

IAR'S INLAND EMPIRE REPORT ON BUSINESS
Prepared by: The Institute of Applied Research

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Jack H. Brown College of Business and Public
Administration

Report for March 2021

Sponsors: San Bernardino County Economic Development Agency
Riverside County Business and Community Services

PMI STRONG FOR 7th MONTH IN A ROW
COMMODITY PRICE INDEX HIGHEST SINCE 1993

CONTEXT FOR THIS REPORT: For the past year, IAR has introduced its monthly Report on Business with a snapshot of COVID-19 new cases, hospitalizations, and deaths. The reason we have done this is that leading researchers and economists believe that there cannot be an economic recovery until the coronavirus is under control. Thankfully, the nationwide case rate has shown significant declines since the release of last month's report, although we must still report a staggering 565,256 deaths across the US due to COVID (up from 524,631 COVID-19 deaths nationwide when our last report was written). According to Johns Hopkins University, COVID cases are still increasing in 30 states, but California's cases have dropped and are now holding relatively steady.

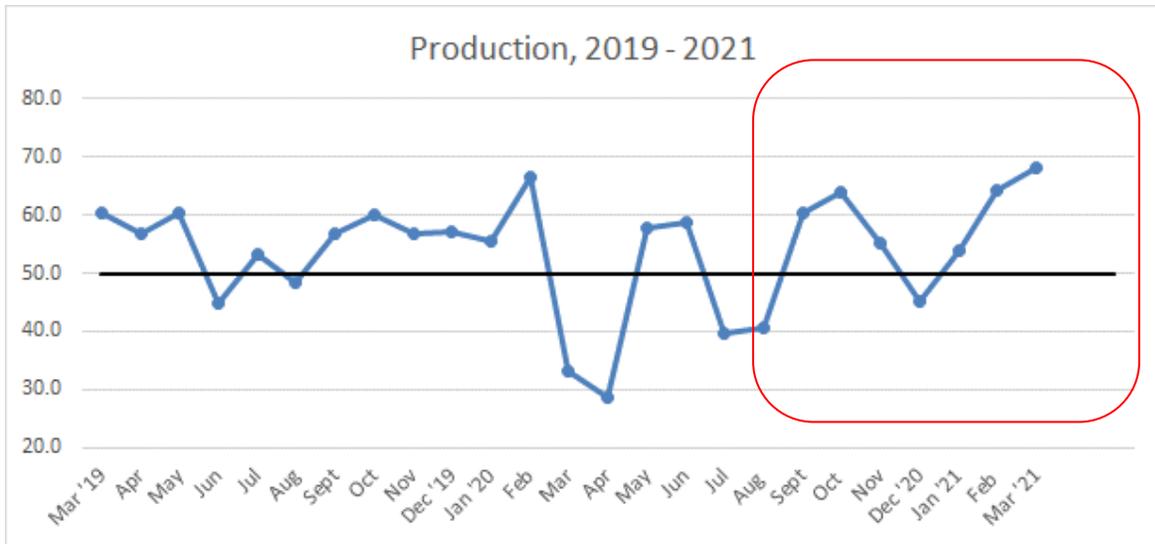
It is always possible that a fourth surge is coming, however given the current trend, IAR sees no need to continue its "COVID-introductions" at the start of its monthly economic forecasts. For up to date COVID statistics, the reader can access the following websites:

<https://www.worldometers.info/coronavirus/country/us/>
https://www.california-demographics.com/counties_by_population

According to Dr. Barbara Sirotnik (Director, Institute of Applied Research) and Lori Aldana (Project Coordinator, Institute of Applied Research), "This month's Inland Empire Purchasing Managers' Index (PMI) registered **64.3**, virtually unchanged from last month's 63.9. The index has remained above the baseline 50% mark for the

seventh consecutive month, indicating steady growth in the Inland Empire manufacturing sector and the economy as a whole.”

“In other positive news: The Production Index increased to **68.3** this month from 64.3 last month. The New Orders Index had a decrease from 73.2 last month to **65.0** this month which means that new orders are still increasing, although at a slightly slower pace than last month. The Employment Index increased from 51.8 last month to **53.3** this month.”



