



A. Gary Anderson Center for Economic Research

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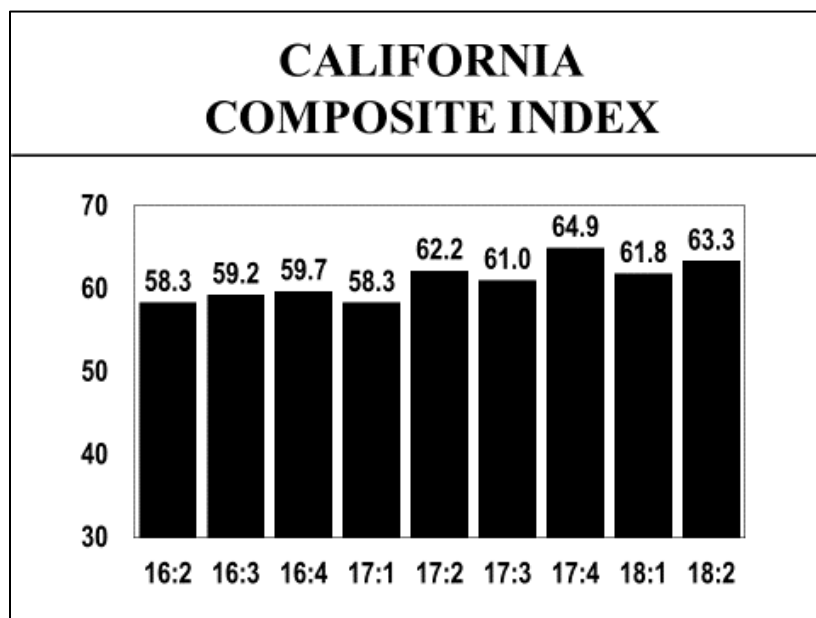
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MANUFACTURING SECTOR REBOUNDS

ORANGE, CA — According to a survey of purchasing managers, the California manufacturing economy is expected to expand at a higher rate in the second quarter compared to the first quarter. The California Composite Index, measuring overall manufacturing activity, increased from 61.8 in the first quarter to 63.3 in the second quarter, indicating faster growth. Production is expected to grow at a higher rate. Supplier deliveries will proceed at the slowest speed since the fourth quarter of 2005. And commodity prices will rise at a high rate not seen since the second quarter of 2011. The respondents have commented on the steep increase in commodity prices, the increase in wages to current employees, the difficulties in hiring new employees and the fear from the consequences of raising tariffs on steel and aluminum.



California Manufacturing at a Glance

Composite Index	63.3	Growing at a higher rate
Production	67.0	Growing at a higher rate
Inventories of purchased materials	58.0	Growing at a slower rate
Commodity prices	76.2	Rising at a higher rate
Supplier deliveries	55.6	Slowing at a higher rate
New orders	65.4	Growing at a same rate
Employment	57.6	Growing at a higher rate

Performance by Industry Group

The index for the **non-durable goods industries** increased from 58.2 in the first quarter to 64.5 in the second quarter, indicating a higher rate of growth in the second quarter. Production, inventories of purchased materials, and new orders are expected to increase at a higher rate in the second quarter. Supplier deliveries are expected to be slower. And the commodity price index is at its highest level since the second quarter to 2012.

The index for the **durable goods industries** decreased from 64.0 in the first quarter to 62.6 in the second quarter, indicating a lower rate of growth in the second quarter. Production, inventories of purchased materials, and new orders increased at a lower rate in the second quarter. Supplier deliveries are expected to be at their slowest rate, and commodity prices at their highest since we started compiling the indices in the second quarter of 2014.

Comments by the Purchasing Managers

Our total sales are up approximately 30% and volumes are up 23% YOY. While we expect Q3 & Q4 to be up for us, they will be below Q1 & Q2. That is the nature of our agriculture business. It has still been a very good, borderline excellent, year for us. (Food)

Cost of doing business in California is still increasing. Cost of sales, labor force, bringing on new employees at higher minimums forces raising wages of current employees. This in turn increases payroll tax expenses, workers comp - 4% increase in cost of sales over last year just to keep pace. Still having to do more with less people to stay competitive. Evaluating all orders for price increases. (Textile Mill Products)

We have been looking at a trend where orders have been on the rise. (Wood Products)

