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Higher Growth in the Manufacturing Sector

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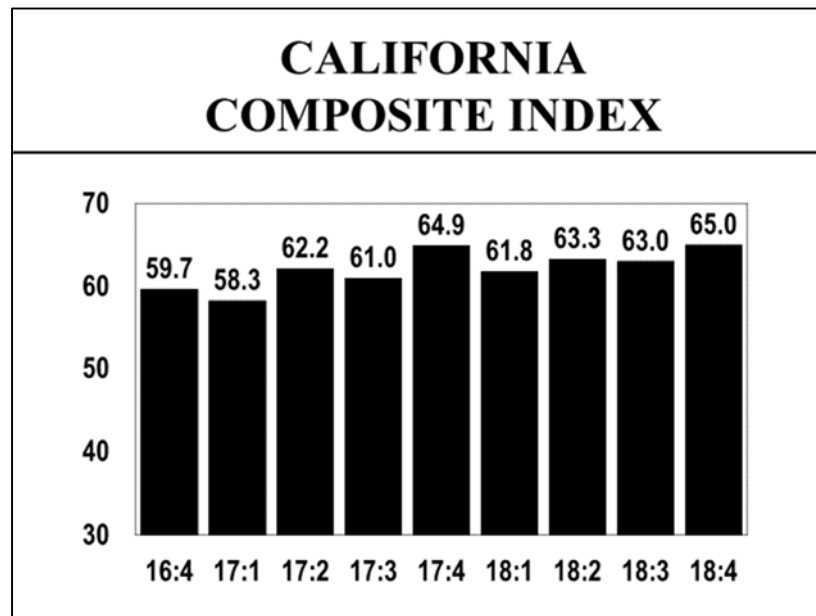
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PRESS RELEASE

HIGHER GROWTH IN THE MANUFACTURING SECTOR

ORANGE, CA — According to a survey of purchasing managers, the California manufacturing economy is expected to expand at a faster rate in the fourth quarter compared to the third quarter. The California Composite Index, measuring overall manufacturing activity, increased from 63.0 in the third quarter to 65.0 in the fourth quarter, indicating a higher growth rate. This is the highest value of the index since the fourth quarter of 2005. Production, inventories of purchased materials, new orders and employment are all expected to grow at a higher growth rate compared to the third quarter. Commodity prices are expected to rise at a slower rate, while supplier deliveries will slow at a slower rate. A large number of respondents have commented on the impact tariffs are having on their business, in particular tariffs on steel and aluminum. As their production costs increase they expect to pass some of those costs to consumers.



California Manufacturing at a Glance

Composite Index	65.0	Growing at a higher rate
Production	72.8	Growing at a higher rate
Inventories of purchased materials	64.3	Growing at a higher rate
Commodity prices	77.1	Rising at a slower rate
Supplier deliveries	58.1	Slowing at a slower rate
New orders	64.9	Growing at a higher rate
Employment	62.9	Growing at a higher rate

Performance by Industry Group

The index for the **non-durable goods industries** increased from 62.0 in the third quarter to 68.6 in the fourth quarter, indicating a higher rate of growth in the fourth quarter. Production, inventories of purchased materials, new orders, and employment are expected to grow at a higher rate. Supplier deliveries are expected to slow at a slower rate while commodity prices are expected to rise at a lower rate as well.

The index for the **durable goods industries** decreased from 63.6 in the third quarter to 62.8 in the fourth quarter, indicating a lower rate of growth in the fourth quarter. Production, commodity prices, new orders and employment are expected to increase at a slightly lower rate in the fourth quarter. Supplier deliveries are expected to slow at a slower rate while commodity prices are expected to rise at a lower rate as well.

Comments by the Purchasing Managers

Q4 is our busy season, we expect significant increases in sales and purchases. (Food)

Uncertainty regarding tariffs on imported raw materials is making it difficult to project pricing. (Textile Mill Products)

Raw material costs have skyrocketed for our cabinet business resulting in lost sales from the residential sector. We are now more focused on the commercial sector as they continue to order regularly and seem unaffected by the cost increases. (Wood Products)

Cost for raw materials, especially paper, have gone up significantly this year. Also mills have created a supply shortage, helping to support the higher prices. Therefore we've had to go out and raise customer prices to maintain margins, at least from those customers willing to pay more. Not all are. Consequently margins suffer. We are experiencing an uptick in demand, perhaps because competitors are not able to get raw materials as readily as we are. (Paper)