“On the downside: The Commodity Price Index soared to **93.3** (up from last month’s 82.1). This is the highest on record since the inception of this report back in 1993. And Supplier Deliveries jumped from 76.8 last month to **83.3** this month, indicating that deliveries are continuing to slow. Several respondents mentioned supply chain issues, and the need to “overbuy” to guard against running out of materials which may not arrive in a timely fashion. It is possible that there will be even slower deliveries next month due to the Ever Given shipping container being stuck in the Suez Canal between March 23rd and 29th, which caused a backup of over 300 ships and caused others to avoid the area and take detours which delayed deliveries.”

“The overall Inventory level (units, not dollars) including raw, MRO (Maintenance, Repair, Operating), intermediates, etc. decreased slightly from 53.6 last month to **51.7** this month. Only 13% of companies indicated that their level of *finished goods* has increased, whereas 20% of companies indicate that their level of *finished goods* has decreased since the previous month. Two-thirds (67%) indicated that their inventory of finished goods has not changed since last month, meaning that their production of finished goods is “staying even” with sales.”

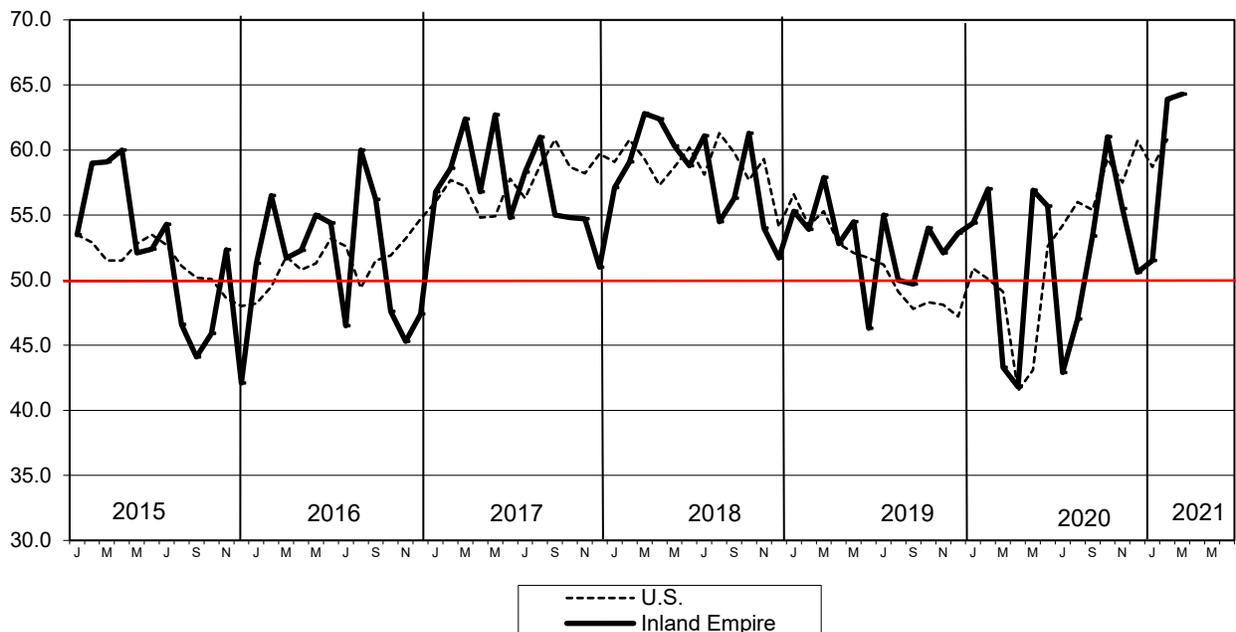
“Forty-four (44%) of Purchasing Managers predicted that the local economy will become stronger in the upcoming months (up from last month’s 35%), and 19% believe that it

will become weaker in the coming quarter (up slightly from last month 15%). The rest (37% -- down from 50% last month) believe that the state of the local economy will remain unchanged. In short, optimism is increasing that the effects of the pandemic on the economy are easing, and the local economy is in recovery.”

