

# Global supply chains

Supply delays hit unprecedented levels, and look set to get worse

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- Pressures on supply chains are increasing and global disruptions are likely to get worse as summer approaches and the economy booms
- Disruptions have converged at the same time in three important pillars of the global economy – shipping, computer chips, and plastics
- Supply delays most widespread in 20 years
- The system will ultimately adjust, but that requires new investment in ports and capacity

If you're wondering why your new couch is going to take three or four months to arrive, not just a few weeks, the reason is simple: You are at the very end of a global supply chain that has buckled.

For similar reasons, GM and Ford and other automakers around the world are slowing down manufacturing, temporarily shutting auto plants, and furloughing workers.

A recovering world economy that depends upon the synchronized, smooth running of global supply chains is now being slammed by what has turned out to be synchronized disruptions.

Although the massive Ever Given container ship has been unstuck from the Suez Canal, its continuing impact is only adding to the woes.

As government stimulus seeks to fuel a hyper recovery and the world economy accelerates over the rest of this year, the pressures on supply chains are increasing and disruptions are likely to grow as we head into summer.

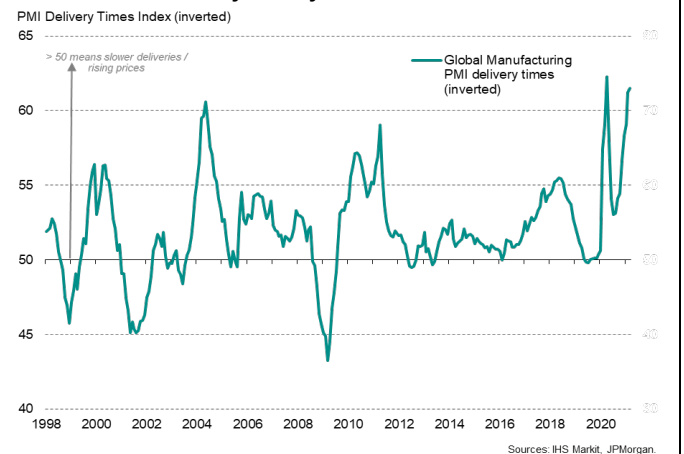
## Stretching supply chains

Global prosperity over the last several decades has been built on the ever-more-complicated and intricate system of supply chains that tie raw material suppliers, manufacturers, distributors, and consumers together.

[Recent IHS Markit worldwide PMI surveys](#) of manufacturers find that the “stretching of supply chains” over the last year has extended delivery times to levels “unsurpassed in over 20 years of data availability.”

### Box 1: PMI supply and demand indicators

Over the past year manufacturers have reported more worldwide supply chain delays than ever before in over two decades of PMI survey history



These delays have been fueled by demand for goods surging at a rate not seen for over a decade



[PMI surveys](#)

[Click here to find out more about our PMI business surveys and related economic commentary.](#)

With stimulus dollars flowing, the pressures will increase as consumers come out of lockdowns with pent-up demand as well as a lot of liquidity -- the

household savings rate is now 18% compared to the normal 7%.

Three disruptions have converged at the same time – in shipping, in computer chips, and in plastics. Each of these chains are among the most important foundations of the modern economy.

The granular data tracked by IHS Markit - in shipping, chemicals, automotive, and economics - demonstrates the extent of the disruptions.

## Container crunch

The great boiler room of today's globalization is containerization. The massive container ships - about 5,400 altogether - ply the oceans, carrying to the world's markets at any given time about 20 million containers, filled with everything from tennis shoes and anti-virus masks to laptop computers, auto parts, and solar panels. Asia is the source of much of the goods, most notably China, home to seven of the 10 largest container ports in the world.

### ⇒ Maritime and Trade

[Read more of IHS Markit's \*trade related commentary\* and learn about the \*Global Trade Atlas and trade forecasting\*.](#)

The [turmoil in shipping](#) began early in 2020 when the pandemic shut China down for two months. That meant the evaporation of expected shipments of goods to the rest of the world. As China recovered, North America and Europe shut down.