Demand has increased slightly over Q2 and expect it to stay level through year end. Prices for paper continue to rise, some due to Canadian tariffs, some due to supplier consolidation. (Printing & Related Support Activities)

We have seen growth in customers and expansion of our product lines. Sales are up. Costs are up as well. Transportation is a challenge, both with our own drivers and with common carriers. Space is tight. Room to expand is just as tight. Customers are requesting/demanding

extended terms. A lot of challenges ahead, but business is good. Just need to manage overhead carefully. (Chemicals)

We are continuing to experience commodity price increases due to resin shortages and tariffs. Our semiconductor business has experienced a rapid slowdown. (Plastics & Rubber Products)

Quarter 3 exhibited 3 top ten months, in terms of volume, which has not been seen in 12 years. This was driven by utility and transportation infrastructure expenditures in the East Bay, as well as continued strength in the housing market. Usual seasonal downturn is expected as weather turns, but may lead to new, higher margin orders as strain on resources stretched to capacity eases. (Nonmetallic Mineral products)

The Tariffs imposed on China are affecting goods needed for production, suppliers now having to look elsewhere for materials. (Primary Metals)

Supplier inventories have dwindled and our supplier base will have a difficult time keeping up with the business growth we are experiencing. I feel foolish making the statement that the tariffs will have dramatic effects on material pricing, and availability because we all understand that. (Fabricated Metal Products)

In an otherwise strong market, Chinese tariffs are the big unknown. Suppliers are struggling with how to implement, but the ones that are pushing forward are causing a significant increase for the items that are impacted. As long as the tariffs are in place, we are pushing back deliveries when possible and decreasing inventory. (Machinery)

Lead times for electronic components are getting longer especially for capacitors. We are also starting to see price increases due to the tariffs on goods from China. (Computer & Electronic Products)

Our most pressing problem is finding qualified employees. The government is paying people too much to not work, so people are not learning skills and looking for jobs. (Electrical Equipment, Appliance & Components)

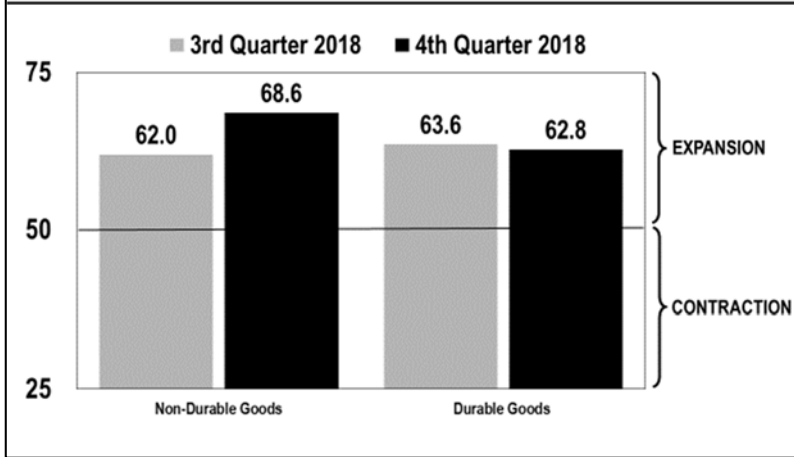
Inflation is hitting hard as we are seeing price increases for freight, finishing, raw materials, and Finished goods. Employees are demanding higher wages as labor market tightens. It is hard to say how long the good times are going to roll. (Transportation Equipment)

The "new" Trump tariffs are driving domestic prices up causing us to pass on to our customers. (Furniture & Related Products)

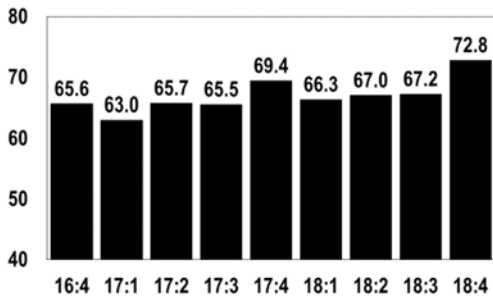
Supply chain is currently being impacted by a global silicone shortage (increasing prices, increasing lead time, and in some cases, allocation of certain materials) and uncertainty regarding steel and aluminum prices and availability due to the Trump tariffs. (Miscellaneous)