Backlog strong at least until June. Raw materials prices increasing as paper prices increase and impact of higher fuel costs. Difficulty in finding qualified employees for manufacturing work. (Paper)

With the added cost of material we will have no choice but to pass that cost along to our customers. This will make it more difficult to retain customers. I have already heard that one of our large paper suppliers is laying off a third of their outside print media sales force. This could be due to online sales and the closures of store fronts across the country resulting in less printed advertising. (Printing & Related Support Activities)

Job growth remains strong which has created a shortage of qualified employees and in turn increased salary demands. Weak dollar is also having an impact on plastics as a result of higher oil prices. (Chemicals)

Commodity prices continue to increase along with lead-times. (Plastics & Rubber Products)

Most material prices, including transport, are increasing at the beginning of the second quarter which doesn't seem to slow things down with our new business. Material suppliers are allowing pre-orders for later deliveries to ensure material is on-hand when our orders are released - which helps us to meet our customers' demands. With influx of new business, purchased new automation machinery in order to keep up with our own orders. Additional employees added in several departments. Overall, we see 2018 beating out our banner year of 2017. (Nonmetallic Mineral Products)

Our business will be impacted by the new Section 232 tariffs on aluminum. Prices for pure aluminum, one of our raw materials, have already risen by 10%, even if the material is not being imported. Someone is making money already on the tariffs. We expect our offshore customers to also be impacted, but that impact will not be known for a few months. (Primary Metals)

We're all wondering what the effects of the tariff will be for all businesses. We're dependent on the commodities market (steel, aluminum and stainless steel) as a job shop in the sheet metal and CNC machining arena. Prices have gone up dramatically already in 2018. (Fabricated Metal Products)

Employment could be slightly higher except the owner refuses to pay more than minimum wage to new employees or give raises to critical staff. Apparently he hasn't heard that the tax breaks are supposed to trickle down to the workers. We continue to lose employees to others willing to pay higher wages. (Machinery)

Tariffs on specialty steels no longer manufactured in the USA and or non-competitively priced in the USA will have a significant impact. Will import regardless, not available domestically, and or still over-priced domestically. Cost increase will be passed to USA customers. (Computer & Electronic Products)

Lead times from suppliers are getting longer and prices are going up. Finding quality employees remains to be difficult. (Electrical Equipment, Appliance & Components)

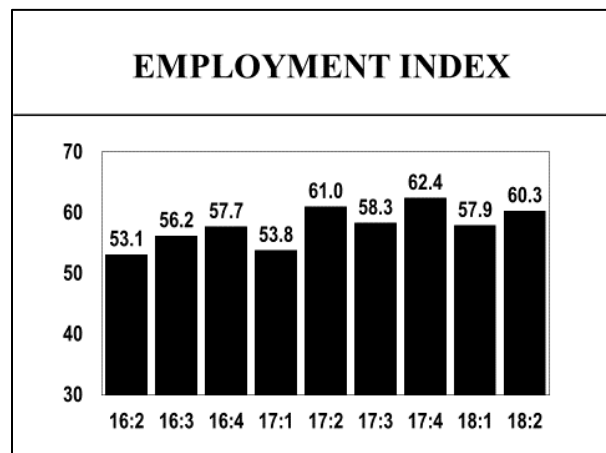
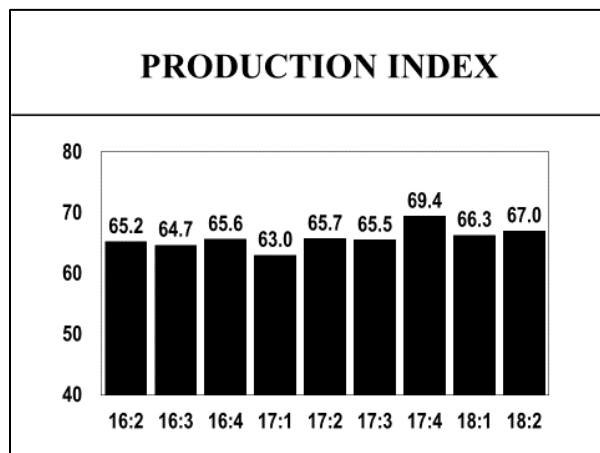
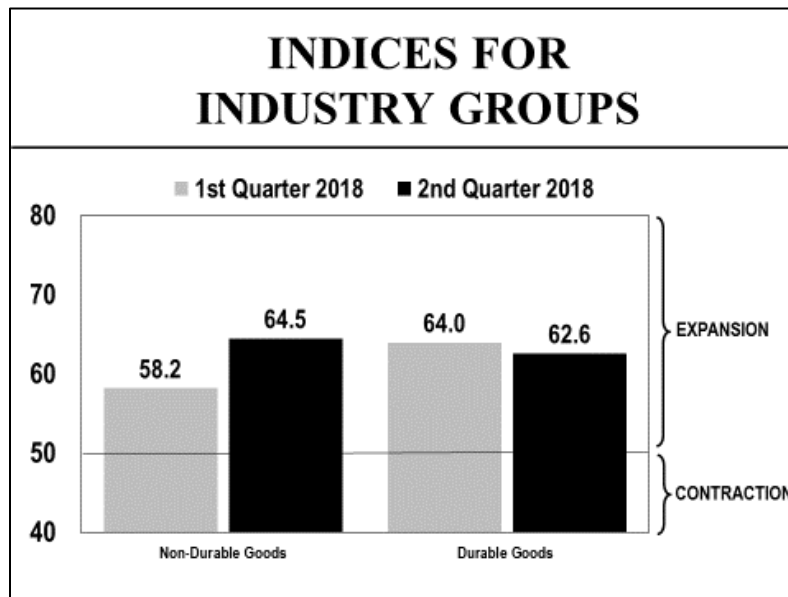
We have received in the 1st quarter, increases on most commodity items from rubber, poly plastic, brass, steel, zinc, ranging from 3% all the way up to 15% depending upon component. (Transportation Equipment)

