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Manufacturing Growth is Moderating

Anderson Center for Economic Research

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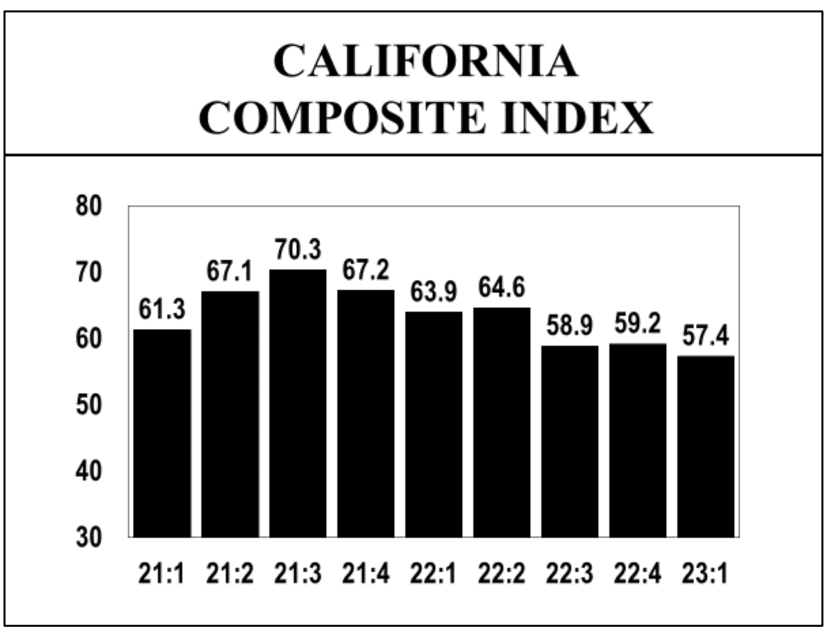
PRESS RELEASE

MANUFACTURING GROWTH IS MODERATING

ORANGE, CA — Based on a survey of purchasing managers, the California Composite Index, measuring overall manufacturing activity in the state, decreased from 59.2 in the fourth quarter of 2022 to 57.4 in the first quarter of this year, indicating that the manufacturing sector is expected to grow at a lower rate this first quarter. “Purchasing managers are expecting a rough 2023. Some see supply chain problems easing in their industry. But although container costs have gone down, domestic transportation costs have not. Difficulty in finding qualified workers is still a major concern in most industries. Purchasing managers are finding a slowdown by their customers which they believe will result in higher inventories,” said Dr. Raymond Sfeir, director of the purchasing managers’ survey. Commodity prices are expected to increase at a lower rate, and supplier deliveries are slowing at a lower rate. Although new orders are expected to grow at a lower rate compared to the fourth quarter of 2022, production is expected to grow at a higher rate partly due to filling backorders. The high-tech sector is expected to perform better than the rest of the manufacturing sectors.



California Manufacturing at a Glance

Composite Index	57.4	Increasing at a lower rate
Production	63.4	Increasing at a higher rate
Inventories of purchased materials	63.4	Increasing at a higher rate
Commodity prices	68.4	Rising at a lower rate
Supplier deliveries	55.3	Slowing at a slower rate
New orders	55.1	Increasing at a lower rate
Employment	52.2	Increasing at a lower rate

Performance by Industry Group

The index for the **non-durable goods industries** decreased from 56.7 in the fourth quarter of 2022 to 55.6 in the first quarter of 2023, indicating that these industries are expanding at a lower rate. Production and commodity prices are expected to grow at a lower rate. New orders and inventories of purchased materials are expected to grow at a higher rate. Supplier deliveries are expected to slow slightly in the first quarter of this year.

The **high-tech industries** include the following: Computer & Electronic Products, and Aerospace Products & Parts. The high-tech industries currently employ about 368,400 employees, amounting to 28% of total manufacturing employment in the state. The index for the high-tech industries decreased from 66.6 in the fourth quarter of 2022 to 60.5 in the first quarter of 2023, indicating a lower growth rate in the first quarter. Production is expected to grow at a higher rate. Commodity prices, new orders and employment are expected to grow at a lower rate. Supplier deliveries are expected to be slowing at a lower rate as the index decreased from 70.6 in the fourth quarter of 2022 to 63.7 in the first quarter of 2023.

