



A. Gary Anderson Center for Economic Research

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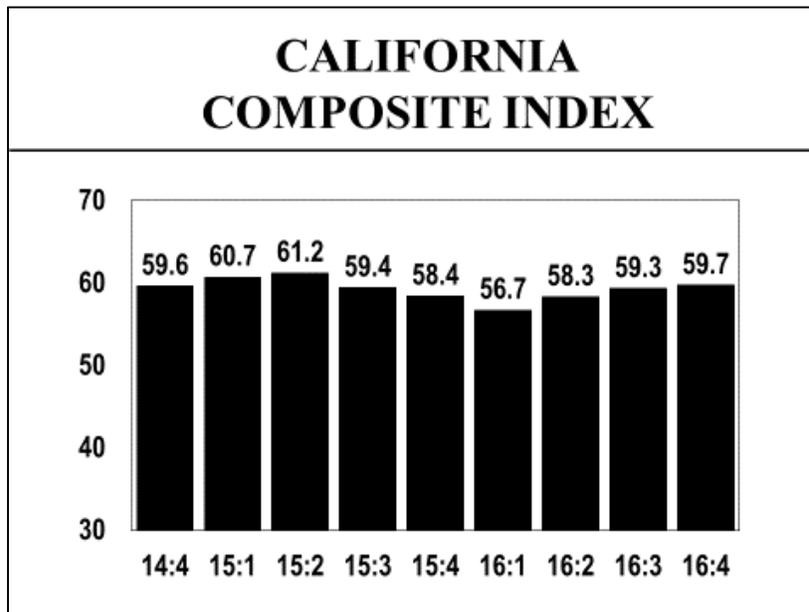
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STEADY GROWTH IN MANUFACTURING SECTOR

ORANGE, CA — According to a survey of purchasing managers, the California manufacturing economy is expected to grow at a slightly faster pace in the fourth quarter compared to the third quarter. The California Composite Index, measuring overall manufacturing activity, increased from 59.3 in the third quarter to 59.7 in the fourth quarter, indicating expansion but at a faster pace. This is the third consecutive increase in the growth rate since the first quarter of 2016. Production and inventories of purchased materials are expected to grow at a higher growth rate compared to the third quarter, while commodity prices are expected to increase at a lower rate.



California Manufacturing at a Glance

Composite Index	59.7	Growing at a higher rate
Production	65.8	Growing at a higher rate
Inventories of purchased materials	57.2	Growing at a higher rate
Commodity prices	56.0	Growing at a slower rate
Supplier deliveries	49.2	Slower
New orders	63.2	Growing at a slower rate
Employment	57.9	Growing at a higher rate

Performance by Industry Group

The index for the **non-durable goods industries** registered 65.4 in the fourth quarter compared to 61.5 in the third quarter, indicating a higher growth rate. Production, inventories of purchased materials, new orders and employment are expected to grow at a higher rate. Supplier deliveries are expected to be faster compared to the third quarter.

The index for the **durable goods industries** registered 56.3 in the fourth quarter compared to 58.0 in the third quarter, indicating a lower growth rate. Production, inventories of purchased materials, new orders and employment are expected to grow at a lower rate. Supplier deliveries are expected to be slightly slower compared to the third quarter.

Comments by the Purchasing Managers

We are coming into the new crop year for rice. California will have one of the largest crops in decades. So the price of rice will be flat to lower than last year. (Food)

Even though our sales volume is expected to be the same, we plan on transitioning temporary employees (approx. 4) who have been trained in the needed skills to direct employees to stabilize the work force, and protect the company's investment in its people. (Textile Mills)

We have purchased all the inventory we need to ensure that we are able to meet the expectations of our peak season for Christmas purchases and see a very successful 2016. It looks like the economy is turning around. (Apparel)

Business is very flat. Lowering inventories due to flat to weak demand. (Paper)

The resin cartel is starting to reassert its control over the market and are increasing prices in the USA faster than those in Asia despite the lower costs here. Finding qualified employees is becoming a difficulty and is affecting production. (Paper)

Business is changing. Less retail, more internet sales. (Wood Products)

Q4 is our busy season and production levels will double or triple during Q4. We are in the healthcare open enrollment printing business. (Printing & Related Support Activities)

We continue to run at near capacity. Started building new production facility in CA and purchased a large idled plant in VA in order to increase available capacity. (Chemicals)

The industry is experiencing tightness in High Density Polyethylene. This is keeping commodity prices high in the near term. Looking forward several capacity projects are coming on line. These capacity increases should help to moderate pricing next year. (Plastics & Rubber Products)