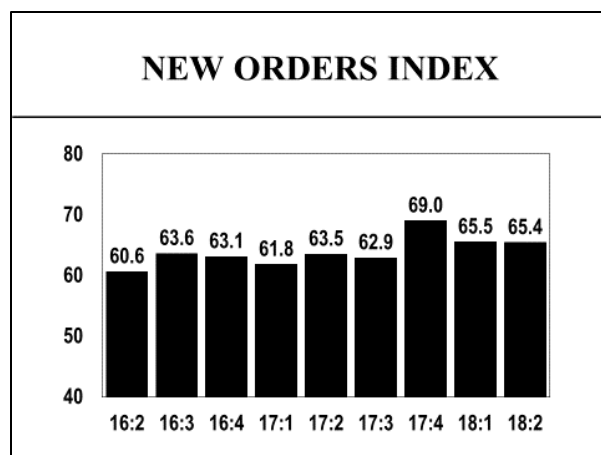
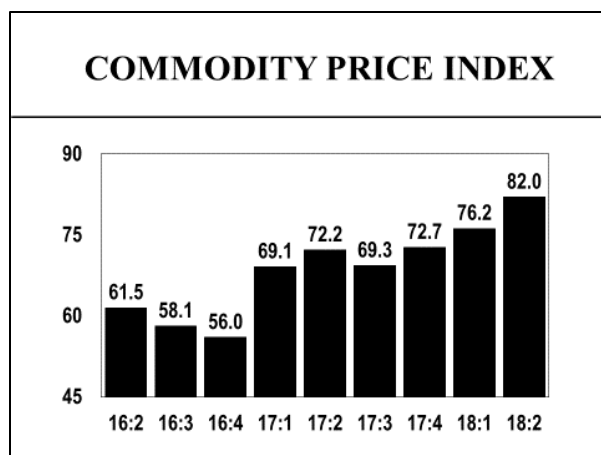
We have been experiencing price hikes from many of our vendors: foam prices due to chemical increases, metal prices due to the new tariffs. Our metal vendors are only able to guarantee pricing for about 5 days. I have talked to 2 factory owners (in the furniture industry), who have decided to shut down their operations, due to turbulent times.(Furniture & Related Products)

The business climate in Southern California continues to decline.... Many new regulation have been introduced to our industry in 2018 and it's really causing our expenses to rise. Prices on materials have gone up as well and we're noticing that our customers are paying us slower as well. All these signs have been indicators in the past of a slowing economy, so we'll see how the rest of the year goes. California continues to be one of the worst states to operate a business in but we don't see that changing

anytime soon because there aren't any business friendly lawmakers in office at this time.
(Miscellaneous)

It's getting tougher and tougher to hire any good tool makers, old ones are retiring and the new generation of kids want no part of working behind a machine. (Aerospace Products & Parts)





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. Except for commodity prices and inventories of purchased materials, a seasonally adjusted index is computed for each variable.