The index for the **durable goods industries other than high-tech** decreased from 56.0 in the fourth quarter of 2022 to 54.3 in the first quarter of 2023, indicating a lower growth rate in these industries. Production is expected to grow at a higher rate in the first quarter. Commodity prices, new orders and employment are expected to grow at a lower rate. Supplier deliveries are expected to be slowing at a lower rate as the index decreased from 55.4 in the fourth quarter of 2022 to 50.8 in the first quarter of 2023.

Comments by the Purchasing Managers

Recession is looming. I would say unavoidable due to commodity price increases and labor wage increases. (Food)

We need to deal with Lunar New Year. Our inventory levels will be higher through the first quarter as we must take into consideration the 4-5 weeks of no shipments from our vendors in China. Exchange Rate - we are seeing corresponding price reductions as I am sure everyone else is.... (Textile Mill Products)

Due to inflation people are not spending on clothing. (Apparel)

We slow in the first quarter as a company. Next year will be extremely challenging as we move from goods to services. The build-up in inventory will be extended as we will have to deal with the wrong inventory. Raincoats in sunshine won’t sell well! Through the next six months, we will have to purge the wrong inventory through. Next six months will be bumpy! (Paper)

Supply chain is broken. Energy prices continue to wreak havoc on production costs and material deliveries. Higher interest rates are causing customers to scale down first quarter orders. (Printing & Related Support Activities)

Our business is involved in oil and gas extraction. Certain edicts and policies of California governor could have a severe negative effect on operations. This is not fully understood at this moment but is likely to have a sever negative outcome by the second quarter of 2023. (Petroleum & Coal Products)

Based on our customers' forecast, we are anticipating an 18-20% slowdown in the first quarter. We have planned layoffs starting next week. Add the 2023 minimum wage increase, we plan on keeping our staff well below the 2022 roster. (Chemicals)

Leaner times ahead. Overstock is built and will drive management decisions. (Plastics & Rubber Products)

New home construction is depressed, locally and nationally. (Wood Products)

This quarter, we still had trouble getting up to speed with a lack of personnel. That has been improving so next quarter we should be more fully staffed and able to better produce on our backlog. (Nonmetallic Mineral Products)

Our order book is strong. Our staffing levels are improving, but still short on manpower. Skill level of recent new hires expected to improve which in turn will improve our efficiencies and increase production levels. (Primary Metals)

Hiring new employees is a full-time job in itself. So many candidates are unreliable. New work seems to be picking up, some companies we haven't heard from since 2020 are coming back around with new opportunities. (Fabricated Metal Products)

Electronic components from China have long lead times. These components are not available anywhere else. This is due to Covid restrictions. Labor rates are going up due to inflation. Employees are expecting larger raises. May have to reduce personnel to cover the higher wages. (Machinery)

Component shortages and chips shortages continue to affect vendor deliveries and pricing. (Computer & Electronic Products)

For wire production - supply chain disruptions for some alloys and metals have improved. Nickel and stainless-steel alloys are still a problem. (Electrical Equipment, Appliance & Components)

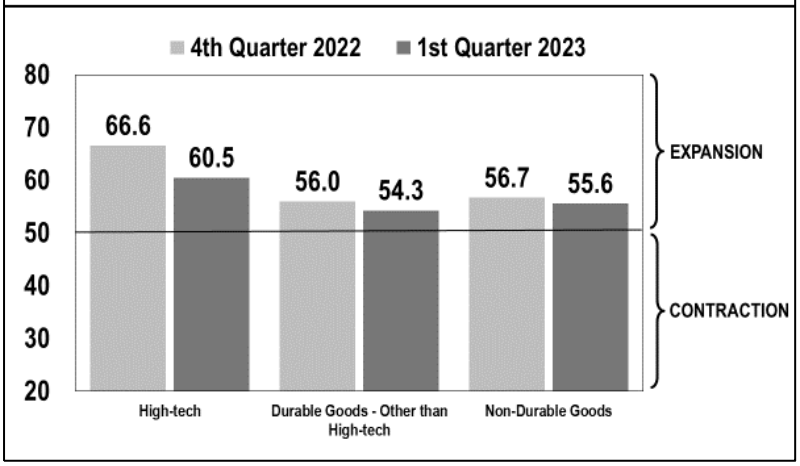
In the fourth quarter we saw continued price drops in the electric galvanized and infrastructure steel markets. Higher interest rates and economic uncertainty into 2023 have contributed to a slow-down in new orders. Ships at the harbors have now been cleared. Slow-down in the economy has prices dropping just to push products out. Into 2023 we anticipate a steady flow of business but a slow-down in new orders. (Transportation Equipment)