Following is a summary of highlights from this month’s report:

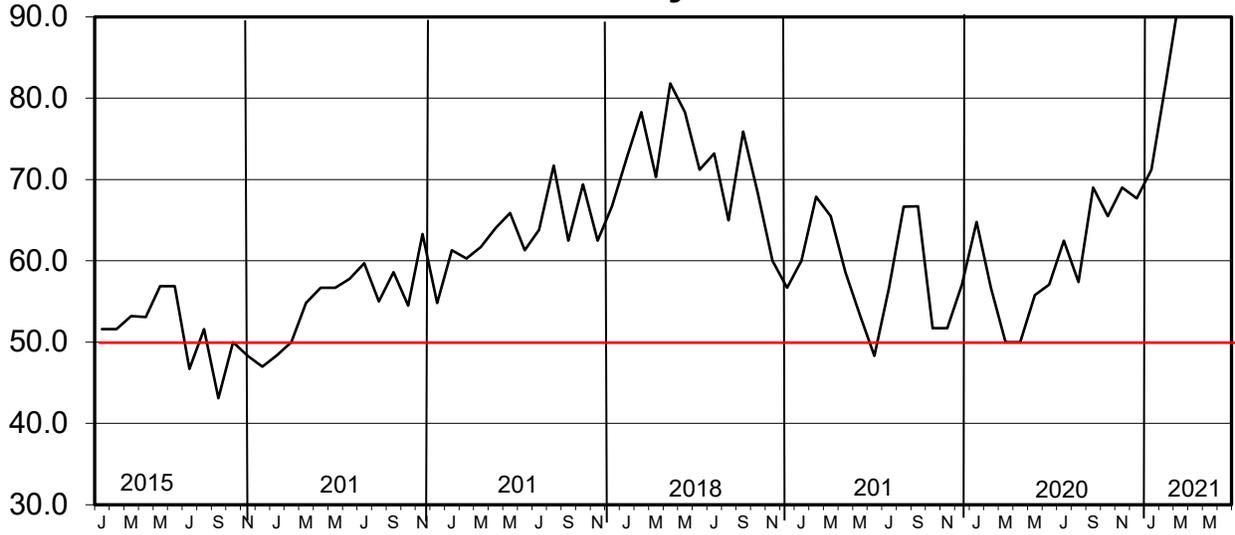
March 2021 Business Survey at a Glance					
	Series Index		Direction from 50	Rate of Change from Last Index	Trend Months
	Last Month	This Month			
Local PMI	63.9	64.3	Growing	Faster	7
Commodity Prices	82.1	93.3	Increasing	Faster	21
Production	64.3	68.3	Growing	Faster	3
New Orders	73.2	65.0	Growing	Slower	3
Inventory	53.6	51.7	Increasing	Slower	2
Employment	51.8	53.3	Growing	Faster	2
Supplier Deliveries	76.8	83.3	Slowing	Faster	18
Purchasing Managers' Confidence in the State of the Local Economy					
% Stronger	35%	44%			
% Same	50%	37%			
% Weaker	15%	19%			

