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March 2020 Manufacturing ISM® Report On Business®

PMI® at 49.1%

Production, New Orders, and Employment Contracting

Supplier Deliveries Slowing at Faster Rate; Backlog Contracting

Raw Materials Inventories Contracting; Customers' Inventories Too Low

Prices Decreasing; Exports and Imports Contracting

(Tempe, Arizona) — Economic activity in the manufacturing sector contracted in March, and the overall economy grew for the 131st consecutive month, say the nation's supply executives in the latest Manufacturing ISM® Report On Business®.

The report was issued today by Timothy R. Fiore, CPSM, C.P.M., Chair of the Institute for Supply Management® (ISM®) Manufacturing Business Survey Committee: “The March PMI® registered 49.1 percent, down 1 percentage point from the February reading of 50.1 percent. The New Orders Index registered 42.2 percent, a decrease of 7.6 percentage points from the February reading of 49.8 percent. The Production Index registered 47.7 percent, down 2.6 percentage points compared to the February reading of 50.3 percent. The Backlog of Orders Index registered 45.9 percent, a decrease of 4.4 percentage points compared to the February reading of 50.3 percent. The Employment Index registered 43.8 percent, a decrease of 3.1 percentage points from the February reading of 46.9 percent.

“The Supplier Deliveries Index registered 65 percent, up 7.7 percentage points from the February reading of 57.3 percent, and limited the decrease in the composite PMI®. The Supplier Deliveries Index is one of five equally weighted subindexes that directly factor into the PMI®, along with New Orders, Production, Employment and Inventories. Supplier Deliveries is the only ISM® Report On Business® index

that is inverted — a reading of above 50 percent indicates slower deliveries, which is typical as the economy improves and customer demand increases. However, the high index reading in March was primarily a product of coronavirus-related supply problems.

“The Inventories Index registered 46.9 percent, 0.4 percentage point higher than the February reading of 46.5 percent. The Prices Index registered 37.4 percent, down 8.5 percentage points compared to the February reading of 45.9 percent. The New Export Orders Index registered 46.6 percent, a decrease of 4.6 percentage points compared to the February reading of 51.2 percent. The Imports Index registered 42.1 percent, a 0.5-percentage point decrease from the February reading of 42.6 percent.

“Comments from the panel were negative regarding the near-term outlook, with sentiment clearly impacted by the coronavirus (COVID-19) pandemic and energy market volatility. The PMI® returned to contraction territory, and with a negative trajectory. Demand slumped, with (1) the New Orders Index contracting at a strong level, in part pushed by new export order contraction, (2) the Customers’ Inventories Index remaining at ‘too low’ status, but increasing at a level considered a negative for future production, (3) the Backlog of Orders Index contracting again, at a moderate rate. Consumption (measured by the Production and Employment indexes) contributed negatively (a combined 5.7-percentage point decrease) to the PMI® calculation, with activity contracting at a faster rate. Inputs — expressed as supplier deliveries, inventories and imports — strengthened in March, due primarily to supplier delivery difficulties; inventory contraction stabilized. Despite imports contracting at strong rates due primarily to coronavirus impacts, inputs contributed positively to the PMI® calculation (the Imports Index does not directly factor into the PMI®). Prices continued to contract (and at a faster rate in March), supporting a negative outlook.

“The coronavirus pandemic and shocks in global energy markets have impacted all manufacturing sectors. Among the six big industry sectors, Food, Beverage & Tobacco Products remains strongest, followed by Chemical Products, which in addition to the pharmaceutical component, is a significant contributor to the Food, Beverage & Tobacco Products Industry and beneficiary of low energy and feedstock prices. Transportation Equipment and Petroleum & Coal Products are the weakest sectors. Sentiment regarding near-term growth this month is strongly negative, by a 2-to-1 ratio,” says Fiore.

Of the 18 manufacturing industries, the 10 that reported growth in March — listed in order — are: Printing & Related Support Activities; Food, Beverage & Tobacco Products; Apparel, Leather & Allied Products; Wood Products; Paper Products; Chemical Products; Computer & Electronic Products; Primary Metals; Miscellaneous Manufacturing; and Plastics & Rubber Products. The six industries reporting contraction in March, in order, are: Petroleum & Coal Products; Textile Mills; Transportation Equipment; Furniture & Related Products; Fabricated Metal Products; and Machinery.