Our industry is currently experiencing a slow-down in new business. Furniture manufacturers are shipping faster than they have since Covid began. We are also seeing more experienced people looking for work, which is a blessing. But could also mean others in our industry are being more affected by this slow-down in business. (Furniture & Related Products)

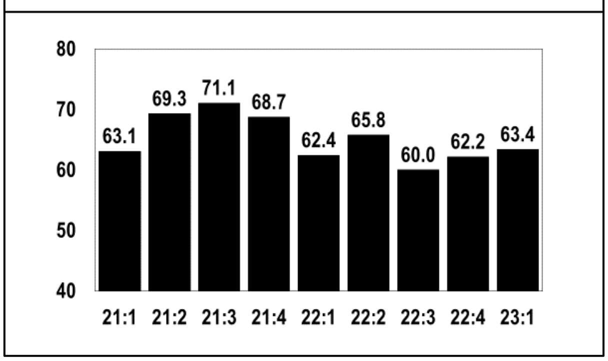
Still having issues with vendor deliveries due to a break down in raw components (copper, resins). Lead times well over 52 weeks for anything custom product. Fans and motors have a lead time of 60 weeks or longer. Eastern Europe parts are starting to trickle in due to relocation of their production facilities. Surprisingly material from Mexico is now starting to have issues, which I expect is due to the slowdown of material from China. Prices in our industry (Medical Devices) have doubled or tripled which requires us to pass on to our customers. (Miscellaneous)

Some new aircrafts are in production. Orders will go down this next quarter but will increase as the year proceeds. (Aerospace Products & Parts)

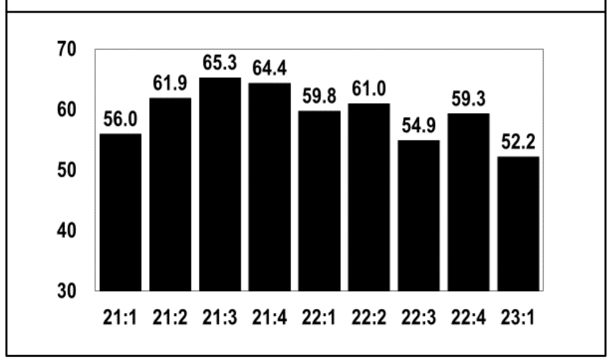
INDICES FOR INDUSTRY GROUPS



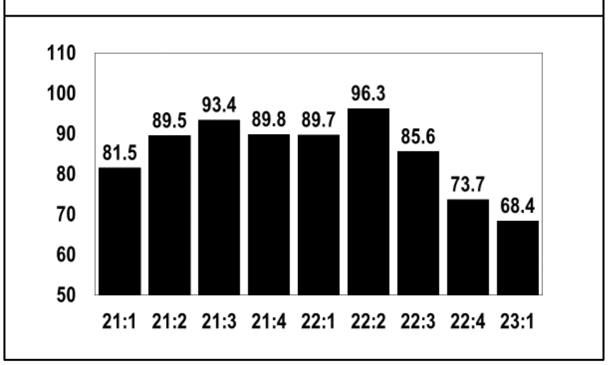
PRODUCTION INDEX



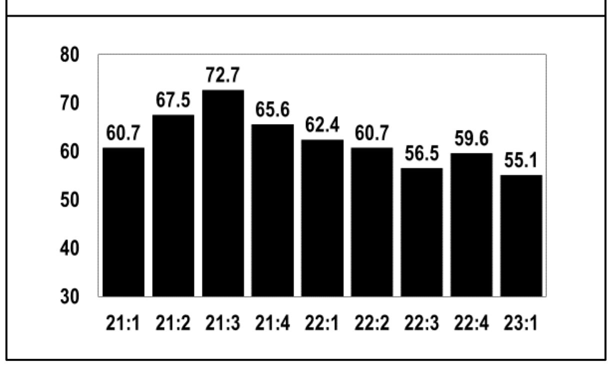
EMPLOYMENT INDEX



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 First Quarter of 2023

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 62.2 in the fourth quarter of 2022 to 63.4 in the first quarter of 2023, indicating that production is expected to increase at a higher rate in the first quarter. This is the eleventh 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; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Aerospace Products & Parts; and Miscellaneous. Production is expected to decrease most rapidly in the following industries: Apparel; Paper; Printing & Related Support Activities; and Wood Products.

