

Analysis and report by **James Rosemond and Ross Harvison, CPSM** ISM-Houston Business Survey Committee

Houston PMI at 53.2 (up 4.0 points)

Sales/New Orders Expanding
Production Expanding
Employment Expanding
Prices Paid Expanding
Lead Times Contracting
Finished Goods Inventories Contracting

(Houston, Texas) – According to Houston area supply chain executives, economic activity in Houston showed mixed results in November, with the manufacturing sector indicating contraction and the non-manufacturing sector indicating moderate expansion. The overall economy expanded for the 54th straight month.

The Houston Purchasing Managers Index increased 4.0 points to 53.2. Sales/new orders, employment and lead time are the top three indicators with a strong positive correlation with the Houston economy. This month, two of the three indexes expanded with one contracting. Employment flipped from contraction to expansion, increasing 7.3 points to 50.7 points. Sales/new orders continued multi month expansion. Sales/new orders rose 2.7 points to finish at 59.8 points. The third indicator (lead times) contracted at a slower rate than October, rising 1.0 point to finish at 49.6 points. The finished goods inventory index, the underlying indicator that has the strongest inverse correlation with economic activity, decreased 0.2 points to 49.1.

The Houston Manufacturing PMI increased 1.4 points to 49.1 points, continuing to stabilize after the considerable drop off in September. The nonmanufacturing PMI increased 4.5 points to 54.0 points.

On an industry specific basis: Construction, retail trade and professional and business services reported strong expansion. Oil and gas extraction and nondurable goods manufacturing reported significant contraction.

Houston PMI Trend

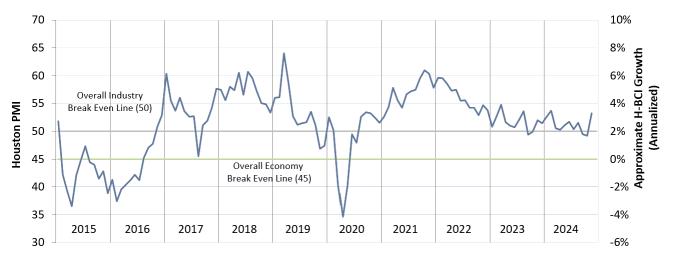
Index	Nov	Oct	Change	Track	Rate	Trend*
Houston Overall PMI	53.2	49.2	4.0	Expanding	Fr. Cont.	1
Houston Manufacturing PMI	49.1	47.7	1.4	Contracting	Slower	3
Houston Non-Manufacturing PMI	54.0	49.5	4.5	Expanding	Fr. Cont.	1
Sales/New Orders	59.8	57.1	2.7	Rising	Faster	4
Production	56.1	51.5	4.6	Rising	Faster	4
Employment	50.7	43.4	7.3	Rising	Fr. Falling	1
Purchases	50.7	50.3	0.4	Rising	Faster	11
Prices Paid	51.6	48.3	3.3	Rising	Fr. Falling	1
Lead Times	49.6	48.6	1.0	Falling	Slower	2
Purchased Inventory	48.8	48.6	0.2	Falling	Slower	2
Finished Goods Inventory	49.1	49.3	-0.2	Falling	Faster	2
Overall Houston Economy				Expanding	Faster	54

^{*} Number of months on current track



Indices at a Glance

(Houston PMI readings over 50 generally indicate that respondents see their activities as expanding. An HPMI above 45 normally 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: Professional services, Industrial gases, natural gas process chemicals, feedstock, catalyst, electrical gear and components, transformers, elastomers, switchgear, compressors, lumber, imported goods, ocean container freight

Down in Price: Propylene, polypropylene resins, proppant, gasoline, oil country tubular goods (OCTG), steel products, nickel, palladium nickel, logistics services, break bulk freight, trucking

In Short Supply: Technical labor, crude oil, glycols, PFA components, electronics, electrical gear, electrical components, generators, transformers, switchgear, compressors

[‡] reported as up or down by different respondents

What Our Respondents Are Saying

Oil and Gas Exploration, and Key Support Services:

- Q4 is showing an increase in sales compared to Q1-3
- Client intelligence has indicated that the path forward for the Energy Industry is brighter after the election results in November. We don't anticipate a "flood" of new or adding to existing business, but we do think the future is brighter now than 5 months ago.
- Continued slow market dynamics
- This sector's performance improved significantly over October; however, it still contracted. Sales expanded and production saw a sharp expansion as well. Employment only saw a marginal increase versus October and still contracted. Lead times contracted slower but were still far from expanding and full goods inventory fell into contraction.

Construction:

- Despite a more favorable regulatory future for energy under the incoming US administration, exploration for oil and gas will continue to be met with capital discipline rather than "drill baby drill".
- This sector indicated strong growth for the month of November. With seven of the eight indexes indicating expansion. Only prices indicated slight contraction.



