

White Paper

COVID-19'S GLOBAL IMPACT ON SUPPLY CHAINS

A fourth round of COVID-19 research on the impacts to supply chains shows that supply management organizations are feeling bullish about 2021 and anticipate increases in revenue, CAPEX and demand.



Presented by



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For more information, contact membersvcs@ismworld.org.



About Institute for Supply Management®

Institute for Supply Management® (ISM®) is the first and leading not-for-profit professional supply management organization worldwide. Its 50,000 members in more than 100 countries around the world manage about US\$1 trillion in corporate and government supply chain procurement annually. Founded in 1915 by practitioners, ISM is committed to advancing the practice of supply management to drive value and competitive advantage for its members, contributing to a prosperous and sustainable world. ISM empowers and leads the profession through the ISM® *Report On Business*®, its highly-regarded certification and training programs, corporate services, events and the ISM Mastery Model®. The Manufacturing and Services ISM® *Report On Business*® are two of the most reliable economic indicators available, providing guidance to supply management professionals, economists, analysts, and government and business leaders.

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How the Survey Was Conducted

The Institute for Supply Management® (ISM®) Research & Analytics fourth-round survey on the impact of the coronavirus pandemic on global supply chains was conducted Dec. 22, 2020 – Jan. 11, 2021. The sampling frame was made up of ISM members and customers, as well as supply management professionals unaffiliated with ISM. The sample was randomly drawn, with 779 usable responses in the final data set.

Contact Us

Institute for Supply Management Member Services Team
309 W. Elliot Road, Suite 113
Tempe, AZ 85284-1556
P: +1 480.752.6276
E: membersvcs@ismworld.org

COVID-19's Global Impact on Supply Chains

A fourth round of COVID-19 research on the impacts to supply chains shows that supply management organizations are feeling bullish about 2021 and anticipate increases in revenue, CAPEX and demand.

In recent years, supply chains have been in the process of strengthening their immune systems to mitigate the risks of multiple threats — unprecedented trade turbulence, economic uncertainty, geopolitical events and rising labor costs. In 2020, a global health emergency provided a severe new test: the 2019 novel coronavirus (COVID-19) spread with such ferocity that the World Health Organization classified it as a pandemic on March 11, 2020.

Since its known origin in the manufacturing hub of Wuhan, China in December 2019, the outbreak resulted in hundreds of millions of documented cases worldwide, quarantined workers, temporarily or permanently closed factories, shuttered businesses, canceled events, shaken markets and gridlocked supply chains around the globe.

Institute for Supply Management® (ISM®) CEO Thomas W. Derry's apt characterization of the economic impact in the summer of 2020 remains a succinct and accurate summary of 2020 as a whole. "The economic consequences of the coronavirus outbreak shifted," Derry said, and became "more severe in parallel with the global expansion of the pandemic. What began as a supply shock due to a production lockdown in China expanded to production declines in Europe and then North America and beyond."

Derry continued, "As lockdowns (became) governments' preferred response to curtail the pandemic, (the world witnessed) massive reductions in aggregate demand." He noted that as people all over were "not driving, dining out, booking travel or commuting to the office," it created "a historic surge in unemployment claims, particularly in the hospitality sector. As the research shows, no sector and no business is unaffected by either the supply or demand shock."

To understand the pandemic's early impact, as well its evolving impact as it spread, Institute for Supply Management® surveyed members, customers and

supply management professionals unaffiliated with ISM in February, March and May 2020, as well as January 2021. Many questions were consistent across all surveys, while other questions were added as new issues and dynamics emerged throughout 2020.

While case counts soared during the fourth quarter of 2020 and into January 2021, news of approved vaccines in December 2020 brought hope. The deadly holiday surge eventually subsided, bringing lower infection rates, hospitalizations and deaths. Our January 2021 survey not only provides respondents' comparisons of COVID-19's impact to earlier periods in the pandemic — namely, February, March and May — but captures the outlook of supply management and procurement professionals as they look ahead to the rest of 2021.