Production	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
1st Quarter of 2023	43.1	38.5	18.4	24.6	63.4
4th Quarter of 2022	37.3	42.2	20.5	16.9	62.2
3rd Quarter of 2022	40.3	42.7	17.1	23.2	60.0
2nd Quarter of 2022	52.6	33.6	13.8	38.8	65.8

Inventories of Purchased Materials: The seasonally adjusted index for inventories of purchased materials is expected to increase from 55.4 in the fourth quarter of 2022 to 63.4 in the first quarter of 2023, indicating that inventories are expected to increase at a higher rate in the first quarter. Inventories of purchased materials are expected to increase most rapidly in the following industries: Food; Textile Mill Products; Plastics & Rubber Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Computer & Electronic Products; Aerospace Products & Parts; Furniture & Related Products; and Miscellaneous. Inventories of purchased materials are expected to decrease most rapidly in the following industries: Apparel; Paper; Wood Products; and Electrical Equipment, Appliance & Components.

Inventories of Purchased Materials	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
1st Quarter of 2023	43.1	38.5	18.4	24.6	63.4
4th Quarter of 2022	31.3	41.8	26.9	4.4	55.4
3rd Quarter of 2022	33.5	43.7	22.8	10.7	53.4
2nd Quarter of 2022	45.1	37.4	17.5	27.5	61.3

Commodity Prices: The seasonally unadjusted index for commodity prices is expected to decrease from 73.7 in the fourth quarter of 2022 to 68.4 in the first quarter of 2023, indicating that commodity prices are expected to rise at a lower rate in the first quarter of this year. Commodity prices are expected to increase most rapidly in the following industries: Food; Beverage & Tobacco; Apparel; Printing & Related Support Activities; Chemicals; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Furniture & Related Products; and Miscellaneous. Commodity prices are expected to decrease most rapidly in the following industries: Paper; and Wood Products.

Commodity Prices	% Higher	% Same	% Lower	Net	Index
1st Quarter of 2023	52.3	32.1	15.6	36.8	68.4
4th Quarter of 2022	60.6	26.3	13.1	47.4	73.7
3rd Quarter of 2022	76.1	18.9	5.0	71.1	85.6
2nd Quarter of 2022	92.9	6.7	0.4	92.5	96.3

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 decrease from 57.9 in the fourth quarter of 2022 to 55.3 in the first quarter of 2023, indicating that supplier deliveries are expected to be slower at a lower rate in the first quarter. Supplier deliveries are expected to be slowest in the following industries: Food; Textile Mill Products; Petroleum & Coal Products; Fabricated Metal Products; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Aerospace Products & Parts; and Miscellaneous. The Apparel industry reported an expectation of faster supplier deliveries.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Seasonally Adjusted Index
1st Quarter of 2023	25.1	59.3	15.6	9.5	55.3
4th Quarter of 2022	28.0	60.9	11.1	16.9	57.9
3rd Quarter of 2022	45.8	46.5	7.7	38.1	69.4
2nd Quarter of 2022	58.8	35.4	5.8	52.9	76.0

New Orders: The seasonally adjusted index for new orders is expected to decrease from 59.6 in the fourth quarter of 2022 to 55.1 in the first quarter of 2023, indicating that new orders are expected to increase at a lower rate in the first quarter. New orders are expected to increase most rapidly in the following industries: Food; Beverage & Tobacco; Printing & Related Support Activities; Petroleum & Coal Products; Plastics & Rubber Products; Primary Metals; Fabricated Metal Products; and Computer & Electronic Products. New orders are expected to decrease most rapidly in the following industries: Paper; Chemicals; Wood Products; Nonmetallic Mineral Products; Electrical Equipment, Appliance & Components; and Miscellaneous.

