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California Manufacturing Sector Grows at a Slower Rate

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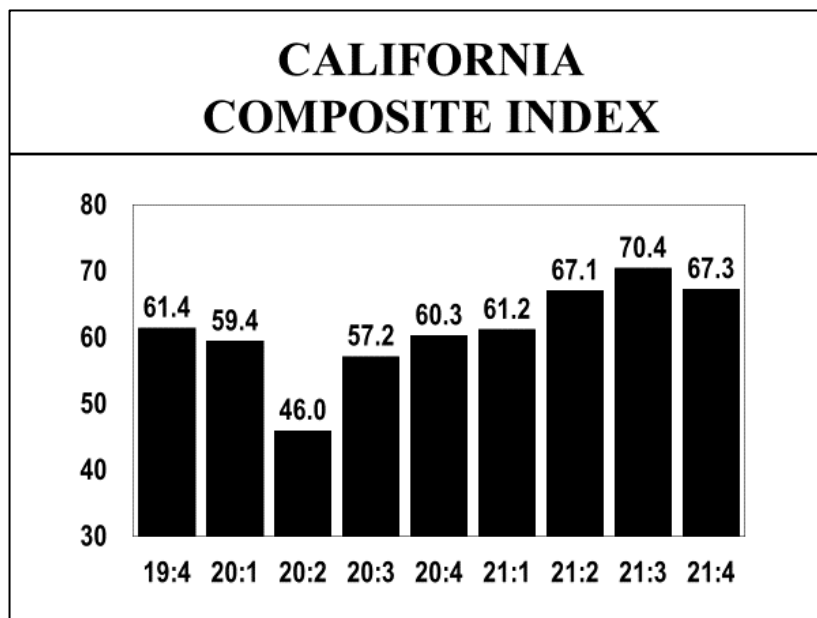
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PRESS RELEASE

CALIFORNIA MANUFACTURING SECTOR GROWS AT A SLOWER RATE

ORANGE, CA — Based on a survey of purchasing managers, the California Composite Index, measuring overall manufacturing activity in the state, decreased from 70.4 in the third quarter to 67.3 in the fourth quarter, indicating that the manufacturing sector is expected to grow at the slower rate in the fourth quarter. “The California manufacturing economy is expected to continue to grow in the last quarter of this year but at a rate below the record high of the third quarter due to lack of raw materials and components, and dramatically slower deliveries,” said Dr. Raymond Sfeir, director of the purchasing managers’ survey. Production, commodity prices, new orders, and employment are expected to grow at a lower rate in the fourth quarter. Supplier deliveries, on the other hand, are expected to slow at the highest rate ever recorded. The purchasing managers in most industries are unable to find employees to fill job openings, are short of raw materials, are facing huge increases in shipping costs and encountering very long delays in port deliveries.



California Manufacturing at a Glance

Composite Index	67.3	Increasing at a lower rate
Production	68.9	Increasing at a lower rate
Inventories of purchased materials	61.7	Increasing at a higher rate
Commodity prices	89.8	Rising at a lower rate
Supplier deliveries	77.9	Slowing at a higher rate
New orders	65.6	Increasing at a lower rate
Employment	64.5	Increasing at a lower rate

Performance by Industry Group

The index for the **non-durable goods industries** decreased from 71.2 in the third quarter to 68.8 in the fourth quarter, indicating an expansion in these industries but at a lower rate. Production is expected to grow at a higher rate. Inventories of purchased materials, commodity prices, new orders and employment are expected to increase at a lower rate in the fourth quarter. Supplier deliveries are expected to be slowing at a lower rate.

The **high-tech industries** include the following: Computer & Electronic Products, and Aerospace Products & Parts. The high-tech industries currently employ about 363,100 employees, amounting to 28.5% of total manufacturing employment in the state. The index for the high-tech industries decreased from 68.1 in the third quarter to 67.5 in the fourth quarter, indicating a lower growth rate in the fourth quarter compared to the third quarter. Production, commodity prices, and new orders are expected to grow at a lower rate. Inventories of purchased materials and employment are expected to increase at a higher rate. Supplier deliveries are expected to be slowing at the highest rate ever recorded, with the index reaching a level of 81.7.