Purchasing Managers' Index

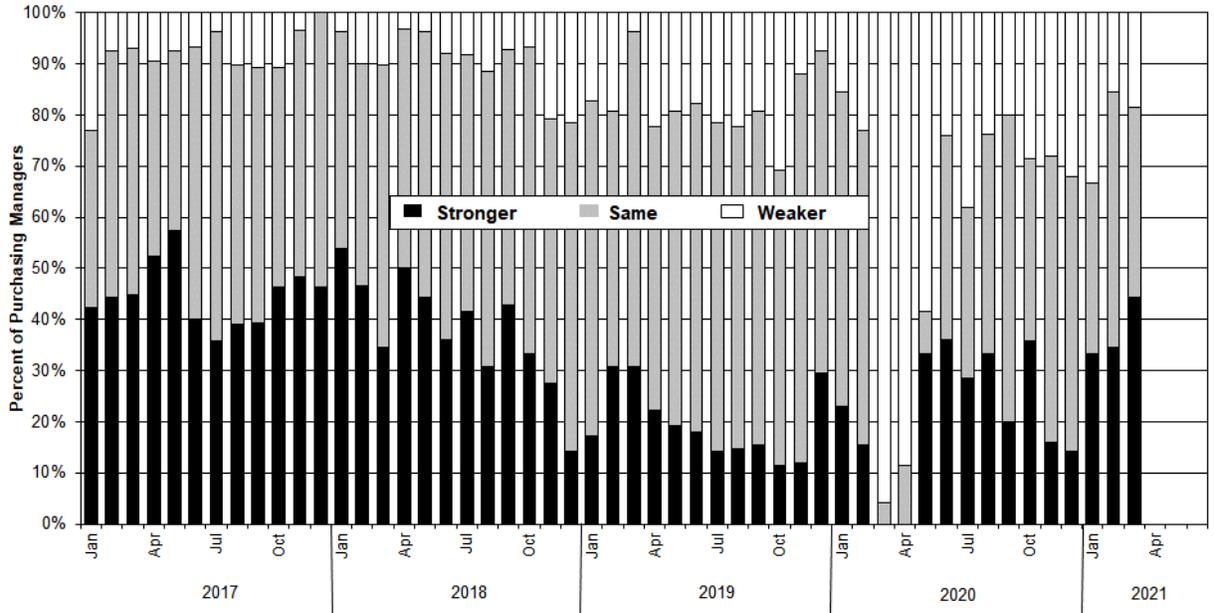


Source of U.S. PMI®: Institute for Supply Management®, Source of IE PMI®: Institute of Applied Research

Commodity Prices



State of the Local Economy



STATE OF THE ECONOMY: DATA FROM 03/2020 THROUGH 03/2021

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Weaker	96	89	58	24	38	24	20	29	28	32	33	15	19
Same	4	11	9	40	33	43	60	37	56	54	34	50	37
Stronger	0	0	33	36	29	33	20	36	16	14	33	35	44

What respondents are saying:

Each month we ask our respondents to make comments regarding business conditions – local, national, or international. Very few of the comments were completely positive. Even when noting that business is improving, there were comments focusing on three concerns: (1) finding quality employees, (2) price increases, and (3) longer-than-usual lead times from suppliers.

Following are the relatively positive comments:

- “Business is very consistent.”
- "Customers see improvements and are ordering to avoid delays."
- “I think that the business climate is improving significantly as more stability and certainty exists in both the business and political climates. For us, January was the biggest booking month in our history and even though not as robust, both February and now March are very robust. For the three-month period we will have our largest quarter in the company's history.”
- “January and February were considerably better than 2020. March has slowed up a bit.”
- “Q1 will be our most profitable quarter in the history of our company. Prices are up and demand is out of control. I have also placed more purchase orders with our suppliers than I ever have.”
- “Seems like business is picking up and getting better.”
- "We see domestic and international business improving."

Even though the PMI index showed solid growth (as did many of the indices which comprise the PMI) some Purchasing Managers made cautionary comments:

- “Automotive production has slowed down currently to shortages in multiple areas due to port issues, semi-conductor shortage worldwide, and petrochemical delays in Texas.”
- “Europe has really slowed down. Our shipments to Europe are even lower now than any time during the past 12 months. Asia is steady to where they have been the past few quarters.”
- “Having some issues with longer than usual lead time from suppliers.”
- “It is hand to mouth on many of the items we carry. Unfortunately, finding labor to satisfy this demand is next to impossible. I sincerely hope we can find two or

three new employees in April or we are going to fall further and further behind with our deliveries.”

- “More customers booking, but it does seem hard to find employees.”
- “Orders usually pick up in March, but still very slow!”
- “Port delays.”
- “Slow start for 2021 but typical for this time of the year.”
- “Slowing down.”
- “The biggest challenge will continue to be to find the high-quality people to fill our production needs.”
- “The cost of materials is rising. Material deliveries have been stretching out to the point it is hurting.”
- “We are currently experiencing a backorder of materials and parts. This has never happened to us since starting our business in 1989. When I place an order with vendors, I am tripling the quantity needed and often have to search for alternate vendors. Many of our vendors are waiting for containers to be checked-in and/or released at the port. I am concerned what domino effect this will cause.”
- “We are seeing an increase in pricing on our most common materials.”