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 Second Quarter of 2018

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 increase from 66.3 in the first quarter to 67.0 in the second quarter, indicating that production is expected to increase at a higher rate in the second quarter. This is the thirty sixth consecutive quarter that the production index has been above 50. Production is expected to increase most rapidly in the following industries: Food; 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; Furniture & Related Products; and Miscellaneous. No industry reported an expected decrease in production.

Production	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
2 nd Quarter of 2018	56.3	30.9	12.8	43.6	67.0
1 st Quarter of 2018	46.7	37.4	15.9	30.8	66.3
4 th Quarter of 2017	45.1	38.6	16.3	28.8	69.4
3 rd Quarter of 2017	47.3	39.0	13.7	33.7	65.5

Inventories of Purchased Materials: The seasonally adjusted index for inventories of purchased materials is expected to decrease from 58.2 in the first quarter to 57.4 in the second quarter, indicating that inventories are expected to increase at a lower rate in the second quarter. Inventories of purchased materials are expected to increase most rapidly in the following industries: Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Transportation Equipment; and Miscellaneous. No industry has reported an expected decrease in inventories of purchased materials.

Inventories of Purchased Materials	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
2 nd Quarter of 2018	38.6	43.3	18.1	20.4	57.4
1 st Quarter of 2018	34.4	45.6	19.9	14.5	58.2
4 th Quarter of 2017	37.2	41.7	21.0	16.2	62.2
3 rd Quarter of 2017	36.2	43.7	20.1	16.2	56.0

Commodity Prices: The seasonally unadjusted index for commodity prices is expected to increase from 76.2 in the first quarter to 82.0 in the second quarter, indicating that commodity prices are expected to rise at a higher rate in the second quarter. Commodity prices are expected to increase most rapidly in the following industries: Food; 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; Furniture & Related Products; and Miscellaneous. No industry reported an expected decrease in commodity prices.

Commodity Prices	% Higher	% Same	% Lower	Net	Index
2 nd Quarter of 2018	66.1	31.8	3.2	2.1	82.0
1 st Quarter of 2018	55.5	41.3	3.2	52.3	76.2
4 th Quarter of 2017	51.1	43.2	5.7	45.5	72.7
3 rd Quarter of 2017	42.9	52.9	4.2	38.6	69.3

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 55.5 in the first quarter to 59.1 in the second quarter, indicating that supplier deliveries are expected to be slower in the second quarter. Supplier deliveries are expected to be slowest in the following industries: Food; Printing & Related Support Activities; Chemicals; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Transportation Equipment; and Furniture & Related Products. No industry reported an expectation of faster supplier deliveries.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Seasonally Adjusted Index
2 nd Quarter of 2018	27.0	64.0	9.0	18.0	59.1
1 st Quarter of 2018	22.1	66.2	11.7	10.4	55.5
4 th Quarter of 2017	25.5	64.0	10.5	14.9	56.8
3 rd Quarter of 2017	19.6	70.8	9.6	9.9	55.3

New Orders: The seasonally adjusted index for new orders is expected to decrease from 65.5 in the first quarter to 65.4 in the second quarter, indicating that new orders are expected to grow at the same rate as in the first quarter. New orders are expected to increase most rapidly in the following industries: Food; Textile Mill Products; Apparel; Paper; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Electrical Equipment, Appliance & Components; Transportation Equipment; and Miscellaneous. No industry reported an expected decrease in new orders.