The index for the **durable goods industries other than high-tech** decreased from 71.8 in the third quarter to 65.9 in the fourth quarter, indicating a lower growth rate in these industries. Production, commodity prices, new orders and employment are expected to increase at a lower rate in the fourth quarter. Inventories of purchased materials are expected to increase at a higher rate, and supplier deliveries are expected to be slowing at the highest rate ever recorded, with the index reaching a level of 75.2.

Comments by the Purchasing Managers

4th quarter is the busiest time of the year. But we can't get enough raw materials to cover our orders. The prices are also much higher on anything that is coming over the ocean and the lead times are longer than usual since so many ships are parked out in the ocean waiting to unload. Some containers were shipping for \$2500 a year ago and now they are shipping for over \$20,000! (Food)

We can only hope that the situation at the port gets better. Freight Rates - the hope that these incredible ocean rates would fall has been dashed. Need to plan for these rates to remain in place for the next year or so minimum. OUCH... (Textile Mill Products)

Shipping transportation lead times are longer and more expensive causing delays in raw materials and finished goods. This impact is affecting our manufacturing process and delivery cycle therefore putting a strain on our partnership with retailers. (Apparel)

Due to shortage of raw materials & low number of people coming back to work, things are very difficult at this point. Lead time for supplies needed have gone from 2 to 4 week out to 8 to 10 weeks. And things as simple as 1/2 bolts & nuts are getting hard to come by. Outlook doesn't look very bright. (Wood Products)

Paper suppliers are continually short or completely out of stock making it hard to provide materials for orders. I don't see this situation improving any time soon, it's a nationwide problem and we now have clients asking if we can obtain paper on the West Coast and ship back East as supplies are limited there as well. (Printing & Related Support Activities)

This is a nightmare. Suppliers are declaring force majeure everywhere. Raw materials are trickling in, forcing us to constantly modify production schedules. Costs of production rise and it is very hard to raise our selling prices quickly enough to keep up. It does not seem to be improving in any way, except that new orders keep coming in. We cannot keep up. (Chemicals)

Raw material prices continue to rise faster than seems justified. The first rounds of increases probably were justified, as prices had been depressed longer than they probably should have. But now, it feels like suppliers are taking advantage of the situation, rather than responding to it. (Plastics & Rubber Products)

Supplies are high in demand with less availability due to longer lead times in manufacturing. Still difficult to hire for open positions with very few that want to work. Most submit an application and then don't show up when called in for an interview. (Nonmetallic Mineral Products)

Metal decking is expecting another increase after the first of the year, so some developers are opting to purchase for projects before needed. Open web joists are showing long lead times due to demand in the distribution buildings market. (Primary Metals)

We are busier than we have been in the last 3 years and are working quickly to grow and keep up with demand. We anticipate the demand continuing to grow for next quarter. We do anticipate the demand will level off at some point but not until next year. (Fabricated Metal Products)

We have experienced a lot of strange things this past quarter. We have hired people who never showed up, we have seen deliveries not just extend but by multiples of 2 and 3 normal lead times. Ships are off the coast and can't even get into port because of capacity issues. We have seen multiple price-increases one right after another on the exact same product. Freight costs are up because fuel costs are up, but also because they can't find drivers. Everybody is taking a vacation on the government's (taxpayers) dime. Quite a cacophony. Frustrating. We have the business but can't deliver. (Machinery)

Pandemic effects still felt with longer lead times for materials. The electronic component industry is still suffering lead times of 50+ weeks in some cases due to demand from car and cell phone industries to name a couple. Also manufacturers, which shut down due to COVID-19, are still struggling with a backlog of demand. (Computer & Electronic Products)

We are still experiencing spot shortages of items sourced from China and India. Steel and copper prices are still abnormally high but fairly stable at this time. (Electrical Equipment, Appliance & Components)