Each month over the past year we have included some questions on the survey regarding doing business during the pandemic. This month we decided to focus on technology and a look to the future. We provided a list of technologies and asked: “Which technology do you think is MOST important to your company’s future success?” About a third of respondents (10 people) said they have no idea about technologies that would be important to the company’s future, and another seven (7) said “none.” The predominant answer among the remaining respondents was “automation/robotics” (8 people). Indeed, robotics has become an increasingly common mainstay of modern manufacturing to perform routine tasks in high production environments.

The survey then probed by asking: “How vital are automation and robotics to your current manufacturing operations?” Forty percent of respondents stated that they are not automated at all and 20% said that it is not very important, thus demonstrating opportunities for the future of Inland Empire manufacturing. A small group (13%) said that automation/robotics is critical, and 27% said it is somewhat important.

The survey then turned to a question regarding analytics, specifically “How vital is analytics to your current manufacturing operations?” Sadly (since one of the authors of this report teaches analytics), 50% of companies indicated that it is not very important, while 17% acknowledged that it is critical and another 33% said it is “somewhat important.”

When asked how analytics are used in their company, respondents had this to say:

- “Most of the business decisions are driven by analytics. This includes personnel scheduling, production planning, and plans for growth.”

- "Gathering information from the manufacturing operation and applying this information to gain efficiency."
- "We have automated machines in all our departments."
- "Cost and income based."
- "Process control and quality control."
- "Trying to better understand our customers past buying habits to predict future buying patterns is key for us to keep our inventory filled with items that are most important to our customers and add the most to our bottom line. We use previous product usage and track what people are looking for on our website to predict future patterns. This is something that we need to get better at in order to maximize profitability and keep our customers happy."
- "We are mostly dedicated to ensuring our quality requirements our met and that the analytics we use support both the efforts and the results...so not for what is becoming more traditional analytical applications for manufacturing and marketing."

IAR believes that predictive analytics can help a company become more efficient, competitive, and profitable, and we believe that the manufacturing firm of the future will have to use data-driven decision making to diagnose quality problems, avoid downtime, and manage resources efficiently.

Finally, this past year has seen a variety of supply chain disruptions due to COVID-19. A lack of cybersecurity is merely one of the possible sources of disruption. As noted by the National Institute of Standards and Technology: "Cybersecurity in the supply chain cannot be viewed as an IT problem only. Cyber supply chain risks touch sourcing, vendor management, supply chain continuity and quality, transportation security and many other functions across the enterprise and require a coordinated effort to address." Given this, we included the following question: "How confident are you in your company's cybersecurity preparedness?" Sadly 13% said they were "not at all confident," 70% said they were only "somewhat confident," and the other 17% were "extremely confident. One of our respondents said they have needed to "add cybersecurity to all of our operations in which potential breaches could occur." We believe that it is important for other manufacturing firms to follow suit in the near future.

In summary, this month's data is a welcome and optimistic snapshot of the Inland Empire's manufacturing sector and overall economy. By next week, both Riverside County and San Bernardino County could possibly reach the "orange tier" which will allow higher capacity in businesses. The massive vaccine rollout has been relatively successful. Schools are reopening. Unemployment claims are dropping and consumer confidence across the nation is surging. Consumers who refrained from spending on traveling and major purchases may soon return to previous buying habits (perhaps partially helped by the stimulus checks which have arrived or will be

coming soon). More people are getting out and about, and the economy is getting a boost from their increased activity. It looks like blue skies are ahead unless the much-discussed fourth surge becomes a reality and businesses are forced to close once again.

We must not lose sight of the challenges mentioned by respondents to this month's survey. But the continuing lower number of COVID cases and deaths, along with an increase in vaccination rates, portends of a hopeful future.

IAR will continue to provide the most up-to-date data on business conditions that we can during this time of recovery and renewal.

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