#### WHAT RESPONDENTS ARE SAYING

“COVID-19 is impacting China’s raw material supply chain. We are now seeing revenue impact in that region. Our operations team is reviewing plans for spread of the virus.” (Computer & Electronic Products)

“The two main issues affecting our business [are] COVID-19 and the oil-price war. We are in daily discussions and meeting constantly, updating tracking logs to document high risk concerns.” (Chemical Products)

“COVID-19 impact has extended to Europe and North America. The virus escalation is affecting our purchasing and logistics operations. We have incurred air-shipment and production interruptions due to shortages of raw materials and components.” (Transportation Equipment)

“We are experiencing a record number of orders due to COVID-19.” (Food, Beverage & Tobacco Products)

“World demand for petroleum products is declining, while supply is ramping up. We have lost supply chain visibility to certain locations.” (Petroleum & Coal Products)

“COVID-19’s spread in the U.S. may start impacting our domestic business. As for Asian suppliers, they are starting to get back up to speed.” (Fabricated Metal Products)

“COVID-19 has caused a 30-percent reduction in productivity in our factory.” (Machinery)

“A big part of our business is hospitality, and we are seeing demand drop and an increase in cancellations.” (Nonmetallic Mineral Products)

“All North American manufacturing plants have ceased operations or drastically scaled back as a result of customer plant closings and other responses to COVID-19.” (Plastics & Rubber Products)

“Volumes are down 4.3 percent, and some areas of the supply chain are being affected by the coronavirus.” (Furniture & Related Products)

#### Manufacturing at a Glance March 2020

Index	Series Index Mar	Series Index Feb	Percentage Point Change	Direction	Rate of Change	Trend* (Months)
PMI®	49.1	50.1	-1.0	Contracting	From Growing	1
New Orders	42.2	49.8	-7.6	Contracting	Faster	2
Production	47.7	50.3	-2.6	Contracting	From Growing	1
Employment	43.8	46.9	-3.1	Contracting	Faster	8
Supplier Deliveries	65.0	57.3	+7.7	Slowing	Faster	5

Index	Series Index Mar	Series Index Feb	Percentage Point Change	Direction	Rate of Change	Trend* (Months)
Inventories	46.9	46.5	+0.4	Contracting	Slower	10
Customers' Inventories	43.4	41.8	+1.6	Too Low	Slower	42
Prices	37.4	45.9	-8.5	Decreasing	Faster	2
Backlog of Orders	45.9	50.3	-4.4	Contracting	From Growing	1
New Export Orders	46.6	51.2	-4.6	Contracting	From Growing	1
Imports	42.1	42.6	-0.5	Contracting	Faster	2
OVERALL ECONOMY				Growing	Slower	131
Manufacturing Sector				Contracting	From Growing	1

Manufacturing ISM® Report On Business® data is seasonally adjusted for the New Orders, Production, Employment and Inventories indexes.

\*Number of months moving in current direction.

Commodities reported up/down in price and in short supply

#### Commodities Up in Price

Capacitors (2); Circuit Card Assemblies; Isopropyl Alcohol; Personal Protective Equipment (PPE) — Gloves; Resistors (2); Steel — Hot Rolled\* (5); and Steel Products (2).

#### Commodities Down in Price

Aluminum (2); Aluminum Products (3); Base Oils; Copper (2); Corrugate (2); Crude Oil (2); Diesel Fuel; Fuel; Heating Oil; Natural Gas (4); Oil Products; Plastic; Scrap (2); and Steel — Hot Rolled\* (2).

## Commodities in Short Supply

Cleaning Wipes; Hand Sanitizer; Isopropyl Alcohol; Paper Towels; Personal Protective Equipment (PPE) — Gloves; PPE — Masks; and Toilet Paper.

Note: The number of consecutive months the commodity is listed is indicated after each item. \*Indicates both up and down in price.

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## MARCH 2020 Manufacturing Index Summaries

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### PMI®

Manufacturing contracted in March, as the PMI® registered 49.1 percent, a 1-percentage point decrease from the February reading of 50.1 percent. “The PMI® contracted in March after expanding marginally in January and February. Three of the big six industries expanded, with Food, Beverage & Tobacco Products expanding strongly. Only one (Supplier Deliveries) of the PMI®’s 10 subindexes recorded expansion, down from four the previous month,” says Fiore. A reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting.