US Military business remains strong and is expected to continue. Tariffs are impacting costs already this quarter and are expected to have a higher impact next quarter, primarily for steel and aluminum products. (Aerospace Products & Parts)

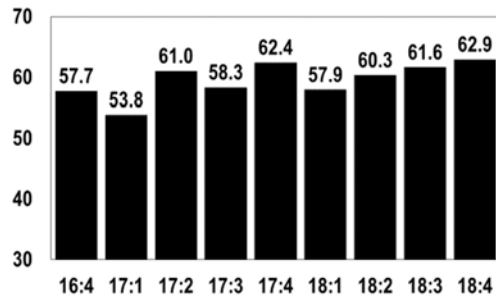
INDICES FOR INDUSTRY GROUPS



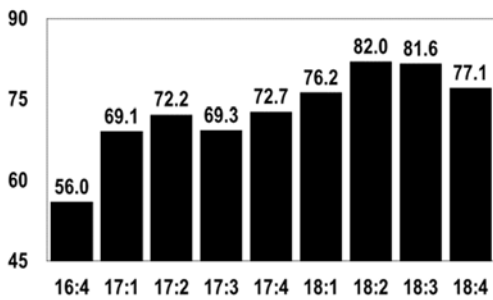
PRODUCTION INDEX



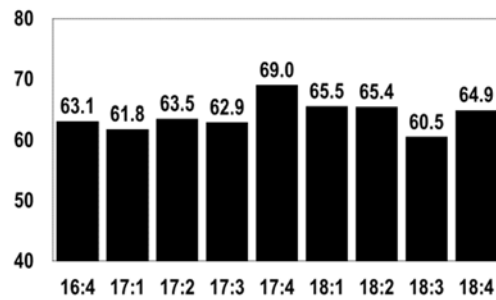
EMPLOYMENT INDEX



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 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 67.2 in the third quarter to 72.8 in the fourth quarter, indicating that production is expected to increase at a higher rate in the fourth quarter. This is the thirty eighth 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; Chemicals; Plastics & Rubber Products; Wood Products; 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
4 th Quarter of 2018	50.6	33.8	15.5	35.1	72.8
3 rd Quarter of 2018	51.2	34.7	14.1	37.1	67.2
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

Inventories of Purchased Materials: The seasonally adjusted index for inventories of purchased materials is expected to increase from 57.9 in the third quarter to 64.3 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; Beverage & Tobacco; Textile Mill Products; Paper; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment; Furniture & Related Products; and Miscellaneous. The Primary Metals industry has reported an expected decrease in inventories of purchased materials.

Inventories of Purchased Materials	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2018	38.0	44.0	17.9	20.1	64.3
3 rd Quarter of 2018	39.2	41.7	19.0	20.2	57.9
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

Commodity Prices: The seasonally unadjusted index for commodity prices is expected to increase from 81.6 in the third quarter to 77.1 in the fourth quarter, indicating that commodity prices are expected to rise at a slower 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; Chemicals; Plastics & Rubber Products; Wood Products; Nonmetallic Mineral Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment; Furniture & Related Products; and Miscellaneous. The Primary Metals industry reported an expected decrease in commodity prices.

Commodity	% Higher	% Same	% Lower	Net	Index
4 th Quarter of 2018	62.4	29.5	8.1	54.3	77.1
3 rd Quarter of 2018	67.2	28.8	4.0	63.2	81.6
2 nd Quarter of 2018	66.1	31.8	2.1	64.0	82.0
1 st Quarter of 2018	55.5	41.3	3.2	52.3	76.2

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 64.7 in the third quarter to 58.1 in the fourth quarter, indicating that supplier deliveries are expected to be slower in the fourth quarter. Supplier deliveries are expected to be slowest in the following industries: Paper; Chemicals; Nonmetallic Mineral Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment; and Furniture & Related Products. The Miscellaneous industry reported an expectation of faster supplier deliveries.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Seasonally Adjusted Index
4 th Quarter of 2018	27.5	62.6	9.8	17.7	58.1
3 rd Quarter of 2018	34.7	59.3	6.0	28.7	64.7
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

New Orders: The seasonally adjusted index for new orders is expected to increase from 60.5 in the third quarter to 64.9 in the fourth quarter, indicating that new orders are expected to increase at a higher 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 Chemicals; Plastics & Rubber Products; Nonmetallic Mineral Products; Fabricated Metal Products; Machinery; Computer & Electronic Products; and Miscellaneous. No industry reported an expected decrease in new orders.