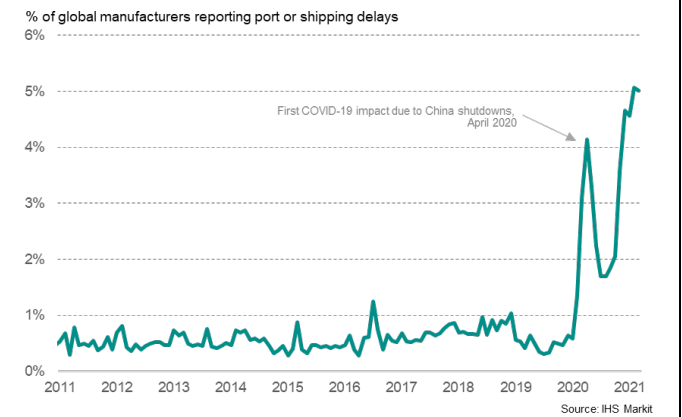
With people stuck in their homes, their spending on such services as travel plummeted, while spending on electronics, home furnishings, and many other goods shot up. That, combined with the urgent need for medical supplies and protective gear to fight the pandemic, meant a swelling flotilla of container ships sailing towards the United States.

The adjacent ports of Los Angeles and Long Beach, which handle half of total U.S. imports from Asia, have been overwhelmed, with no slack time to catch up on the backlog. The congestion was made worse by the restriction and distancing that Covid has placed on work schedules.

Huge container ships continue to be stacked up outside those ports, unable to get to berths, meaning that goods are not being landed to meet the surging demand. A Federal Maritime Commissioner described the West Coast back-ups as "the worst we've ever seen."

## Box 2: PMI survey supply delays due to container shortages and port congestion

**By far the most commonly cited causes of longer delivery times have been shipping delays and port congestion**



The impact can be measured in [trade and shipping costs](#). Containerized shipping to the West Coast was 30% higher in February 2021, over 2020, and shipping rates from Asia to the East Coast, including surcharges, are up as much as five times over last year.

The shipping disruption has been further aggravated by an imbalance between where the containers are and where they are needed.

## Semiconductor shortage

The second major disruption is of computer chips, which is hitting the auto industry. This is made worse by the tangle in shipping. But the main reason is the surge in competing demand for computer chips for electronics and 5G and automobile industry, along with the overall rapid recovery in China.

Then, as things happen, a major computer chip factory in Japan caught fire. An extended drought in Taiwan, source of 60% the world's chips by value, has created another crick in the supply chains, this for the pure water necessary for chip manufacture.

The "chip famine" [continues to play havoc with auto manufacturing](#). Today's cars are also electronic devices that run on computer chips – and increasingly so. Owing to the shortage of chips, the major automakers in North America, Europe, and China have had to [temporarily halt some production](#).

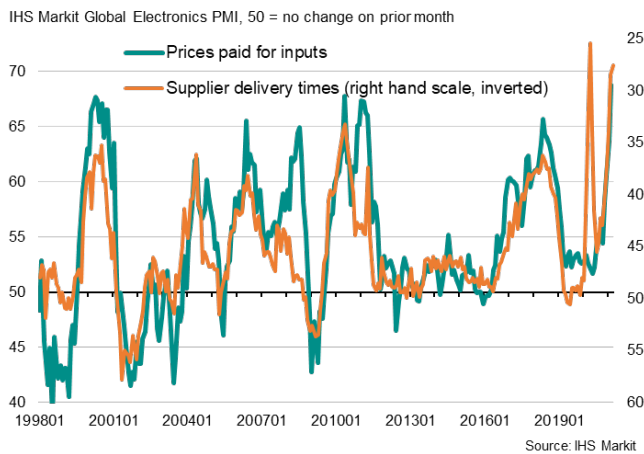
### ⇒ Autos

[Read more \*automotive commentary\* from IHS Markit and learn about the \*Light-vehicle production tracker\*.](#)

Even though chip manufacturers have announced new investment in capacity, this will take time; IHS Markit estimates that this shortage, at least for the [auto industry](#), will persist into next year.

### Box 3: Semiconductor shortages

Shortages of electronic components are leading to higher prices, with electronics goods producers' supply delays and input costs rising in March 2021 at rates unprecedented in over 20 years of IHS Markit PMI data



[IHS Markit](#) estimates that over one million fewer light vehicles will have been produced in the first quarter of 2021 because of semiconductor shortages, and the developing second quarter picture sees an increase to 702,000 units up from 600,000 units a week ago. Supplies of semi-conductors are likely to stabilise only in the fourth quarter, with additional supply, which could compensate for volume lost in the first half of the year, being delayed until early 2022.

### Texas weather factor

The weather instigated the third disruption. Texas was hit by a deep freeze for which it was not operationally prepared. The electricity supplies necessary to keep natural gas wells flowing were cut off, shutting down the gas production required to operate the power plants in the first place. In a vicious circle, that meant still less electricity. Texas went dark.