A PMI® above 42.8 percent, over a period of time, generally indicates an expansion of the overall economy. Therefore, the March PMI® indicates growth for the 131st consecutive month in the overall economy, but a return to contraction by the manufacturing sector following two months of expansion. “The past relationship between the PMI® and the overall economy indicates that the PMI® for March (49.1 percent) corresponds to a 1.8-percent increase in real gross domestic product (GDP) on an annualized basis,” says Fiore.

### The Last 12 Months

Month	PMI®
Mar 2020	49.1
Feb 2020	50.1
Jan 2020	50.9
Dec 2019	47.8
Nov 2019	48.1
Oct 2019	48.5

Month	PMI®
Sep 2019	48.2
Aug 2019	48.8
Jul 2019	51.3
Jun 2019	51.6
May 2019	52.3
Apr 2019	53.4
Average for 12 months - 50.0	
High - 53.4	
Low - 47.8	

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#### New Orders

ISM®'s New Orders Index registered 42.2 percent in March, a decrease of 7.6 percentage points compared to the 49.8 percent reported for February. This indicates that new orders contracted for the second consecutive month. This is the index's lowest reading since March 2009, when it registered 41.3 percent. "Of the top six industry sectors, three expanded, with Food, Beverage & Tobacco Products expanding strongly, and Chemical Products and Computer & Electronic Products expanding modestly. Fabricated Metal Products, Transportation Equipment and Petroleum & Coal Products are in strong contraction territory," says Fiore. A New Orders Index above 52.5 percent, over time, is generally consistent with an increase in the Census Bureau's series on manufacturing orders (in constant 2000 dollars).

Of the 18 manufacturing industries, nine reported growth in new orders in March, in the following order: Wood Products; Printing & Related Support Activities; Apparel, Leather & Allied Products; Food, Beverage & Tobacco Products; Electrical Equipment, Appliances & Components; Plastics & Rubber Products; Paper Products; Chemical Products; and Computer & Electronic Products. The nine industries reporting a decline in new orders in March — in the following order — are: Petroleum & Coal Products; Transportation Equipment; Primary Metals; Textile Mills; Nonmetallic Mineral Products; Furniture & Related Products; Miscellaneous Manufacturing; Fabricated Metal Products; and Machinery.

New Orders	% Higher	% Same	% Lower	Net	Index
Mar 2020	23.5	44.4	32.1	-8.6	42.2
Feb 2020	28.8	49.1	22.0	+6.8	49.8

New Orders	% Higher	% Same	% Lower	Net	Index
Jan 2020	24.8	54.4	20.8	+4.0	52.0
Dec 2019	18.6	51.2	30.2	-11.6	47.6

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## Production

ISM®'s Production Index registered 47.7 percent in March, 2.6 percentage points lower than the 50.3 percent reported for February, indicating a return to contraction following two months of expansion. "Two of six big industry sectors expanded, the same number as the previous month. A lack of new orders, insufficient backlog and supplier delivery restrictions contributed to reduced production output," says Fiore. An index above 51.7 percent, over time, is generally consistent with an increase in the Federal Reserve Board's Industrial Production figures.

The seven industries reporting growth in production during the month of March — listed in order — are: Wood Products; Printing & Related Support Activities; Apparel, Leather & Allied Products; Primary Metals; Food, Beverage & Tobacco Products; Chemical Products; and Electrical Equipment, Appliances & Components. The five industries reporting a decrease in production in March are: Transportation Equipment; Textile Mills; Fabricated Metal Products; Computer & Electronic Products; and Machinery. Six industries reported no change in production in March compared to February.