Prices continue to increase and do not show any signs of slowing down across most of our suppliers. Steel, brass, metal-based products appear to be the high flyers in increases from 6% to 16%. Poly pipe suppliers are also showing an increase in this range. (Transportation Equipment)

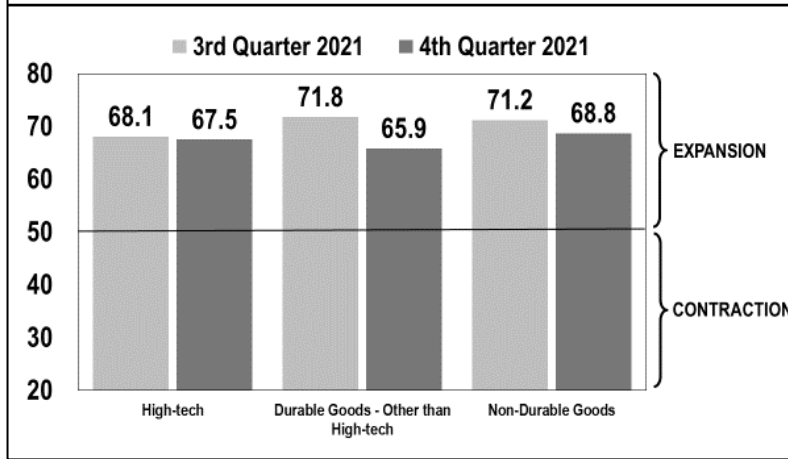
Manufacturing furniture is more challenging than ever. Lumber shortages, foam shortages, adhesive shortages... and of course, raw material costs going up. Most furniture manufacturers that were once quoting 8-12 weeks are now quoting 6-7 months. The demand for furniture seems to be the highest most of my peers have seen. We can only assume it has a lot to do with people traveling less and more people working remotely from their homes. (Furniture & Related Products)

We purchase most material domestically and the problems with suppliers across the board have been lack of employees, employees not showing up or an unskilled labor market from which to find workers. It seems that only in the last few weeks that there are more people coming back to look for work. (Miscellaneous)

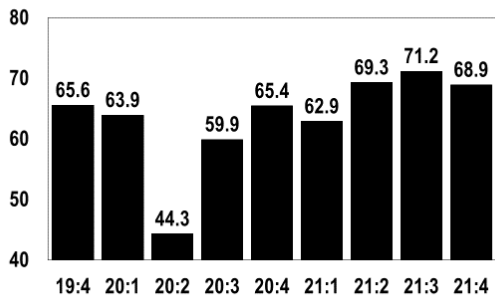
Still experiencing a slow-down due to COVID-19 and world-wide slow-down of commercial flights. (Aerospace Products & Parts)

Defense market segment orders seem to be flat, while space segments are growing. (Aerospace Products & Parts)

