

ISM-Houston Business Report

September 2022



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 similar pace in September. Manufacturing sector activity expanded at a modestly faster pace while non-manufacturing activity showed a minimally lower expansion rate.

The Houston Purchasing Managers Index was unchanged at 54.2. All of the underlying indicators that have a strong correlation with the Houston economy had only minor fluctuations. The sales/new orders index fell 0.2 points to 54.4, the employment index was unchanged at 55.4, and the lead times index fell 0.6 points to 53.8. The Finished goods inventory index, the underlying indicator that has the strongest inverse correlation with economic activity, fell 1.2 points to 51.4, continuing to give a modest indication of contraction.

As noted earlier this year, ISM-Houston is now reporting separate indices for manufacturing and non-manufacturing industries in addition to the overall Houston Purchasing Managers Index. The HPMI forecast has been eliminated from this report. The Houston Manufacturing PMI rose 2.1 points to 54.7, pointing to stronger expansion. The non-manufacturing PMI fell 0.4 points to 54.1 showing modestly lower expansion for the industries in this sector.

On an industry specific basis, leisure and hospitality, health care, professional and management services, transportation, trade, and warehousing reported strong expansion. Oil & gas, construction, and manufacturing reported very modest expansion. Real estate reported contraction.

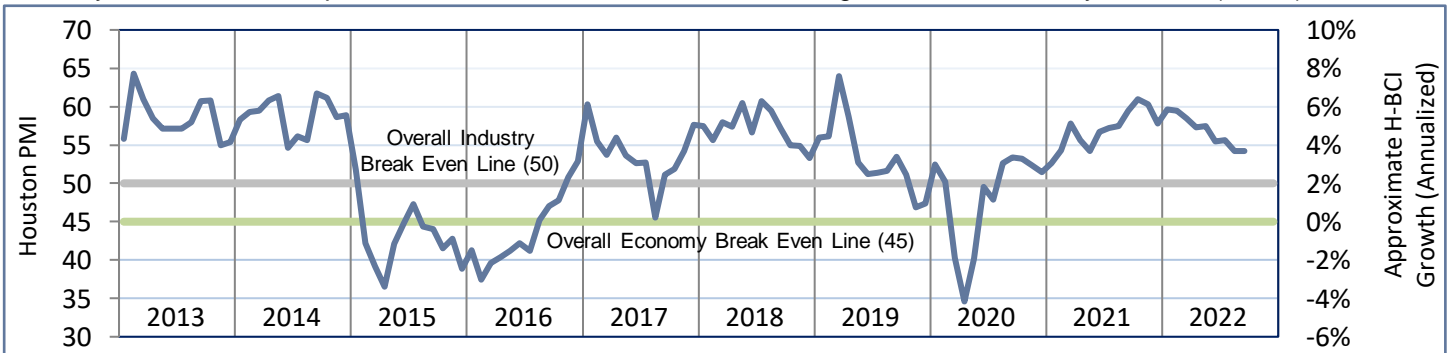
Indices at a Glance

Index	Sep	Aug	Change	Track	Rate	Trend*
Houston Overall PMI	54.2	54.2	0.0	Expanding	Unchanged	26
Houston Manufacturing PMI	54.7	52.6	2.1	Expanding	Faster	22
Houston Non-Manufacturing PMI	54.1	54.5	-0.4	Expanding	Slower	26
Sales/New Orders	54.4	54.6	-0.2	Rising	Slower	28
Production	48.6	52.5	-3.9	Falling	Fr. Rising	1
Employment	55.4	55.4	0.0	Rising	Slower	20
Purchases	51.0	55.1	-4.1	Rising	Slower	13
Prices Paid	59.4	63.6	-4.2	Rising	Slower	25
Lead Times	53.8	54.4	-0.6	Rising	Slower	30
Purchased Inventory	51.9	50.4	1.5	Rising	Faster	3
Finished Goods Inventory	51.4	52.6	-1.2	Rising	Slower	6
Overall Houston Economy				Expanding	Slower	27