2020 Winter & Spring Surveys: Key Highlights

Our February, March, and May surveys highlight how the pandemic's early stages unfolded. In each survey, we asked the fundamental question if organizations had been impacted or expected to be. Results not only show how early a vast majority of respondents were or expected to be impacted, but how the number kept growing to a near-unanimous figure (see Table 1).

Whereas the late February survey highlighted coronavirus impacts primarily related to Chinese supply chains and manufacturing, it was clear by March that supply management organizations were experiencing global disruptions pertaining to supply availability, manufacturing capacity, lead times and transport of goods. These global disruptions were beginning to impact revenues, demand and operations. By March, more than half of respondents said telework/remote work was one of the top three COVID-19 impacts to their organization. Half reported that they expected their companies' annual revenue targets would be down, on average, by 22 percent, and a third expected capital expenditures to decrease, on average, by 27 percent.

Table 1. Percentage of Organizations Impacted or Expecting Impact

Have you been / do you expect to be impacted by the coronavirus?

	Feb. 2020	March 2020	May 2020
We weren't impacted and won't be	19%	5%	3%
We were impacted or might be	81%	95%	97%

n = 628, 559, 676, respectively

ISM's May survey showed a continued decline from March results. Revenue impact was reported by 76 percent of respondents compared to 47 percent in March, and revenue targets declined by 23 percent compared to 22 percent. Capital expenditures (CAPEX) impact was reported by 61 percent of respondents compared to 36 percent in March, with spending plans cut by 35 percent, compared to 27 percent. Demand impact was reported by 81 percent of respondents, up from 57 percent in March, and demand dropped 15 percent, compared to 5 percent.

As spring gave way to summer, hopes of a crisp, "V-shaped" economic recovery diminished while COVID-19 case counts, hospitalizations, and deaths soared through a second wave of infections. An increasing number of jurisdictions across the U.S., Europe, Asia, and South America contended with mandatory mask policies, stay-at-home orders, business lockdowns, school closings, and travel restrictions to stem the tide.

Unfortunately, after the peak of the summer infection wave somewhat receded, the late fall and winter holiday season brought on a third wave of spiking case counts. In the U.S. business and government sectors applied prior lessons learned for how to operate with constraints in attempts to save lives and peoples' livelihoods at the same time. Meanwhile, the medical community continued its heroic efforts to decrease hospital days and mortality rates. Still, the economic

prognosis remained fuzzy, with only the promise of vaccine approvals and rollouts.

2021: Looking Back and Looking Ahead

With the likelihood that a vaccine-led recovery was on the way — and indications through monthly editions of the ISM® *Report On Business*® that planning organizations had honed their pandemic-era forecasting abilities — ISM launched a fourth COVID-19 survey to help generate insights into 2021.

In our January survey, we asked how respondents and their management teams felt about business for the first half of 2021 compared to the last half of 2020. Sentiment was generally positive. Forty-two percent said "better" while only 15 percent said "worse" and 43 percent said "same." In many surveys, combining "same" and "better" sentiments, which in this case is 85 percent, is a fair composite to show positive outlook. However, after what was a very difficult fourth quarter for many, it's important to note that "same" may not be positive. So, instead of combining responses, we view them separately (see Table 2).

Respondents also compared their outlook for the second half of 2021 with that of the first half. Optimism is more evident, as 64 percent said "better," 29 percent "same" and only 7 percent said "worse." Outlook for the next twelve months fared similarly, with slightly more (66 percent) indicating "better."

Table 2. 2021 Business Outlook

Please indicate how you and your management feel about ...