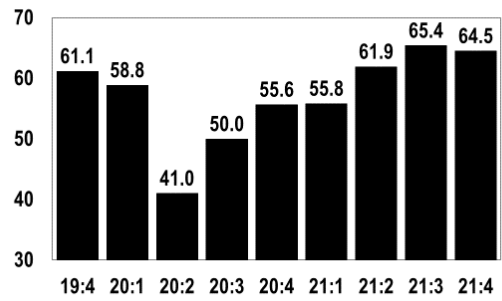
INDICES FOR INDUSTRY GROUPS



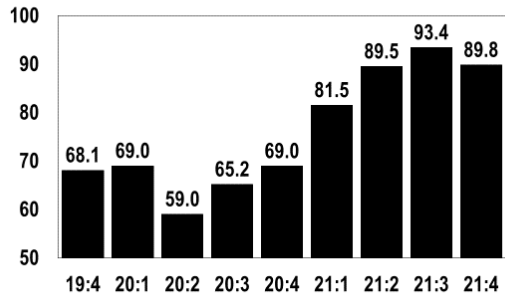
PRODUCTION INDEX



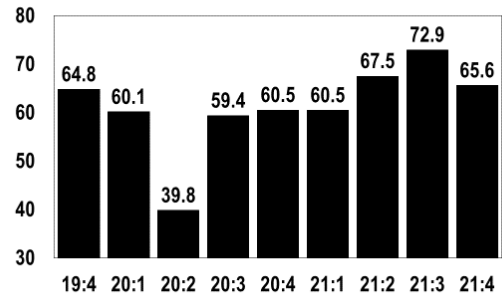
EMPLOYMENT INDEX



COMMODITY PRICE INDEX



NEW ORDERS INDEX



Background and Methodology

The Institute for Supply Management (ISM) conducts a monthly national survey of purchasing managers and publishes the survey results in its *Report on Business*. Such a survey is not available for the state of California. Given the size of our state, and the major role its manufacturing sector plays in the national economy, the A. Gary Anderson Center for Economic Research at Chapman University launched a quarterly survey of California purchasing managers starting in the third quarter of 2002. Similar to the ISM survey, our survey tracks changes in production, employment, new orders, inventories of purchased materials, commodity prices and supplier deliveries. A seasonally adjusted index is computed for each variable except for commodity prices for which no seasonal adjustment is made. Unlike the national survey that tracks the performance of the manufacturing sector in the previous month, the Anderson Center's survey asks the participants to evaluate the expected performance in the coming quarter.

In order to have one single indicator for the performance of the state manufacturing sector, the Anderson Center has developed a Composite Index that is a weighted average of the underlying indices. A value of 50 for the Composite Index shows a general expansion of the manufacturing economy of the state and a value below 50 shows a decline. The industries are classified according to the North American Industry Classification System (NAICS).

**Detailed Results of the Survey of
California Purchasing Managers' Expectations
for the Fourth Quarter of 2021**

In its attempt to present you with a better delivery of the survey results, the A. Gary Anderson Center for Economic Research has calculated an index for every variable in the survey. The "% Better," is added to half of the "% Same," after which a seasonal factor is used to get a seasonally adjusted index for each variable (except commodity prices). A value over 50 for an index indicates growth and a value below 50 indicates a decline. If for example the index increases from 55 to 59, we say that the growth rate is higher than the previous quarter because 59 is bigger than 55. If the index remains at 55, we say that the growth rate remains the same as the previous quarter. If the index decreases from 55 to 52, we say that we still have growth but that the growth rate is lower than the previous quarter because 52 is smaller than 55. Each industry in the manufacturing sector is represented in the survey based on its employment share of total manufacturing employment in the state.

Production: The seasonally adjusted index for production is expected to decrease from 71.2 in the third quarter to 68.9 in the fourth quarter, indicating that production is expected to increase at a lower rate in the fourth quarter. This is the sixth consecutive quarter that the production index has been above 50. Production is expected to increase most rapidly in the following industries: Food; Paper; Printing & Related Support Activities; Plastics & Rubber Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Aerospace Products & Parts; Furniture & Related Products; and Miscellaneous. No industry reported an expected decrease in production.

Production	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2021	46.4	36.2	17.4	29.1	68.9
3 rd Quarter of 2021	55.0	35.9	9.0	46.0	71.2
2 nd Quarter of 2021	55.4	35.4	9.2	46.2	69.3
1 st Quarter of 2021	41.2	41.8	17.0	24.2	62.9

Inventories of Purchased Materials: The seasonally adjusted index for inventories of purchased materials is expected to increase from 61.4 in the third quarter to 61.7 in the fourth quarter, indicating that inventories are expected to increase at a slightly higher rate in the fourth quarter. Inventories of purchased materials are expected to increase most rapidly in the following industries: Food; Paper; Printing & Related Support Activities; Plastics & Rubber Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment (other than Aerospace Products & Parts); Furniture & Related Products; and Miscellaneous. Inventories of purchased materials are expected to decrease most rapidly in the following industries: Apparel; Wood Products; and Nonmetallic Mineral Products.

