manufacturing expansion in the Houston in the near term and readings below 50 show coming manufacturing contraction.

It is important to note that the manufacturing breakeven HPMI does not equate to the breakeven point for the overall Houston economy. 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 economy as measured by the Houston BCI. A similar offset between the National PMI and the National economy has existed for some time.

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