	Worse	Same	Better	Total
Business in the first half of 2021 compared to last half of 2020?	15%	43%	42%	100%
Business in the second half of 2021 compared to first half of 2021?	7%	29%	64%	100%
The next 12 months, overall.	8%	26%	66%	100%

n = 628, 559, 676, respectively

Table 3. Comparison of Changes in Metrics Between 2020 and 2019, 2021

Please indicate how much the following metrics have changed

	2019	2021	2021-2019 Difference
Revenue change between 2020 and:	-2.2	7.8	10
Demand change for your products/services between 2020 and:	1.1	10.0	8.9
CAPEX change between 2020 and:	-3.8	4.0	7.8
Organization's head-count change between 2020 and:	-2.6	4.9	7.5
Baseline production capacity change between 2020 and:	3.2	6.7	3.5
Labor rate (with benefits) change between 2020 and:	3.9	5.8	1.9
Prices paid for inputs change between 2020 and:	5.7	6.8	1.1

n = 323, Note: The three biggest drops from 2019 to 2020 highlighted in red; the three largest gains from 2020 to 2021 highlighted in green.

Diving deeper into business outlook, we segregated out three key ingredients: new orders for exports; imports of inputs; and expected profit margins for the first half of 2021. Responses skewed positive, though not dramatically, with 50 percent claiming exports and imports would be the same, and 42 percent saying profits would also be the same. Respondents expecting better results averaged 34 percent, while those predicting worse averaged 19 percent.

We then looked at a detailed breakdown of key business metrics comparing 2020 to 2019 actuals and to 2021 expectations (see Table 3). The drop in 2020 results from 2019 levels, and the upturn expected in 2021 versus 2020 were expected, but perhaps the level of increase in demand, revenue, and CAPEXs are more positive than many anticipated.

Consistent with two prior 2020 surveys in March and May, we asked about top COVID-19 concerns for 2021. Respondents could select their top three choices out of 25 offered, plus the option to share one choice not listed (see Table 4).

Upon quick glance of any one survey's top responses, the list of most popular choices may not surprise. However, looking across the three surveys from the perspective of the top 14 responses for January 2021, there are surprises in terms of which responses became more popular, leading one to assume that the ongoing effect of a prolonged market contraction is causing business leaders to remain cautious of future disruptions, even as odds increase that the planet is poised to escape the COVID-19 pandemic.

For example, the response rate for "business disruptions affecting employee productivity" was predictably high in all three surveys, though we might have expected the rate to decline by January 2021. Instead, it inched up to 43 percent from 42 percent in May 2020, perhaps because business leaders have come to expect some sort of disruption after a tumultuous year of natural disasters and civil unrest alongside a pandemic.

Even more dramatic are increases in the percentage of respondents counting "planning for risk mitigation and uncertainty" among their top three concerns, even after nearly a year of almost every enterprise doing a version of it, and "fearing illness and health and safety of employees," even as increasing volumes of vaccines were being distributed.

Other concerns were increasingly mentioned by respondents over subsequent survey rounds. The combined effects of health precautions and furloughs for work forces, capacity-impacted manufacturing facilities, clogged supply chains, and a patchwork of business lockdowns around the globe led to high concern responses, in ranked order, for "delays in shipment/supply," "business disruptions affecting operations," "business disruptions affecting employee productivity," "limited availability of raw materials or supply," "business disruptions creating production limitations," and "increased cost to supply management."

While "managing remote work" has decreased as a top concern over survey rounds, it's no less of a priority for

Table 4. Top COVID-19 Concerns (In Order of the Top 14 January 2021 Responses)

What are your organization's top concerns for 2021 related to COVID-19?

	Round 4 Jan. 2021	Round 3 May 2020	Round 2 March 2021	Total
Delays in shipment/supply	56%	10%	23%	100%
Fearing illness and health and safety of employees	52%	12%	15%	100%
Business disruptions affecting operations	51%	31%	29%	100%
Planning for risk mitigation and uncertainty	51%	20%	14%	100%
Business disruptions affecting employee productivity	43%	42%	32%	100%
Limited availability of raw materials or supply	43%	29%	20%	100%
Business disruptions creating production limitations	42%	19%	21%	100%
Increased cost to supply management	42%	17%	15%	100%
Managing business growth and demand	39%	n/a	n/a	100%
Reducing expenses	38%	n/a	n/a	100%
Unexpected changes in inputs pricing	38%	n/a	n/a	100%
Negative impact on organization's financial viability	37%	47%	36%	100%
Negative impact on macroeconomy	34%	n/a	n/a	100%
Managing remote work	31%	42%	57%	100%

n = 604, Note: Each row's most frequent response is highlighted.