* Number of months on current track

Houston PMI Trend

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: Engineering, professional, and technical services; craft, skilled and unskilled labor; large medical equipment (MRI); chlorine, liquid caustic soda, ammonia, toluene, xylene, triethylene glycol, 3-mercaptopropionic acid, waste treatment chemicals, drilling fluids; rotating equipment, electrical gear and components, cement, glass, oil country tubular goods (OCTG); fabrication facilities; computer software and hardware

Down in Price: Crude oil, motor fuels (gasoline, diesel, jet), natural gas; cracker feedstocks (ethane, propane, butanes, natural gas liquids), ethylene, propylene, benzene, ethylene dichloride, PVC, polyethylene, polypropylene, silicon materials, solvents; steel, wire & cable, nickel products, lumber; containerized and bulk ocean freight

In Short Supply: Senior consultant, engineering, and IT labor; light industrial labor; medical lab supplies, sterilization equipment, syringes, anything related to drawing blood; triethylene glycol, phosphoric acid, pigments, teflon containing materials, uncured rubber compounds; oil country tubular goods (OCTG), drilling rigs, select sizes of steel pipe, stainless steel, electric motors, electrical gear, some mechanical equipment, generators, glass, cement, compressors; power supplies, electronics, semiconductors, computer hardware

What Our Respondents Are Saying

Oil and Gas Exploration, and Key Support Services:

- Security of supply has a greater priority now than the price paid for the product
- Forecasting ongoing disruption and cost inflation in most supply chains into 2023
- Rig counts have leveled out
- *Expansion in this sector slowed further with the sales/new orders, employment, and purchases indices falling to neutral; prices paid and lead time indices increased to well above neutral*

Construction:

- Not seeing anything in short supply, but lead times remain challenged
- The shortage of labor in the US continues to be a challenge across industries
- Demand still solid for now, finished goods beginning to show cost decreases from lower input costs
- *Performance in this sector slowed to near neutral with the sales/new orders, prices paid, and lead times indices showing significant contraction; the employment index remained strong*

Durable Goods Manufacturing:

- *This sector reported modest expansion again this month; the sales/new orders index continuing to show strength while the inventory indices moved to indicate economic expansion*

Non-durable Goods Manufacturing:

- Still strong outlook
- Consumer demand for non-essential products continues to soften
- China imports for commodities is pushing costs down for certain materials
- Most prices were flat
- The chemical industry should be able to hold its own, barring a hurricane
- *This sector's overall performance strengthened modestly driven by significant increases in the prices paid and lead times indices; the sales/new orders and production indices fell below neutral*

Trade, Transportation, and Warehousing:

- Trend is slowing, but a steady orders are coming in from the market
- *Multiple projects that were delayed are now being greenlit as production seeks to ramp up*
- *This sector moved further above neutral with the sales/new orders, employment, prices paid, and lead times indices coming in well above neutral*

Real-Estate Services:

- *Demand for new and existing homes has slowed considerably*
- *This sector's overall performance fell well below neutral with the sales/new orders, purchases, and lead times indices contracting at a fast pace; industrial and apartment related real-estate reported continued expansion while housing contracted at a rapid pace*

ISM-Houston Business Report

September 2022



What Our Respondents Are Saying (Continued)

Professional and Business Services:

- Job openings continue to outpace the supply of talent to fill open positions across most labor categories
- We continue to see strong demand and limited supply
- People are very picky at choosing job opportunities; we foresee this to continue until the end of the year.
- As long as the price of oil stays above \$80/bbl Houston and the energy sector can expect strong market
- *This sector continued to expand at a moderate pace with the employment and purchases indices showing continued strength; all other indices were reported near neutral*