Our import costs may rise with the problems experienced by Hanjin shipping. (Nonmetallic Mineral Products)

Having a difficult time getting employees that remain past a few days even those who say they have to have a job support the family. Our rate is 1 out of 10. (Primary Metals)

Though the oil industry continues to be depressed, we expect business to increase slightly in the 4th quarter, simply because oil companies need to maintain their budgetary obligations. Steel prices have dropped a bit, distributors are cutting price to move stock. (Fabricated Metal Products)

We see less orders coming in for our products this coming 4Q16 as compared to 4Q15. This is usually due to the presidential election's uncertainty. Customers usually hold back on spending until the election is over. 1Q17 will look better as our customers feel better about the economy. (Machinery)

Aggressive competition from Chinese manufacturers is causing an erosion of sales, which will impact everything from manufacturing to sales to service. (Computer & Electronic Products)

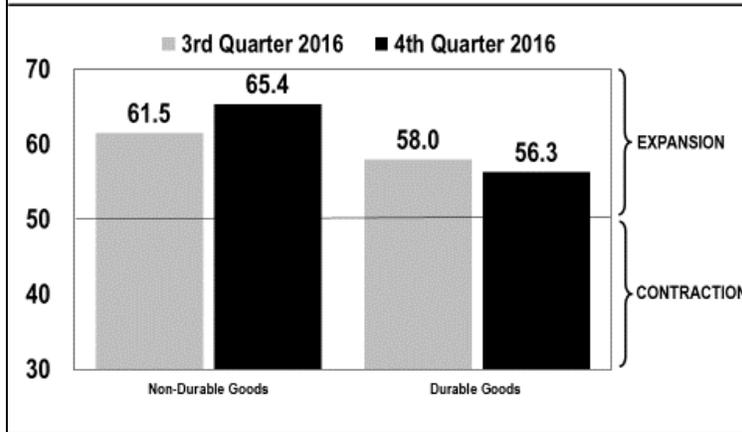
Because of the upcoming election, most businesses are holding back on any growth plans, especially in military spending. Hopefully this will improve starting at the end of the year. (Electrical Equipment, Appliance & Components)

We rely predominantly on the steel market; as we are a service-body & platform up-fitter for medium-duty chassis. It's becoming clearer that the cost of hard-goods are on a downward trend. (Transportation Equipment)

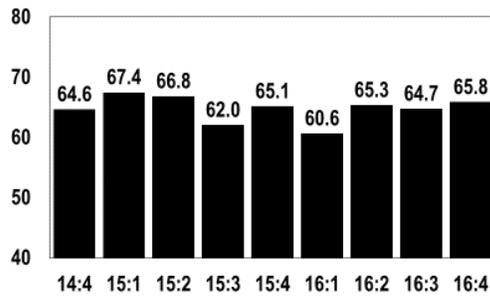
Some of the sequestered US Government projects are starting to rebid and place orders. Many corporate projects are still sitting on the sidelines, presidential election Jitters, don't know? (Furniture & Related Products)

Commercial Aerospace: Due to manufacturing issues with Pratt & Whitney Engines, next quarter Nacelle deliveries will decrease until issues are resolved. Military Aerospace: Flight surfaces for F-15 will remain stable for next quarter. Future is based on Boeing receiving additional order from Qatar. (Aerospace Products & Parts)

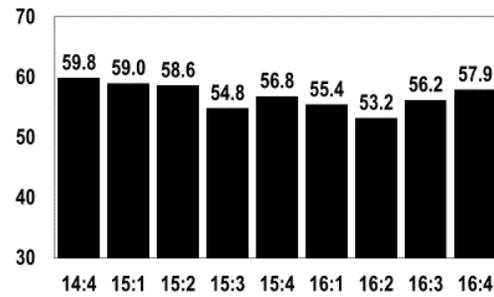
INDICES FOR INDUSTRY GROUPS



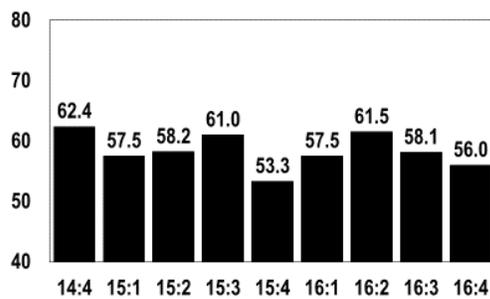
PRODUCTION INDEX



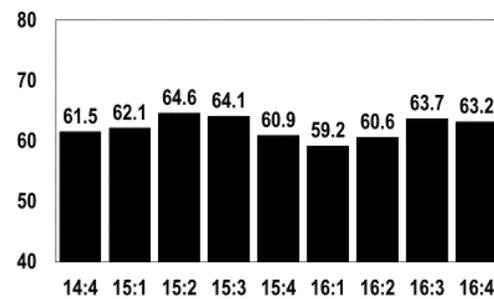
EMPLOYMENT INDEX



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. 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 Fourth Quarter of 2016

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 64.7 in the third quarter to 65.8 in the fourth quarter, indicating that production is expected to increase at a higher rate in the fourth quarter. This is the thirtieth 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; Primary Metals; Fabricated Metal Products; Computer & Electronic Products; Transportation Equipment; Furniture & Related Products; and Miscellaneous. The Wood Products industry reported an expected decrease in production.