New Orders	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2018	42.3	36.3	21.4	20.9	64.9
3 rd Quarter of 2018	41.7	39.3	19.0	22.7	60.5
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

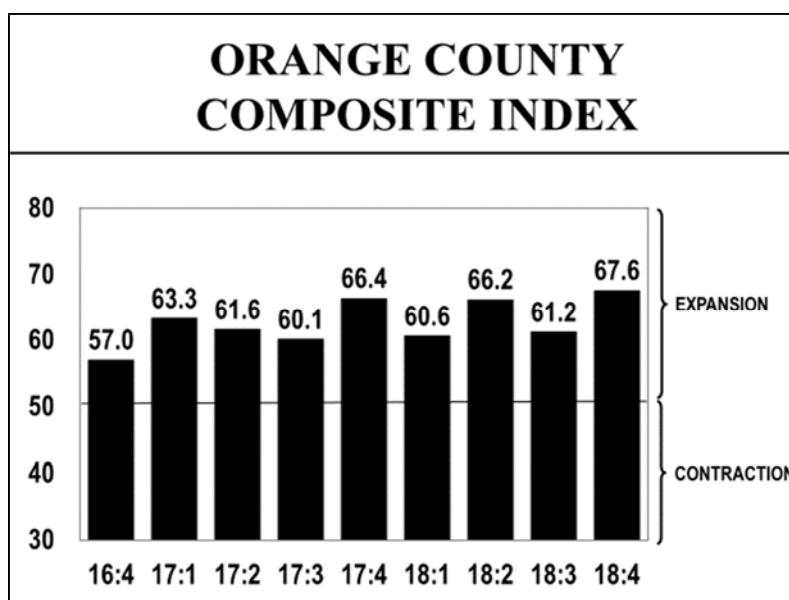
Employment: The seasonally adjusted index for employment is expected to increase from 61.6 in the third quarter to 62.9 in the fourth quarter, indicating that employment in manufacturing is expected to improve in the fourth quarter. Employment is expected to increase most rapidly in the following industries: Food; Paper; Printing & Related Support Activities; Chemicals; Plastics & Rubber Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliance & Components; Transportation Equipment; and Furniture & Related Products. No industry reported an expected decrease in employment.

Employment	% Higher	% Same	% Lower	Net	Seasonally Adjusted Index
4 th Quarter of 2018	31.3	57.7	11.1	20.2	62.9
3 rd Quarter of 2018	38.3	49.4	12.3	26.0	61.6
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

High-Tech Industries: The high-tech industries include the following: Computer & Electronic Products, and Aerospace Products & Parts. The high-tech industries currently employ about 361,400 employees, amounting to 27.1% of total manufacturing employment in the state. The percent of purchasing managers in the Computer & Electronic Products industry reporting higher expected production decreased from 59.9% in the third quarter to 39.5% in the fourth quarter. Additionally, the percent of purchasing managers reporting higher expected employment in these industries also decreased from 50% in the third quarter to 28.4% in the fourth quarter.

Orange County's Manufacturing Survey

The Orange County manufacturing sector's Composite Index increased from 61.2 in the third quarter to 67.6 in the fourth quarter, indicating that the county's manufacturing economy is expected to grow at a faster rate in the fourth quarter. The Orange County index is now above California's index.



The seasonally adjusted index for production increased from 66.5 in the third quarter to 72.5 in the fourth quarter, indicating that production is expected to grow at a higher rate in the fourth quarter. This is the thirty eighth consecutive quarter that the production index has been above 50. The seasonally adjusted index for new orders also increased from 62.1 in the third quarter to 68.7 in the fourth quarter, indicating that new orders are expected to grow at a higher rate in the fourth quarter.

The index for the **non-durable goods industries** increased from 60.5 in the third quarter to 74.2 in the fourth quarter, indicating that the growth rate in these industries is expected to be substantially higher in the fourth quarter. The index for production increased from 63.5 in the third quarter to 82.8 in the fourth quarter indicating a substantially higher rate of growth. The index for the **durable goods industries** increased from 61.4 in the third quarter to 65.3 in the fourth quarter, indicating that the durable goods industries are expected to grow at a higher rate in the fourth quarter. Production, new orders and employment are 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

- | | |
|------------------|--|
| 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 |