planning and executing smartly. Long-term impacts of the pandemic, Derry says, "will alter virtually every aspect of how we think of work, from the restructuring of global supply chains to less office-centric work cultures enabled by technology. Business travel won't go away, but it will decline significantly as virtual meetings obviate the need for some face-to-face gatherings. I would not be surprised if the business handshake gives way to the bow, already common in much of Asia."

For a more granular understanding of potential lingering impact as companies recover from the pandemic, we inquired about the expected impact of the coronavirus on operations during each 2021 quarter (see Table 5). A plurality felt impact would be "moderate" in the first quarter (48 percent) and Q2 (45 percent) and "minimal" in Q3 (44 percent) and Q4 (36 percent). The percentage who said "severe" dropped consistently from Q1 (19 percent) to Q4 (1 percent), while the percentage who said "none," or no impact, rose steadily from Q1 (3 percent) to Q4 (22 percent).

Table 5: 2021 Expectations of COVID Impact by 2021 Quarter

Row %	None	Minimal	Moderate	Severe	Unknown	Total
2021 – Q1	3%	27%	48%	19%	3%	100%
2021 – Q2	4%	35%	45%	8%	7%	100%
2021 – Q3	13%	44%	21%	2%	20%	100%
2021 – Q4	22%	36%	13%	1%	27%	100%

n = 587 to 595, Note: Each row's most frequent response is highlighted: Moderate impact in red, Minimal in green.



For a greater understanding of geographic discrepancies, companies surveyed were asked to share the impact on lead times by quarter. Geographic options included the U.S., Mexico, Canada, Europe, China, Japan, Korea, India, and the Middle East.

For Q1 2021, the percentage of responses predicting “shorter” lead times was very low across all regions, ranging from 1 percent for Japan to 4 percent for the U.S. Those who said “same” ranged from 25 percent for Europe to 44 percent for Canada, and those who predicted “longer” included a low of 27 percent for the Middle East and a high of 59 percent for Europe. Those claiming “unknown” were a small subset, with a weighted average of 9 percent across the regions. Among those expecting longer lead times in Q1, when asked their specific expectations, responses ranged from an average of about 176 percent of normal for Canada, Mexico, and the U.S. to an average of 203 percent for China.

Viewing results for Q2 and Q3 2021, there was an expected shift of

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— THOMAS W. DERRY
Institute for Supply Management®



responses toward same and shorter lead times, and by Q4, responses for predicted wait times were generally positive. Respondents who said “shorter” ranged from 15 percent for Japan to 27 percent for the U.S., and “same” ranged from 28 percent for the Middle East to 45 percent for Japan. Expectations for longer lead times ranged from a low of 5 percent for Korea and Canada to a high of 15 percent for Europe. An average of 20 percent of respondents were unsure for each region.

Given companies had roughly three quarters to adjust to the pandemic’s impact on supply chains by the time of our fourth survey, we asked if companies had adjusted input inventories in response to coronavirus. Of 528 respondents, nearly half (49 percent) were “intentionally holding more than usual.” Responses were spread fairly evenly over the other choices: “no adjustment” (18 percent), “intentionally holding less than usual” (14 percent), “unintentionally holding less than usual” (12 percent), and “unintentionally holding more than usual” (7 percent).