Production	% Higher	% Same	% Lower	Net	Index
Mar 2020	21.5	53.7	24.8	-3.3	47.7
Feb 2020	26.4	53.5	20.1	+6.3	50.3
Jan 2020	25.3	55.9	18.8	+6.5	54.3
Dec 2019	15.8	49.8	34.4	-18.6	44.8

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## Employment

ISM®'s Employment Index registered 43.8 percent in March, a decrease of 3.1 percentage points compared to the February reading of 46.9 percent. This is the lowest reading since May 2009, when the index registered 35.3 percent. "This is the eighth month of employment contraction, and at a faster rate compared to February. Among the six big industry sectors, two expanded and four contracted. Twenty-nine percent of panelist comments noted staffing-expansion plans, with the rest indicating a slowing, hiring freeze or head-count reduction," says Fiore. An Employment Index above 50.8 percent, over time, is generally consistent with an increase in the Bureau of Labor Statistics (BLS) data on manufacturing employment.

Of the 18 manufacturing industries, three reported employment growth in March: Printing & Related Support Activities; Food, Beverage & Tobacco Products; and Computer & Electronic Products. The 13 industries reporting a decrease in employment in March, in the following order, are: Petroleum & Coal Products; Textile Mills; Apparel, Leather & Allied Products; Wood Products; Transportation Equipment; Fabricated Metal Products; Plastics & Rubber Products; Primary Metals; Furniture & Related Products; Miscellaneous Manufacturing; Electrical Equipment, Appliances & Components; Chemical Products; and Machinery.

Employment	% Higher	% Same	% Lower	Net	Index
Mar 2020	8.6	70.1	21.3	-12.7	43.8
Feb 2020	11.7	69.1	19.2	-7.5	46.9
Jan 2020	11.7	66.0	22.3	-10.6	46.6
Dec 2019	11.5	63.7	24.8	-13.3	45.2

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#### Supplier Deliveries\*

The delivery performance of suppliers to manufacturing organizations was slower in March, as the Supplier Deliveries Index registered 65 percent. This is 7.7 percentage points higher than the 57.3 percent reported for February. “Suppliers continue to struggle to deliver, at a much stronger rate compared to February. The index reached its highest level since June 2018, when it registered 68.2 percent. The coronavirus pandemic was the focus of 66 percent of this subindex’s comments, with a third of those comments related to supply chain constraints from China,” says Fiore. A reading below 50 percent indicates faster deliveries, while a reading above 50 percent indicates slower deliveries.

The 16 industries reporting slower supplier deliveries in March — listed in order — are: Apparel, Leather & Allied Products; Textile Mills; Transportation Equipment; Primary Metals; Computer & Electronic Products; Paper Products; Petroleum & Coal Products; Machinery; Food, Beverage & Tobacco Products; Plastics & Rubber Products; Fabricated Metal Products; Chemical Products; Nonmetallic Mineral Products; Furniture & Related Products; Miscellaneous Manufacturing; and Electrical Equipment, Appliances & Components. No industry reported faster supplier deliveries in March.

Supplier Deliveries	% Slower	% Same	% Faster	Net	Index
Mar 2020	35.7	58.6	5.7	+30.0	65.0
Feb 2020	20.3	74.0	5.7	+14.6	57.3
Jan 2020	16.8	72.3	10.9	+5.9	52.9



Supplier Deliveries	% Slower	% Same	% Faster	Net	Index
Dec 2019	11.5	81.4	7.0	+4.5	52.2

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## Inventories

The Inventories Index registered 46.9 percent in March, a 0.4-percentage point increase from the 46.5 percent reported for February. “The index contracted for a 10th straight month, but at a slower rate. Inventories are expected to grow as disruptions in the supply chain lead to inefficiencies in material conversion and continued advance stocking to protect production schedules,” says Fiore. An Inventories Index greater than 44.3 percent, over time, is generally consistent with expansion in the Bureau of Economic Analysis (BEA) figures on overall manufacturing inventories (in chained 2000 dollars).

The five industries reporting higher inventories in March are: Printing & Related Support Activities; Miscellaneous Manufacturing; Food, Beverage & Tobacco Products; Primary Metals; and Chemical Products. The 11 industries reporting a decrease in inventories in March — listed in order — are: Apparel, Leather & Allied Products; Furniture & Related Products; Electrical Equipment, Appliances & Components; Petroleum & Coal Products; Wood Products; Textile Mills; Machinery; Plastics & Rubber Products; Transportation Equipment; Fabricated Metal Products; and Computer & Electronic Products.