Production	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2016	39.3	43.2	17.5	21.8	65.8
3 rd Quarter of 2016	47.2	37.5	15.3	32.0	64.7
2 nd Quarter of 2016	49.6	40.3	10.1	39.6	65.3
1 st Quarter of 2016	39.5	41.2	19.4	20.1	60.6

Inventories of Purchased Materials: The seasonally adjusted index for inventories of purchased materials is expected to increase from 54.3 in the third quarter to 57.2 in the fourth quarter, indicating that inventories are expected to increase at a higher rate in the fourth quarter. Inventories of purchased materials are expected to increase most rapidly in the following industries: Food; Textile Mill Products; Apparel; Printing & Related Support Activities; Chemicals; Primary Metals; Fabricated Metal Products; and Furniture & Related Products. Inventories of purchased materials are expected to decrease most rapidly in the following industries: Wood Products; Nonmetallic Mineral Products; and Miscellaneous.

Inventories of Purchased Materials	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2016	27.4	51.7	20.9	6.4	57.2
3 rd Quarter of 2016	33.7	45.5	20.7	13.0	54.3
2 nd Quarter of 2016	36.1	40.0	24.0	12.1	53.7
1 st Quarter of 2016	28.5	42.8	28.8	-0.3	50.4

Commodity Prices: The seasonally unadjusted index for commodity prices is expected to decrease from 58.1 in the third quarter to 56.0 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: Textile Mill Products; Apparel; Paper; Printing & Related Support Activities; Nonmetallic Mineral Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Transportation Equipment; Furniture & Related Products; and Miscellaneous. Commodity prices are expected to decrease most rapidly in the following industries: Food; and Wood Products.

Commodity Prices	% Higher	% Same	% Lower	Net	Index
4 th Quarter of 2016	21.0	69.9	9.0	12.0	56.0
3 rd Quarter of 2016	24.8	66.4	8.7	16.1	58.1
2 nd Quarter of 2016	31.3	60.4	8.3	23.0	61.5
1 st Quarter of 2016	27.2	60.6	12.2	15.0	57.5

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 47.6 in the third quarter to 49.2 in the fourth quarter, indicating that supplier deliveries are expected to continue to be faster in the fourth quarter. Supplier deliveries are expected to be slowest in the following industries: Printing & Related Support Activities; and Primary Metals. Supplier deliveries are expected to be fastest in the following industries: Food; and Plastics & Rubber Products.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Seasonally Adjusted Index
4 th Quarter of 2016	15.2	69.6	15.1	0.1	49.2
3 rd Quarter of 2016	9.7	75.4	14.9	-5.2	47.6
2 nd Quarter of 2016	12.0	76.8	11.2	0.8	50.5
1 st Quarter of 2016	14.5	72.4	13.0	1.5	51.3

New Orders: The seasonally adjusted index for new orders is expected to decrease from 63.7 in the third quarter to 63.2 in the fourth quarter, indicating that new orders are expected to increase at a slower rate in the fourth quarter. New orders are expected to increase most rapidly in the following industries: Food; Textile Mill Products; Paper; Printing & Related Support Activities; Petroleum & Coal Products; Chemicals; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; and Miscellaneous. New orders are expected to decrease most rapidly in the following industries: Wood Products; and Transportation Equipment.