What Our Respondents Are Saying (Continued)

Durable Goods Manufacturing:

- We continue to have to let people go because of low bookings.
- Steady to improving
- PVC, PE, and PP resin prices remained near recent lows
- The newly elected administration in the US is expected to implement additional tariffs and duties. Trading nations are expected to enact retaliatory measures. Global commodity markets will be impacted significantly.
- Commodity pricing has been relatively stable during this calendar year in light of continuing high inflation. The potential for tariff increases on goods manufactured by suppliers internationally could impact our cost of goods sold in the upcoming calendar year. New policies regarding Oil & Gas exploration and production could impact demand for our manufactured oilfield equipment in the coming year as well.
- Durable goods saw expansion in November; driven by strong sales. Employment and lead times also saw expansion.
 Only the purchasing index saw a dramitc swing from expansion to strong contraction.

Non-durable Goods Manufacturing:

- Natural gas prices have risen rapidly in late November and early December as a result of lower than expected U.S. inventories
- Olefins cracker feedstock prices remain low
- Prices for precious metals for catalysts (gold, silver, and palladium) remained stable
- This sector moderately contracted in November; sales saw moderate expansion; however, employment is weak, continuing to contract month over month. The full goods inventory went from contraction to expansion.

Professional and Business Services:

- We are in the People business both for Direct Hire and Professional Contract Services (Hourly bill). We do not see any change in people availability even though the opportunities have picked up a bit since the election in November
- Prices for both Direct Hire and Professional Contract Hourly Services have remained steady
- This sector's performance indicated moderate expansion. The sales and employment indexes indicated strong expansion. Only the price index indicated slight contraction.

Retail Trade:

• This sector's performance indicated strong expansion for the month of November. The sales and employment indexes indicated strong expansion. Only the price index indicated slight contraction.

Transportation and Warehousing:

 This sector's performance indicated moderate expansion for the month of November. The sales index indicated strong expansion, which was accompanied by strong production and prices. The sector saw contraction in employment and full goods inventory.



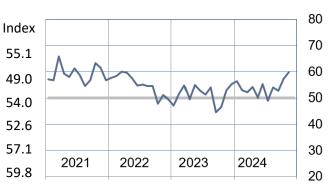
Trend of Underlying Indicators

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 seasonal adjustments to the Sales/New Orders, Production, Employment, and Prices Paid indices 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



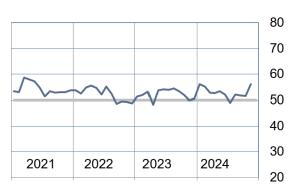
Sales/New Orders Index (Seasonally Adjusted)

The sales/new orders		Higher	Same	Lower
index indicated strong expansion in November.	Jun/24	10%	87%	3%
Both the manufacturing	Jul/24	5%	89%	6%
and nonmanufacturing	Aug/24	10%	85%	5%
sectors saw expansion at faster rates than Octo-	Sep/24	11%	82%	7%
ber.	Oct/24	18%	74%	8%
	Nov/24	19%	74%	7%



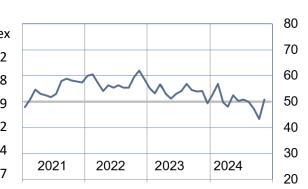
Production Index (Seasonally Adjusted)

The production index		Higher	Same	Lower	Net	Index
saw good expansion in November. Both manu-	Jun/24	10%	85%	5%	5%	52.0
facturing and nonmanu-	Jul/24	5%	89%	6%	-1%	48.9
facturing expanded at roughly the same rate. Nonmanufacturing saw strong month over	Aug/24	9%	87%	4%	5%	52.0
	Sep/24	8%	87%	5%	3%	51.6
	Oct/24	8%	89%	3%	5%	51.5
month expansion.	Nov/24	14%	80%	6%	8%	56.1



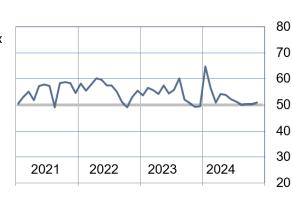
Employment Index (Seasonally Adjusted)

The employment index		Higher	Same	Lower	Net	Index
moved just into expan-	Jun/24	9%	86%	5%	4%	50.2
sion. It was helped by moderate nonmanufac- turing expansion. Manu- facturing contracted	Jul/24	9%	83%	8%	1%	50.8
	Aug/24	5%	86%	9%	-4%	49.9
	Sep/24	4%	87%	9%	-5%	47.2
month over month but at a slower rate.	Oct/24	4%	80%	16%	-12%	43.4
a slower rate.	Nov/24	8%	85%	7%	1%	50.7



Purchases Index (Not Seasonally Adjusted)

The purchases index ex-		Higher	Same	Lower	Net	Index
panded at a faster rate in	Jun/24	10%	85%	5%	5%	52.1
November vs October. The improvement was	Jul/24	11%	81%	8%	3%	51.2
driven by the nonmanu-	Aug/24	8%	84%	8%	0%	50.1
facturing sector flipping	Sep/24	7%	86%	7%	0%	50.3
from contracting to expanding. The manufac-	Oct/24	9%	83%	8%	1%	50.3
turing index contracted	Nov/24	9%	84%	7%	2%	50.7
slightly.						



