



Economics Group

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COVID-19: Where Are the Dominoes in the U.S. Supply Chain?

Foreign disruptions could adversely affect the chemical products and the transportation equipment industries, which are both important cogs in the United States supply chain.

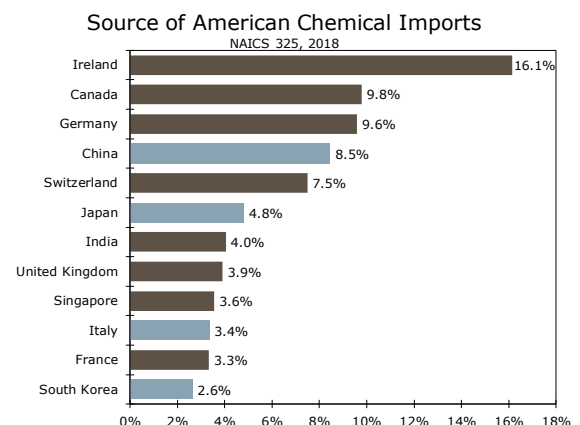
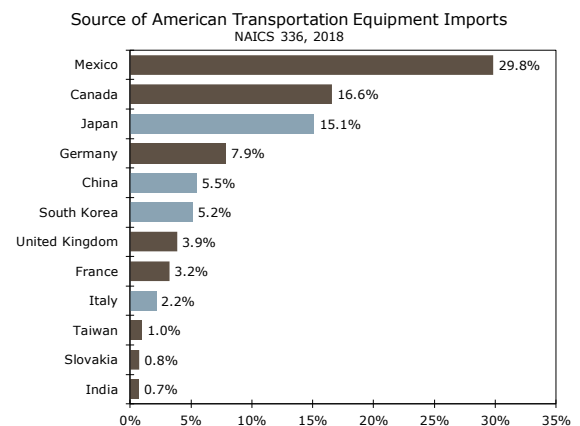
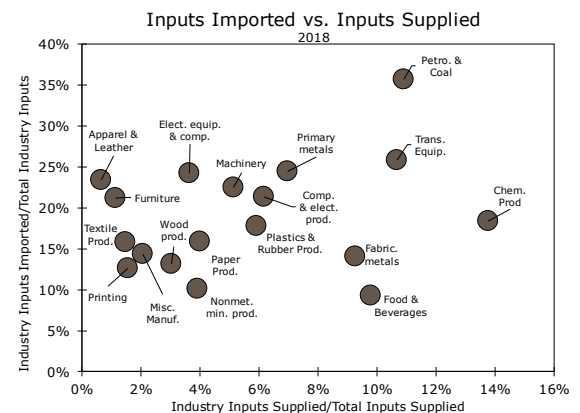
Keep an Eye on Chemicals and Transportation Equipment

In the [report](#) we published on February 12, we discussed which American industries rely on inputs imported from China and from all foreign economies more broadly. If production in an important American industry were to grind to a halt due to supply chain disruptions originating from abroad, then a domino effect could take hold in the U.S. industrial sector. In this latest [installment](#) on the economic effects of the COVID-19 outbreak, we focus on which American industries could be the first dominoes to fall in a potential lockup of the U.S. supply chain.

The top chart measures the importance of an American industry in the American supply chain versus the amount of inputs that the industry imports. For example, producers of chemical products in the United States account for roughly 14% of the inputs that American industries use (horizontal axis). Furthermore, the American chemical products industry imports more than 18% of its inputs (vertical axis). Therefore, a shutdown of production in the American chemical products industry due to supply chain disruptions from abroad has the potential to adversely affect production across the overall American industrial sector. The petroleum & coal products industry and the transportation equipment industry, which have relatively high degrees of exposure to imported inputs, also are important sources of inputs for other American industries.

Drilling down further shows that the transportation equipment industry and the chemical products industry could potentially be the first dominoes to fall in the U.S. industrial sector. Specifically, the transportation equipment industry relies on Japan for 15% of its imports, South Korea for 5% and Italy for another 2% (middle chart). If these countries were to join China (6% of the industry's imports) in curtailing production, then production in the U.S. transportation equipment industry could eventually grind to a halt. For example, in 2011 American motor vehicle assemblies tumbled 10% following the Fukushima nuclear disaster that crippled Japan's auto parts industry. A slowdown in U.S. transportation equipment production could have adverse knock-on effects on other American industries, given its large weight in American supply chains (top chart, x-axis).

With a combined share of 19%, China, Japan, Italy and South Korea are also important sources of chemical products imports (bottom chart). Given its large weight in the industrial supply chain in the United States (top chart, x-axis), an inability of chemical products producers to source inputs from these countries could have adverse consequences for production in the overall American industrial sector. In contrast, the petroleum & coal products industry appears to be relatively insulated from foreign disruptions. The industry sources 6% of its imports from South Korea (refined petroleum products), but the other countries supply very little inputs to this American industry.



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