New Orders	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2016	40.9	35.7	23.3	17.6	63.2
3 rd Quarter of 2016	46.5	36.1	17.5	29.0	63.7
2 nd Quarter of 2016	47.1	35.5	17.4	29.6	60.6
1 st Quarter of 2016	37.6	42.1	20.3	17.4	59.2

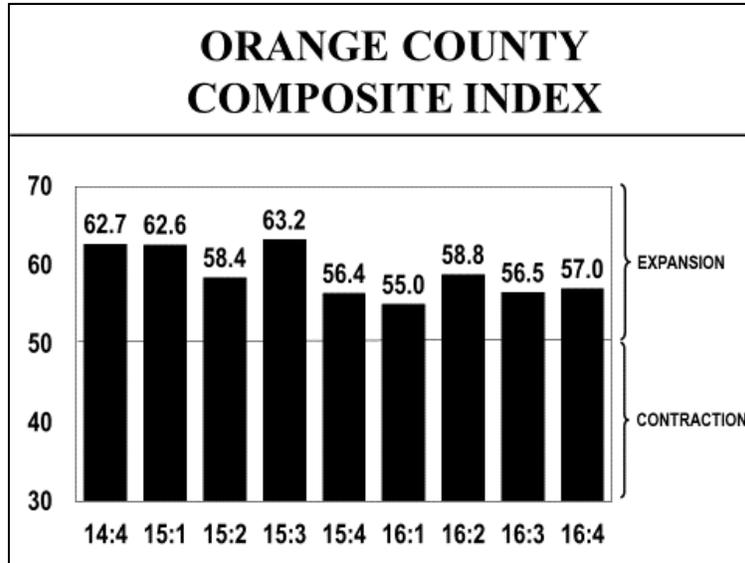
Employment: The seasonally adjusted index for employment is expected to increase from 56.2 in the third quarter to 57.9 in the fourth quarter, indicating that employment in manufacturing is expected to improve in the fourth quarter. Employment is expected to increase most rapidly in the following industries: Food; Textile Mill Products; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Primary Metals; Machinery; Computer & Electronic Products; Transportation Equipment; and Furniture & Related Products. Employment is expected to decrease most rapidly in the following industries: Wood Products; and Machinery.

Employment	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2016	23.8	62.7	13.5	10.3	57.9
3 rd Quarter of 2016	28.1	58.6	13.2	14.9	56.2
2 nd Quarter of 2016	23.8	61.8	14.4	9.5	53.2
1 st Quarter of 2016	25.0	60.6	14.4	10.6	55.4

High-Tech Industries: The high-tech industries include the following: Computer & Electronic Products, and Aerospace Products & Parts. The high-tech industries currently employ about 341,800 employees, amounting to 26.2% of total manufacturing employment in the state. The percent of purchasing managers in the Computer & Electronic Products industry reporting higher expected production decreased from 53.4% in the third quarter to 39.4% in the fourth quarter. Additionally the percent of purchasing managers reporting higher expected employment in these industries decreased from 30.4% in the third quarter to 16.1% in the fourth quarter.

Orange County's Manufacturing Survey

The Orange County manufacturing sector's Composite Index increased from 56.5 in the third quarter to 57.0 in the fourth quarter, indicating that the county's manufacturing economy is expected to grow at a higher rate in the fourth quarter. Orange County's index is now below California's for the fifth consecutive quarter.



The seasonally adjusted index for production increased from 59.8 in the third quarter to 64.3 in the fourth quarter, indicating that production is expected to grow at a higher rate in the fourth quarter. This is the thirtieth consecutive quarter that the production index has been above 50. The seasonally adjusted index for new orders decreased from 61.4 in the third quarter to 58.5 in the fourth quarter, indicating that new orders are expected to grow at a lower rate in the fourth quarter. Unlike California, the index for inventories of purchased materials decreased from 52.7 in the third quarter to 49.7 in the fourth quarter indicating a very mild decrease in the level of inventories of purchased materials held by firms in the fourth quarter.

The index for the **non-durable goods industries** leaped from 50.1 in the third quarter to 64.0 in the fourth quarter, indicating that the growth rate in these industries is expected to be much higher in the fourth quarter. This jump is fueled by a large expected increase in production and new orders. The index for the **durable goods industries** on the other hand decreased from 58.8 in the third quarter to 54.4 in the fourth quarter, indicating that the durable goods industries are expected to grow at a lower rate in the fourth quarter. Production, new orders and inventories of purchased materials are all expected to grow at a lower rate in the fourth quarter in the durable goods industries.

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
- FEBRUARY** † California Leading Employment Indicator
- MARCH** † California Consumer Sentiment Survey
- APRIL** † California Purchasing Managers Survey
- MAY** † California Leading Employment Indicator
- JUNE** † California Consumer Sentiment Survey
 † Economic Forecast Update Conference for the U.S., California and
 Orange County
- JULY** † California Purchasing Managers Survey
- AUGUST** † California Leading Employment Indicator
- SEPTEMBER** † California Consumer Sentiment Survey
- OCTOBER** † California Purchasing Managers Survey
- NOVEMBER** † California Leading Employment Indicator
- DECEMBER** † Economic Forecast Conference for the U.S., California and
 Orange County
 † California Consumer Sentiment Survey