Inventories	% Higher	% Same	% Lower	Net	Index
Mar 2020	20.5	55.0	24.5	-4.0	46.9
Feb 2020	14.9	66.6	18.5	-3.6	46.5
Jan 2020	18.2	61.2	20.6	-2.4	48.8
Dec 2019	17.5	58.1	24.4	-6.9	49.2

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## Customers' Inventories\*

ISM®'s Customers' Inventories Index registered 43.4 percent in March, which is 1.6 percentage points higher than the 41.8 percent reported for February, indicating that customers' inventory levels were considered too low. “Customers' inventories are too low for the 42nd consecutive month; however, the index took a step toward ‘about right’ territory in March. These inventories remain at an acceptable level to support future production output. Of note: the ‘too low’ inventory in the Food, Beverage & Tobacco Products sector,” says Fiore.

Of 18 industries, the only industry reporting higher customer inventories in March is Transportation Equipment. The 12 industries reporting customers' inventories as too low during March — listed in order — are: Apparel, Leather & Allied Products; Wood Products; Textile Mills; Paper Products; Chemical Products; Plastics & Rubber Products; Furniture & Related Products; Computer & Electronic Products; Fabricated Metal Products; Miscellaneous Manufacturing; Food, Beverage & Tobacco Products; and Machinery.

Customers' Inventories	% Reporting	% Too High	% About Right	% Too Low	Net	Index
Mar 2020	75	11.4	64.0	24.6	-13.2	43.4
Feb 2020	76	6.6	70.4	23.0	-16.4	41.8
Jan 2020	77	10.1	67.5	22.4	-12.3	43.8
Dec 2019	79	8.8	64.7	26.5	-17.7	41.1

#### Prices\*

The ISM® Prices Index registered 37.4 percent in March, a decrease of 8.5 percentage points from the February reading of 45.9 percent, indicating raw materials prices decreased for the second consecutive month, at a much faster rate. “Prices contracted in March, driven primarily by scrap steel, aluminum, corrugate, copper, heating oil and other energy sources. Prices contracted to their lowest level since January 2016, when the index registered 33.9 percent,” says Fiore. A Prices Index above 52.5 percent, over time, is generally consistent with an increase in the Bureau of Labor Statistics (BLS) Producer Price Index for Intermediate Materials.

The two industries reporting paying increased prices for raw materials in March are: Wood Products; and Computer & Electronic Products. The 15 industries reporting a decrease in prices for raw materials in March — listed in order — are: Petroleum & Coal Products; Primary Metals; Furniture & Related Products; Apparel, Leather & Allied Products; Printing & Related Support Activities; Food, Beverage & Tobacco Products; Chemical Products; Transportation Equipment; Paper Products; Fabricated Metal Products; Plastics & Rubber Products; Nonmetallic Mineral Products; Electrical Equipment, Appliances & Components; Machinery; and Miscellaneous Manufacturing.

Prices	% Higher	% Same	% Lower	Net	Index
Mar 2020	11.6	51.7	36.7	-25.1	37.4
Feb 2020	16.6	58.6	24.8	-8.2	45.9
Jan 2020	23.8	59.2	17.1	+6.7	53.3

Prices	% Higher	% Same	% Lower	Net	Index
Dec 2019	16.5	70.5	13.0	+3.5	51.7

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#### Backlog of Orders\*

ISM®'s Backlog of Orders Index registered 45.9 percent in March, 4.4 percentage points lower than the 50.3 percent reported in February, indicating order backlogs contracted after expanding for one month. "Backlogs returned to contraction territory, as a result of weak new order and new export order levels. Only one of the six big industry sectors' backlogs expanded during the period," says Fiore.

Six of the 18 industries reported growth in order backlogs in March, in the following order: Apparel, Leather & Allied Products; Wood Products; Paper Products; Nonmetallic Mineral Products; Electrical Equipment, Appliances & Components; and Chemical Products. In March, eight industries reported lower backlogs, in the following order: Petroleum & Coal Products; Primary Metals; Plastics & Rubber Products; Transportation Equipment; Miscellaneous Manufacturing; Fabricated Metal Products; Machinery; and Computer & Electronic Products.