#### ⇒ Energy

[Read more IHS Markit energy research.](#)

The Texas petrochemical plants, which produce a substantial part of the world's plastics, had to rush to implement emergency shutdowns to avoid accidents or lasting damage to the facilities. These factories are coming back into operation, but slowly and with great

care, and that will take many more weeks and then additional weeks to replenish supplies.

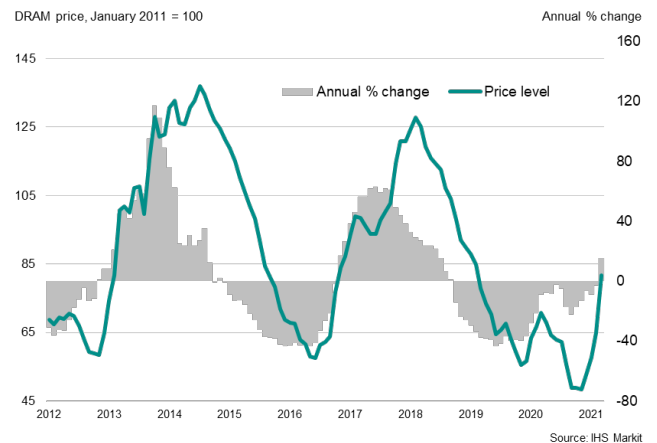
The result has been a [widespread shortage of plastic materials](#) that are used to make such things as furniture, mattresses, and car seats. Alternative supplies that might be brought in from Asia are stuck in the same Pacific maritime traffic jam. No flexible foam means further shutdowns in auto plants. With fewer car seats, fewer cars to go to dealers.

#### ⇒ Chemicals

[Read more chemicals research and commentary from IHS Markit.](#)

### Box 4: Prices of DRAM

DRAM prices are just one component for which the price has risen sharply since the start of the pandemic



The semiconductor demand boost resulting from the COVID-19-induced shift to remote working and adoption of 5G technology are also contributing to shortfalls in a key semiconductor component: dynamic random-access memory (DRAM), which is used in a range of consumer devices such as mobile phones and laptop computers. DRAM manufacturers concentrated in Taiwan are reluctant to increase capital expenditure in response to what they regard as a temporary surge in demand, contributing to higher prices and longer supply times. Consumers in North America and Europe thus face shortages in home electronics.

#### ⇒ Purchasing & Pricing

[IHS Markit monitors a vast array of industrial prices through its Materials Prices Index.](#)

## Outlook for supply chains

Then the huge Ever Given container ship got caught sideways in the Suez Canal, blocking passage in that critical shortcut that saves 6000 miles in the journeys between Asia and Europe.

### ⇒ Suez Canal further reading

⇒ [Indicators of supply chain pressures](#) *The six-day grounding of the Ever Given in the Suez Canal from 23 to 29 March highlighted the fragility of global supply chains. The grounding may have been a 'black swan' – unforeseeable – but supply chain pressures are more like 'grey rhinos' – indicators are available to monitor supply chain pressure. This report puts the Ever Given into the larger context of rising pressure in containerised sea trade and potential broad-ranging economic implications*

This [added yet another level of disruption to global supply chains](#) – jumbling schedules and pushing congestion up to what is called “critical levels” in European ports already struggling with overload.

The interconnected pressure on supply chains is increasing as the economic recovery gains pace. Manufacturing of all kinds will be hampered by shortages in the months ahead. Port congestion will disrupt the complex flows of auto components. Trucking, which picks up the containers at ports, is stretched to the limit in the United States.

“I’ve never before seen a situation where every sector of the [transportation] industry is slammed,” is the way one trucking executive put it. Meanwhile, the shortage of computer chips is impeding the manufacture of new trucks.

The global supply chains have been a great engine of economic growth, indeed essential to the performance of the world economy. But they are now strained in a way that has never happened before.

The system will adjust, but it will take new investment in capacity and ports, and that will take time. Companies will re-examine their sourcing strategies, seeking through diversity to reduce disruption risk, but that will add complexity.

Some supply lines will be shortened as some production is re-established closer to final manufacturers and consumers, but that will involve a trade-off between cost and resilience.

Exports from China to Europe are beginning to be shifted from ships to China’s Belt and Road rail system, but that adds only limited capacity.

Meanwhile, the great economic recovery from the pandemic – fed by vaccinations, pent-up demand, and stimulus – will over the next several months put increasing strain on the links that tie the world together in supply chains. In other words, don’t expect that couch anytime soon.

### ⇒ Supply chain

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### ⇒ Life Sciences

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