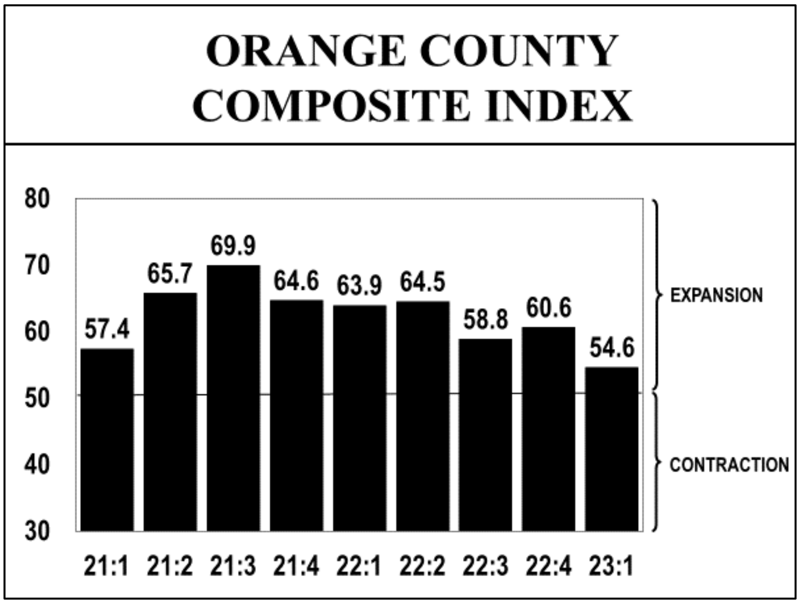
New Orders	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
1st Quarter of 2023	34.7	39.7	25.6	9.1	55.1
4th Quarter of 2022	34.7	42.6	22.6	12.1	59.6
3rd Quarter of 2022	34.6	46.1	19.4	15.2	56.5
2nd Quarter of 2022	40.9	46.3	12.8	28.1	60.7

Employment: The seasonally adjusted index for employment is expected to decrease from 59.3 in the fourth quarter of 2022 to 52.2 in the first quarter of 2023, indicating that employment in manufacturing is expected to grow at a lower rate in the first quarter. Employment is expected to increase most rapidly in the following industries: Paper; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Transportation Equipment (other than Aerospace Products & Parts); Aerospace Products & Parts; and Furniture & Related Products. Employment is expected to decrease most rapidly in the following industries: Food; Textile Mill Products; Apparel; Wood Products; Computer & Electronic Products; Electrical Equipment, Appliance & Components; and Miscellaneous.

Employment	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
1st Quarter of 2023	22.9	57.7	19.4	3.5	52.2
4th Quarter of 2022	26.0	62.6	11.4	14.6	59.3
3rd Quarter of 2022	27.4	57.9	14.8	12.6	54.9
2nd Quarter of 2022	34.9	54.2	10.9	24.1	61.0

Orange County's Manufacturing Survey

The Orange County manufacturing sector's Composite Index decreased from 60.6 in the fourth quarter of 2022 to 54.6 in the first quarter of 2023, indicating that the county's manufacturing economy is expected to expand at a lower rate in the first quarter of this year.



The seasonally adjusted index for production decreased from 64.3 in the fourth quarter of 2022 to 61.0 in the first quarter of 2023, indicating that production is expected to increase at a lower rate in the first quarter. The seasonally adjusted index for inventories of purchased materials decreased from 60.2 to 54.3 indicating that inventories will grow at a lower rate. The supplier deliveries index dropped below 50 indicating that deliveries will be faster in the first quarter. New orders and employment are expected to grow at a lower rate. The seasonally unadjusted index for commodity prices is expected to decrease from 74.9 to 70.0 indicating that commodity prices are expected to rise at a lower rate.

The index for the **non-durable goods industries** decreased from 58.9 in the fourth quarter of 2022 to 53.3 in the first quarter of 2023, indicating that these industries are expected to expand at a lower rate in the first quarter. The index for production decreased from 59.5 to 58.2, indicating that production is expected to increase at a lower rate. The employment index decreased from 54.7 to 44.6 indicating that employment will decrease in the first quarter. The index for the **high-tech industries** decreased from 67.5 to 63.3, indicating that these industries are expected to expand at a lower rate. The index for supplier deliveries decreased indicating that deliveries will slow at a lower rate. The index for commodity prices decreased from 88.6 to 79.6 indicating that commodity prices are expected to rise at a lower rate. The index for the **durable goods industries other than high-tech** decreased from 58.7 to 51.2 indicating that the durable goods industries other than high-tech are expected to expand at a lower rate. The index for supplier deliveries decreased from 53.8 to 41.4 indicating that deliveries will be faster in the first 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

JANUARY	‣ Economic Forecast Conferences for the Inland Empire ‣ California Purchasing Managers Survey
APRIL	‣ California Purchasing Managers Survey
JUNE	‣ Economic Forecast Update Conference for the U.S, California and Orange County
JULY	‣ California Purchasing Managers Survey
OCTOBER	‣ California Purchasing Managers Survey
DECEMBER	‣ Economic Forecast Conference for the U.S., California and Orange County