New Orders	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
2 nd Quarter of 2018	51.8	36.4	11.8	29.5	65.4
1 st Quarter of 2018	47.0	35.6	17.4	29.5	65.5
4 th Quarter of 2017	46.3	35.9	17.8	28.6	69.0
3 rd Quarter of 2017	45.2	37.1	17.6	27.6	62.9

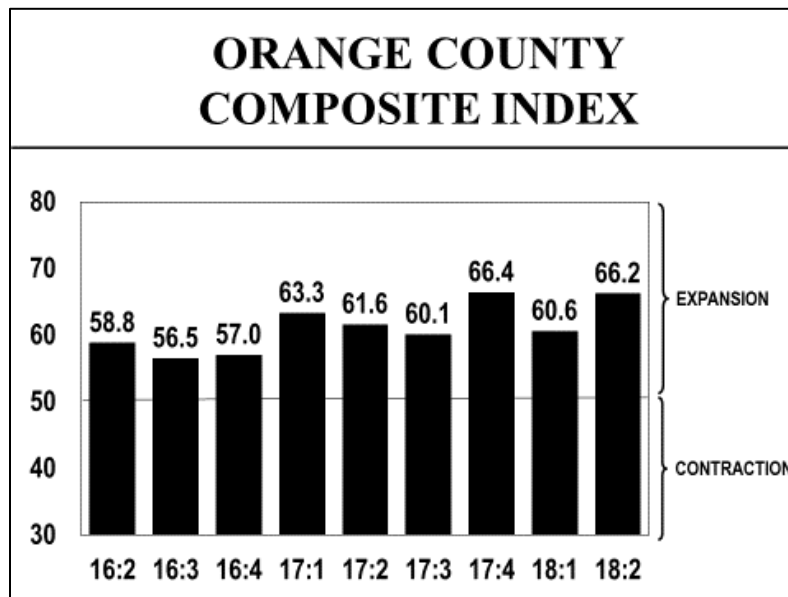
Employment: The seasonally adjusted index for employment is expected to increase from 57.9 in the first quarter to 60.3 in the second quarter, indicating that employment in manufacturing is expected to improve in the second quarter. Employment is expected to increase most rapidly in the following industries: Paper; Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Transportation Equipment; and Miscellaneous. No industry reported an expected decrease in employment.

Employment	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
2 nd Quarter of 2018	35.2	53.7	11.0	24.2	60.3
1 st Quarter of 2018	26.9	61.2	11.9	15.0	57.9
4 th Quarter of 2017	28.5	62.2	9.3	19.2	62.4
3 rd Quarter of 2017	30.3	58.6	11.1	19.2	59.3

High-Tech Industries: The high-tech industries include the following: Computer & Electronic Products, and Aerospace Products & Parts. The high-tech industries currently employ about 354,200 employees, amounting to 27.0% of total manufacturing employment in the state. The percent of purchasing managers in the Computer & Electronic Products industry reporting higher expected production decreased from 50.3% in the first quarter to 43.9% in the second quarter. Additionally, the percent of purchasing managers reporting higher expected employment in these industries also decreased from 29.8% in the first quarter to 26.6% in the second quarter.

Orange County's Manufacturing Survey

The Orange County manufacturing sector's Composite Index increased from 60.6 in the first quarter to 66.2 in the second quarter, indicating that the county's manufacturing economy is expected to grow at a faster rate in the second quarter. The Orange County index is now above California's index.



The seasonally adjusted index for production increased significantly from 62.5 in the first quarter to 70.1 in the second quarter, indicating that production is expected to grow at a higher rate in the second quarter. This is the thirty sixth consecutive quarter that the production index has been above 50. The seasonally adjusted index for new orders also increased significantly from 61.0 in the first quarter to 69.2 in the second quarter, indicating that new orders are expected to grow at a higher rate in the second quarter.

The index for the **non-durable goods industries** increased significantly from 62.8 in the first quarter to 73.4 in the second quarter, indicating that the growth rate in these industries is expected to be much higher in the second quarter. The index for new orders jumped from 62.5 in the first quarter to 77.8 in the second quarter indicating a markedly higher rate of growth. The index for the **durable goods industries** increased more modestly from 59.8 in the first quarter to 63.7 in the second quarter, indicating that the durable goods industries are expected to grow at a higher rate in the second quarter. Production and new orders are also expected to grow at a higher rate.

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 |
| MARCH | <ul style="list-style-type: none">▸ California Consumer Sentiment Survey |
| APRIL | <ul style="list-style-type: none">▸ California Purchasing Managers Survey |
| JUNE | <ul style="list-style-type: none">▸ California Consumer Sentiment Survey▸ Economic Forecast Update Conference for the U.S., California and Orange County |
| JULY | <ul style="list-style-type: none">▸ California Purchasing Managers Survey |
| SEPTEMBER | <ul style="list-style-type: none">▸ California Consumer Sentiment 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▸ California Consumer Sentiment Survey |