Health Care

- Seeing a lot of other surcharges like fuel even though fuel prices are down
- Healthcare is robust in Houston
- Supply chain is still constrained on a lot of things; even things like doors, AC equipment, and furniture are seeing long lead times with manufacturer failing to adapt to a non-just in time reality
- We are seeing shortages, especially at the low end and specialized care is getting very tight
- *This sector continued to report strong growth during the month with the sales/new orders, purchases, prices paid, and lead times indices coming in well above neutral*

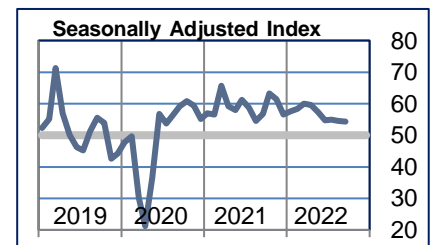
Trend of Underlying Indicators

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. 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 minimally with manufacturing activities reporting near neutral and non-manufacturing activities showing a modestly higher growth rate.

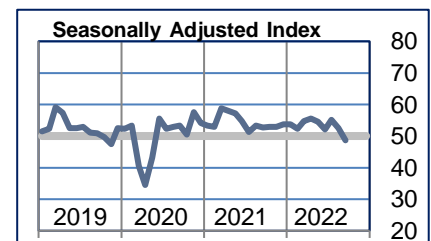
	Higher	Same	Lower	Net	Index
Apr/22	24%	75%	1%	23%	59.7
May/22	21%	77%	2%	19%	57.4
Jun/22	14%	82%	4%	10%	54.8
Jul/22	15%	81%	4%	11%	55.0
Aug/22	14%	82%	4%	10%	54.6
Sep/22	17%	75%	8%	9%	54.4



Production Index

The production index fell below neutral for the first time in more than two years with both manufacturing and nonmanufacturing activities showing contraction.

	Higher	Same	Lower	Net	Index
Apr/22	13%	86%	1%	12%	55.6
May/22	12%	87%	1%	11%	54.6
Jun/22	7%	91%	2%	5%	52.0
Jul/22	13%	84%	3%	10%	55.1
Aug/22	10%	85%	5%	5%	52.5
Sep/22	6%	85%	9%	-3%	48.6



ISM-Houston Business Report

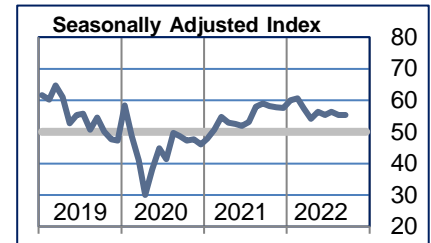
September 2022



Employment Index

The employment index was unchanged indicating continue growth. Construction, transportation, and professional services continued to report strength in this index. O&G fell to neutral.

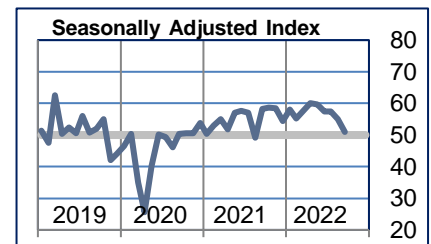
	Higher	Same	Lower	Net	Index
Apr/22	15%	83%	2%	13%	54.1
May/22	17%	81%	2%	15%	56.4
Jun/22	15%	84%	1%	14%	55.3
Jul/22	15%	83%	2%	13%	56.3
Aug/22	14%	84%	2%	12%	55.4
Sep/22	15%	83%	2%	13%	55.4



Purchases Index

The purchases index also fell to just above neutral. Construction, transportation and trade, professional services, and health care reported strength while O&G and manufacturing reported weakness.