Table 6: Presence of Risk-Mitigation Plan for Large-Scale Supply Disruption

	We have a plan, but it hasn't been activated yet	We do NOT have a plan and we don't expect any impact	Yes, we had a plan and things are going almost/according to plan	Yes, we had a plan, but it's not working out	No, we don't have a plan to mitigate supply disruptions	Total
U.S.	26%	6%	53%	6%	10%	100%
Mexico	21%	16%	42%	8%	13%	100%
Canada	26%	14%	44%	3%	13%	100%
Europe	24%	12%	46%	7%	12%	100%
China	18%	10%	47%	11%	14%	100%
Japan	24%	14%	45%	5%	12%	100%
Korea	22%	18%	42%	5%	14%	100%
India	16%	15%	40%	10%	19%	100%
Middle East	16%	17%	41%	8%	17%	100%

n = 604, Note: Each row's most frequent response highlighted in dark green, second most in light green, except in case of a tie.

Table 7. Methods to Help 2021 Reopening (Top 10, Ranked by January 2021 Responses)

Which of the following are elements of your plan for operating in 2021?	Jan. 2021	May 2021
We will disinfect work areas on a regular basis	57%	59%
Employees that exhibit symptoms of illness will immediately be sent home	52%	52%
We will limit the size of in-person meetings	51%	49%
We have/are putting in place policies that allow for more remote work	47%	40%
We will make available gloves and/or masks for returning employees	46%	57%
Disinfecting supplies will be more readily available	44%	51%
Employees who can work remotely may be offered the option to do so long term	40%	31%
Employees who can work remotely may continue to do so for a short time	39%	43%
We will have periodic temperature checks of employees	37%	41%
We will need to adjust our office layout to allow for social distancing	29%	33%

n = 779, Note: Each row's high response highlighted.

Experiences from 2020 were likely a wake-up call for many organizations who had not prioritized risk management and business-continuity planning. We asked if organizations had “a risk-mitigation plan for large-scale supply disruptions” as of mid-January 2021. When given options about whether or not a plan existed and, if activated, the degree to which it was effective, the most frequent response across nine key countries and regions, was “yes, and things are going almost/according to plan” (see Table 6).

The options for “no, we don’t have a plan” averaged a double-digit percentage response rate, ranging from 10 percent in the U.S. to 19 percent for India. Responses of “yes, we had a plan but it’s not working out” were slightly less frequent, with a low of 3 percent for Canada and a high of 11 percent for China.

The survey uncovered what proportion of firms’ operations are at normal capacity in each of the same nine areas. Answers ranged from a low of 69 percent in the Middle East, to a high of 87 percent in the U.S. and 86 percent in China. The other regions had a weighted average of 76.8 percent.

Suppliers and customers changing payment terms has been somewhat of a trend during the pandemic. When asked if customers had changed payment terms in response to the pandemic, 54 percent of respondents said “no, and not considering this.” For respondents’ relationships with their own suppliers, 47 percent indicated “no, and not considering” changing terms with suppliers, while 32 percent said “yes, on a case-by-case basis.”

In terms of operational methods intended to help organizations reopen, top responses from May 2020 to January 2021 were somewhat consistent (see Table 7). The top three choices in January 2021 of “disinfect work areas on a regular basis,” immediately send home “employees that exhibit symptoms of illness,” and “limit the size of in-person meetings” were the Nos. 1, 3 and 5 responses in May 2020.

Conclusion

Derry says that perhaps the biggest supply management lesson from the COVID-19 pandemic is the peril of overemphasizing total lowest cost. “In a supply disruption, the business is worried about lost revenue and forgone sales,” he says. “In other words, supply management needs to redefine itself as the critical enabler of the corporate top line, not merely a contributor to the corporate bottom line.”

He continues: “No doubt, there will be permanent changes as a result of the pandemic. We will be better prepared — as nations build up strategic medical stockpiles and as governments learn lessons about which policy actions worked and which didn’t. Government and industry will work together for rapid development of future vaccines. And I suspect that in future crises, we will make smarter distinctions on economic activity — not focusing so much on ‘essential’ versus ‘non-essential’ work and more on ‘safe’ versus ‘unsafe’ work, which would lessen the economic impact.”