Net

7%

-1%

5%

4%

10%

12%



80 70 60

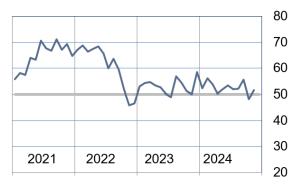
50

40 30

20

Prices Paid Index (Seasonally Adjusted)

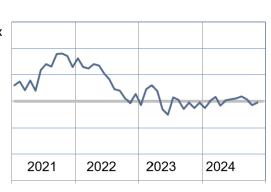
The prices paid index		Higher	Same	Lower	Net	Index
expanded slightly in No-	Jun/24	5%	91%	4%	1%	53.3
vember. The manufac-	Jul/24	10%	86%	4%	6%	52.0
turing sector saw strong expansion while the non-	Aug/24	9%	85%	6%	3%	52.2
manufacturing sector	Sep/24	12%	86%	2%	10%	55.6
saw slight contraction.	Oct/24	3%	95%	2%	1%	48.3
Last month, both contracted.	Nov/24	9%	87%	4%	5%	51.6



Lead Times Index (Not Seasonally Adjusted)

The lead times index con-	
tracted for November.	Jı
The manufacturing sec-	١.
tor expanded at a slightly	Jı
faster rate than October	Α
while the nonmanufac-	S
turing sector contracted	_
at a slower rate than Oc-	C
tober.	Ν

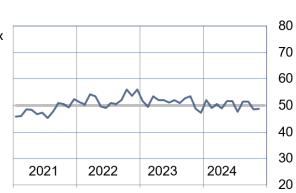
-		Higher	Same	Lower	Net	Index
	Jun/24	5%	91%	4%	1%	50.6
,	Jul/24	4%	94%	2%	2%	50.9
	Aug/24	8%	88%	4%	4%	51.7
	Sep/24	4%	93%	3%	1%	50.6
	Oct/24	2%	93%	5%	-3%	48.6
	Nov/24	3%	93%	4%	-1%	49.6



Purchased Inventory Index (Not Seasonally Adjusted)

The purchased inventory
index contracted in No-
vember. The nonmanu-
facturing sector was just
below neutral while the
manufacturing sector
contracted at a slower
rate than October.

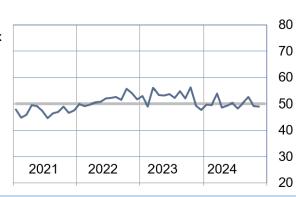
	Higher	Same	Lower	Net	Index
Jun/24	5%	93%	2%	3%	51.5
Jul/24	2%	91%	7%	-5%	47.8
Aug/24	7%	89%	4%	3%	51.4
Sep/24	7%	89%	4%	3%	51.4
Oct/24	4%	89%	7%	-3%	48.6
Nov/24	2%	94%	4%	-2%	48.8



Finished Goods Inventory Index (Not Seasonally Adjusted)

The finished goods inven-
tory index contracted in
November. The nonman-
ufacturing sector was just
below neutral, versus
neutral in October. The
manufacturing sector was
neutral for November.

-		Higher	Same	Lower	Net	Index
	Jun/24			4%		
	Jul/24	2%	93%	5%	-3%	48.3
	Aug/24					
	Sep/24	7%	91%	2%	5%	52.6
	Oct/24	4%	91%	5%	-1%	49.3
	Nov/24	3%	93%	4%	-1%	49.1





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.

Use of ISM-Houston Business Report Content

All information contained in this report is protected by copyright laws and ISM-Houston retains all rights to this Content. ISM-Houston hereby grants you a limited, revocable license to access, print, and display this Content solely for your personal, non-commercial use. Requests for permission to reproduce or redistribute ISM-Houston Business Report Content can be made by contacting the ISM-Houston Business Survey Committee at hpmi@ism-houston.org.

ISM-Houston shall not have any liability, duty, or obligation for or relating to the ISM-Houston Business Report Content or other information contained herein, any errors, inaccuracies, omissions or delays in providing any ISM-Houston Business Report Content, or for any actions taken in reliance thereon. In no event shall ISM-Houston be liable for any special, incidental, or consequential damages, arising out of the use of the ISM-Houston Business Report.