Inventories of Purchased Materials	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2021	41.1	33.9	24.9	16.2	61.7
3 rd Quarter of 2021	44.7	38.1	17.2	27.5	61.4
2 nd Quarter of 2021	43.1	42.2	14.8	28.3	61.7
1 st Quarter of 2021	32.1	48.5	19.3	12.8	57.3

Commodity Prices: The seasonally unadjusted index for commodity prices is expected to decrease from 93.4 in the third quarter to 89.8 in the fourth quarter, indicating that commodity prices are expected to rise at a lower rate in the fourth quarter. Commodity prices are expected to increase most rapidly in the following industries: Food; Beverage & Tobacco; Textile Mill Products; Apparel; Paper; Printing & Related Support Activities; Petroleum & Coal Products; Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment (other than Aerospace Products & Parts); Aerospace Products & Parts; Furniture & Related Products; and Miscellaneous. No industry reported an expected decrease in commodity prices.

Commodity Prices	% Higher	% Same	% Lower	Net	Index
4 th Quarter of 2021	83.7	12.2	4.1	79.7	89.8
3 rd Quarter of 2021	89.3	8.2	2.5	86.9	93.4
2 nd Quarter of 2021	80.0	19.0	1.0	79.0	89.5
1 st Quarter of 2021	67.1	28.9	4.0	63.1	81.5

Supplier Deliveries: For this variable, an index value over 50 indicates slower deliveries, and an index value under 50 indicates faster deliveries. The seasonally adjusted index for supplier deliveries is expected to increase from 75.5 in the third quarter to 77.9 in the fourth quarter, indicating that supplier deliveries are expected to be slower at a higher rate in the fourth quarter. This is the highest level of the index that has ever been recorded. Supplier deliveries are expected to be slowest in the following industries: Food; Beverage & Tobacco; Textile Mill Products; Apparel; Paper; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment (other than Aerospace Products & Parts); Aerospace Products & Parts; Furniture & Related Products; and Miscellaneous. No industry reported an expectation of faster supplier deliveries.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Seasonally Adjusted Index
4 th Quarter of 2021	61.1	35.2	3.7	57.5	77.9
3 rd Quarter of 2021	55.6	38.9	5.5	50.1	75.5
2 nd Quarter of 2021	50.2	43.1	6.8	43.4	71.2
1 st Quarter of 2021	47.0	44.4	8.5	38.5	70.1

New Orders: The seasonally adjusted index for new orders is expected to decrease from 72.9 in the third quarter to 65.6 in the fourth quarter, indicating that new orders are expected to increase at a lower rate in the fourth quarter. New orders are expected to increase most rapidly in the following industries: Food; Apparel; Paper; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Nonmetallic Mineral Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Furniture & Related Products; and Miscellaneous. The Textile Mill Products industry reported an expected decrease in new orders.

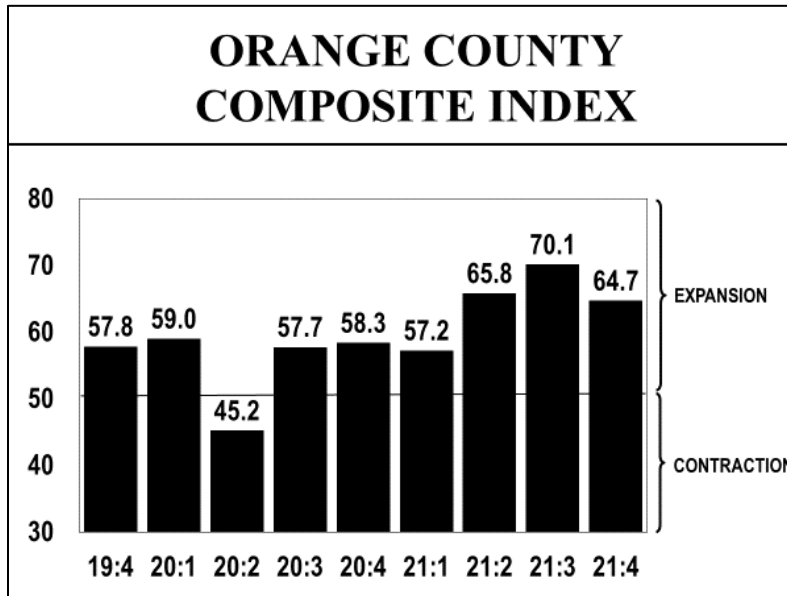
New Orders	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2021	40.3	42.7	17.0	23.3	65.6
3 rd Quarter of 2021	58.7	30.9	10.4	48.2	72.9
2 nd Quarter of 2021	50.3	41.9	7.8	42.5	67.5
1 st Quarter of 2021	37.5	45.2	17.3	20.1	60.5