Backlog of Orders	% Reporting	% Higher	% Same	% Lower	Net	Index
Mar 2020	90	18.1	55.5	26.3	-8.2	45.9
Feb 2020	88	21.8	57.0	21.3	+0.5	50.3
Jan 2020	88	17.1	57.2	25.6	-8.5	45.7
Dec 2019	89	12.6	61.4	26.0	-13.4	43.3

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#### New Export Orders\*

ISM®'s New Export Orders Index registered 46.6 percent in March, a decrease of 4.6 percentage points compared to the February reading of 51.2 percent. "The New Export Orders Index fell back into contraction territory after two consecutive months of growth. Only one of the six big industry sectors expanded during the period, down from three the previous month," says Fiore.

The four industries reporting growth in new export orders in March are: Apparel, Leather & Allied Products; Paper Products; Chemical Products; and Miscellaneous Manufacturing. The six industries reporting a decrease in new export orders in March, in the following order, are: Transportation Equipment; Fabricated Metal Products; Machinery; Plastics & Rubber Products; Food, Beverage & Tobacco Products; and Computer & Electronic Products. Seven industries reported no change in exports in March compared to February.

New Export Orders	% Reporting	% Higher	% Same	% Lower	Net	Index
Mar 2020	76	12.5	68.1	19.4	-6.9	46.6
Feb 2020	78	14.8	72.9	12.3	+2.5	51.2
Jan 2020	77	15.4	75.9	8.8	+6.6	53.3
Dec 2019	79	11.3	72.2	16.6	-5.3	47.3

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#### Imports\*

ISM®'s Imports Index registered 42.1 percent in March, a decrease of 0.5 percentage point compared to the 42.6 percent reported for February. "For the second consecutive month, imports were in contraction territory, at levels not seen since the summer of 2009. As was the case in the Supplier Deliveries Index comments, respondents indicated the coronavirus as the primary cause of reduced import activity," says Fiore.

The four industries reporting growth in imports in March are: Wood Products; Nonmetallic Mineral Products; Food, Beverage & Tobacco Products; and Chemical Products. The 11 industries reporting a decrease in imports in March — in the following order — are: Paper Products; Apparel, Leather & Allied Products; Primary Metals; Petroleum & Coal Products; Transportation Equipment; Machinery; Furniture & Related Products; Computer & Electronic Products; Electrical Equipment, Appliances & Components; Miscellaneous Manufacturing; and Fabricated Metal Products.

Imports	% Reporting	% Higher	% Same	% Lower	Net	Index
Mar 2020	83	16.5	51.4	32.2	-15.7	42.1
Feb 2020	85	12.2	60.8	27.0	-14.8	42.6
Jan 2020	84	13.6	75.4	11.0	+2.6	51.3
Dec 2019	85	13.3	71.0	15.7	-2.4	48.8

\*The Supplier Deliveries, Customers' Inventories, Prices, Backlog of Orders, New Export Orders and Imports indexes do not meet the accepted criteria for seasonal adjustments.

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## Buying Policy

Average commitment lead time for Capital Expenditures decreased by eight days in March to 135 days. Average lead time for Production Materials increased by one day in March to 65 days. Average lead time for Maintenance, Repair and Operating (MRO) Supplies increased by six days in March to 37 days.

## Percent Reporting

Capital Expenditures	Hand-to-Mouth	30 Days	60 Days	90 Days	6 Months	1 Year +	Average Days
Mar 2020	22	6	9	21	24	18	135
Feb 2020	22	5	7	19	28	19	143
Jan 2020	22	4	10	20	25	19	140
Dec 2019	20	5	9	19	26	21	147

Production Materials	Hand-to-Mouth	30 Days	60 Days	90 Days	6 Months	1 Year +	Average Days
Mar 2020	12	28	31	20	7	2	65
Feb 2020	10	34	28	19	7	2	64
Jan 2020	11	34	27	18	8	2	65
Dec 2019	11	33	28	20	6	2	63

MRO Supplies	Hand-to-Mouth	30 Days	60 Days	90 Days	6 Months	1 Year +	Average Days
Mar 2020	40	32	16	8	3	1	37
Feb 2020	40	38	14	6	2	0	31
Jan 2020	40	36	14	8	2	0	32
Dec 2019	40	35	15	5	4	1	37

## About This Report

DO NOT CONFUSE THIS NATIONAL REPORT with the various regional purchasing reports released across the country. The national report's information reflects the entire U.S., while the regional reports contain primarily regional data from their local vicinities. Also, the information in the regional reports is not used

in calculating the results of the national report. The information compiled in this report is for the month of March 2020.