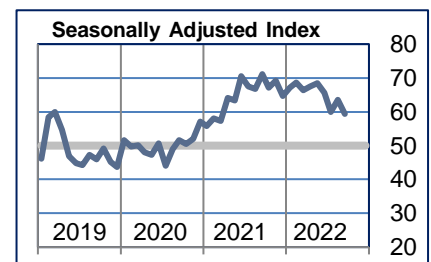
	Higher	Same	Lower	Net	Index
Apr/22	22%	77%	1%	21%	60.1
May/22	21%	77%	2%	19%	59.6
Jun/22	19%	79%	2%	17%	57.4
Jul/22	17%	79%	4%	13%	57.5
Aug/22	19%	74%	7%	12%	55.1
Sep/22	11%	84%	5%	6%	51.0



Prices Paid Index

The prices paid index fell modestly during the month. O&G, manufacturing, transportation and trade, and health care reported this index as expanding at a rapid pace. Construction reported it as contracting.

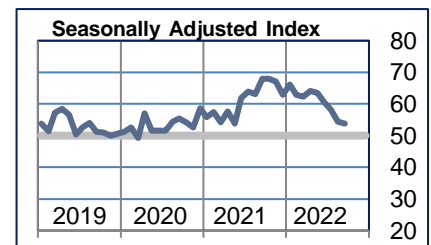
	Higher	Same	Lower	Net	Index
Apr/22	41%	58%	1%	40%	67.4
May/22	41%	58%	1%	40%	68.4
Jun/22	33%	65%	2%	31%	65.7
Jul/22	24%	69%	7%	17%	60.0
Aug/22	29%	67%	4%	25%	63.6
Sep/22	21%	76%	3%	18%	59.4



Lead Times Index

The lead times fell modestly this month. O&G, manufacturing, wholesale trade, and health care reported longer lead times while construction reported lower lead times.

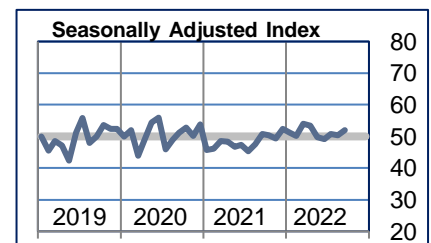
	Higher	Same	Lower	Net	Index
Apr/22	36%	61%	3%	33%	64.0
May/22	33%	63%	4%	29%	63.4
Jun/22	26%	70%	4%	22%	60.4
Jul/22	22%	73%	5%	17%	58.3
Aug/22	17%	76%	7%	10%	54.4
Sep/22	15%	77%	8%	7%	53.8



Purchased Inventory Index

The purchased inventory index rose modestly with transportation and trade reporting significant increases. Durable goods manufacturing reported these inventories as contracting at a fast pace.

	Higher	Same	Lower	Net	Index
Apr/22	10%	88%	2%	8%	53.3
May/22	6%	92%	2%	4%	49.7
Jun/22	7%	86%	7%	0%	49.1
Jul/22	9%	85%	6%	3%	50.8
Aug/22	9%	84%	7%	2%	50.4
Sep/22	6%	88%	6%	0%	51.9



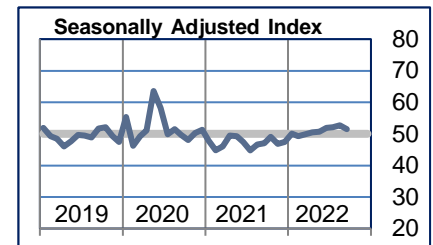
ISM-Houston Business Report

September 2022



Finished Goods Inventory Index

		Higher	Same	Lower	Net	Index
The finished goods inventory index rose modestly. Durable goods manufacturing reported this index as expanding at a rapid pace again this month. Nondurable goods reported it as contracting.	Apr/22	6%	91%	3%	3%	50.5
	May/22	5%	91%	4%	1%	50.8
	Jun/22	5%	92%	3%	2%	51.9
	Jul/22	8%	88%	4%	4%	52.1
	Aug/22	9%	86%	5%	4%	52.6
	Sep/22	7%	87%	6%	1%	51.4



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.