Employment: The seasonally adjusted index for employment is expected to decrease from 65.4 in the third quarter to 64.5 in the fourth quarter, indicating that employment in manufacturing is expected to increase at a lower rate in the fourth quarter. Employment is expected to increase most rapidly in the following industries: Food; Paper; Printing & Related Support Activities; Petroleum & Coal Products; Chemicals; Plastics & Rubber Products; Wood Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Aerospace Products & Parts; Furniture & Related Products; and Miscellaneous. No industry reported an expected decrease in employment.

Employment	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2021	34.4	55.7	10.0	24.4	64.5
3 rd Quarter of 2021	43.2	47.5	9.3	33.9	65.4
2 nd Quarter of 2021	31.7	62.6	5.7	25.9	61.9
1 st Quarter of 2021	22.9	65.1	12.0	11.0	55.8

Orange County's Manufacturing Survey

The Orange County manufacturing sector's Composite Index decreased from 70.1 in the third quarter to 64.7 in the fourth quarter, indicating that the county's manufacturing economy is expected to expand at a lower rate in the fourth quarter.



The seasonally adjusted index for production decreased from 72.2 in the third quarter to 62.5 in the fourth quarter, indicating that production is expected to increase at a substantially lower rate in the fourth quarter. The seasonally adjusted index for supplier deliveries increased to a new high of 80.5, indicating that supplier deliveries are expected to slow at a higher rate in the fourth quarter. Like production, new orders and employment are expected to increase at a lower rate compared to the third quarter.

The index for the **non-durable goods industries** decreased from 71.1 in the third quarter to 63.3 in the fourth quarter, indicating that these industries are expected to expand at a lower rate in the fourth quarter. The index for production decreased from 73.8 to 58.8, indicating that production is expected to increase at a substantially lower rate. The index for the **high-tech industries** decreased from 74.9 to 71.2, indicating that these industries are expected to expand at a lower rate. The index for production decreased from 79.0 to 74.7 indicating that production is expected to increase at a lower rate. The index for inventories of purchased materials increased from 59.6 to 68.9 indicating that inventories are expected to increase at a higher rate. The index for the **durable goods industries other than high-tech** decreased from 68.3 to 62.2 indicating that the durable goods industries other than high-tech are expected to expand at a lower rate. The index for production decreased from 70.2 to 58.4 indicating that production is expected to increase at a substantially lower rate. The index for supplier deliveries for all three industry groups increased to new record highs indicating that supplier deliveries are expected to slow at a higher rate in the fourth quarter.

ABOUT THE ANDERSON CENTER FOR ECONOMIC RESEARCH

The A. Gary Anderson Center for Economic Research (ACER) was established in 1979 to provide data, facilities and support in order to encourage the faculty and students at Chapman University to engage in economic and business research of high quality, and to disseminate the results of this research to the community.

ANNUAL SCHEDULE OF CONFERENCES AND PRESS RELEASES

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|-----------------|---|
| JANUARY | <ul style="list-style-type: none">› Economic Forecast Conferences for the Inland Empire› California Purchasing Managers Survey |
| APRIL | <ul style="list-style-type: none">› California Purchasing Managers Survey |
| JUNE | <ul style="list-style-type: none">› Economic Forecast Update Conference for the U.S, California and Orange County |
| JULY | <ul style="list-style-type: none">› California Purchasing Managers Survey |
| OCTOBER | <ul style="list-style-type: none">› California Purchasing Managers Survey |
| DECEMBER | <ul style="list-style-type: none">› Economic Forecast Conference for the U.S., California and Orange County |