The data presented herein is obtained from a survey of manufacturing supply executives based on information they have collected within their respective organizations. ISM® makes no representation, other than that stated within this release, regarding the individual company data collection procedures. The data should be compared to all other economic data sources when used in decision-making.

#### Data and Method of Presentation

The Manufacturing ISM® Report On Business® is based on data compiled from purchasing and supply executives nationwide. The composition of the Manufacturing Business Survey Committee is stratified according to the North American Industry Classification System (NAICS) and each of the following NAICS-based industry's contribution to gross domestic product (GDP): Food, Beverage & Tobacco Products; Textile Mills; Apparel, Leather & Allied Products; Wood Products; Paper Products; Printing & Related Support Activities; Petroleum & Coal Products; Chemical Products; Plastics & Rubber Products; Nonmetallic Mineral Products; Primary Metals; Fabricated Metal Products; Machinery; Computer & Electronic Products; Electrical Equipment, Appliances & Components; Transportation Equipment; Furniture & Related Products; and Miscellaneous Manufacturing (products such as medical equipment and supplies, jewelry, sporting goods, toys and office supplies). The data are weighted based on each industry's contribution to GDP. According to the BEA estimates for 2018 GDP (released October 29, 2019), the six largest manufacturing sub-sectors are: Computer & Electronic Products; Chemical Products; Transportation Equipment Manufacturing; Food, Beverage & Tobacco Products; Petroleum & Coal Products; and Fabricated Metal Products. Beginning in February 2018 with January 2018 data, computation of the indexes is accomplished utilizing unrounded numbers.

Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (New Orders, Backlog of Orders, New Export Orders, Imports, Production, Supplier Deliveries, Inventories, Customers' Inventories, Employment and Prices), this report shows the percentage reporting each response, the net difference between the number of responses in the positive economic direction (higher, better and slower for Supplier Deliveries) and the negative economic direction (lower, worse and faster for Supplier Deliveries), and the diffusion index. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses plus one-half of those responding the same (considered positive).

The resulting single index number for those meeting the criteria for seasonal adjustments (PMI®, New Orders, Production, Employment and Inventories) is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements, and differences attributable to non-moveable holidays. All seasonal adjustment factors are subject annually to relatively minor changes when conditions warrant them. The PMI® is a composite index based on the diffusion indexes of five of the indexes with equal weights: New Orders (seasonally adjusted), Production (seasonally adjusted), Employment (seasonally adjusted), Supplier Deliveries (seasonally adjusted), and Inventories.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. A PMI® reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally declining. A PMI® above 42.8 percent, over a period of time, indicates that the overall economy, or gross domestic product (GDP), is generally expanding; below 42.8 percent, it is generally declining. The distance from 50 percent or 42.8 percent is indicative of the extent of the expansion or decline. With some of the indicators within this report, ISM® has indicated the departure point between expansion and decline of comparable government series, as determined by regression analysis. The Manufacturing ISM® Report On Business® survey is sent out to Manufacturing Business Survey Committee respondents the first part of each month. Respondents are asked to report on information for the current month for U.S. operations only. ISM® receives survey responses throughout most of any given month, with the majority of respondents generally waiting until late in the month to submit responses in order to give the most accurate picture of current business activity. ISM® then compiles the report for release on the first business day of the following month.

The industries reporting growth, as indicated in the Manufacturing ISM® Report On Business® monthly report, are listed in the order of most growth to least growth. For the industries reporting contraction or decreases, those are listed in the order of the highest level of contraction/decrease to the least level of contraction/decrease.

Responses to Buying Policy reflect the percent reporting the current month's lead time, the approximate weighted number of days ahead for which commitments are made for Capital Expenditures; Production Materials; and Maintenance, Repair and Operating (MRO) Supplies, expressed as hand-to-mouth (five days), 30 days, 60 days, 90 days, six months (180 days), a year or more (360 days), and the weighted average number of days. These responses are raw data, never revised, and not seasonally adjusted since there is no significant seasonal pattern.

#### ISM ROB Content

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