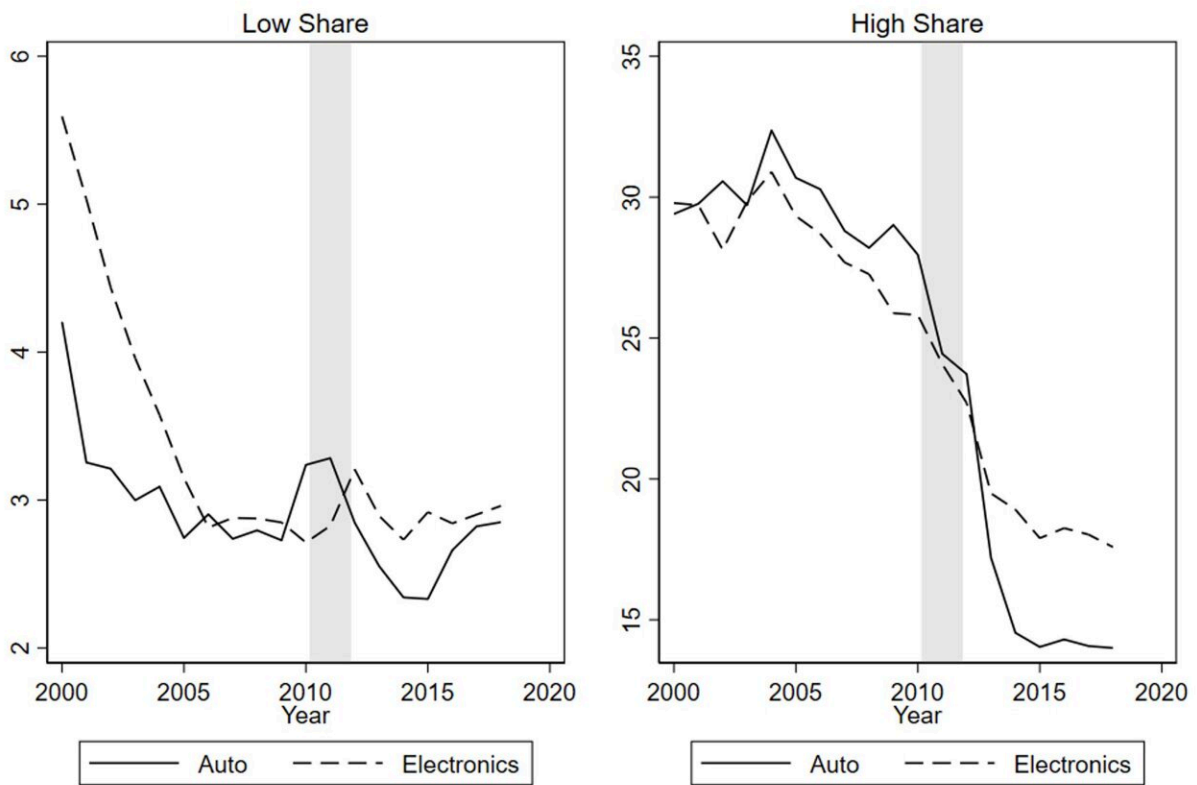


Global supply chains remain resilient in the wake of natural disasters

July 19 2022, by Christine Clark



Country share of imports from Japan in auto and electronics (average). Credit: World Bank

While many U.S. policy makers are calling for reshoring and nearshoring to combat trade disruptions caused by COVID-19, new University of

California San Diego School of Global Policy and Strategy research suggests retrenchment of global supply chains is unlikely to happen in the post-pandemic context.

A study from economist Caroline Freund, dean of the School of Global Policy and Strategy, is the first to examine the long-term consequences [natural disasters](#) have on [global supply chains](#). The paper uses detailed international trade data for two major Japanese export sectors—automobile and electronics—to study whether in the aftermath of the 2011 earthquake in Japan, importers more dependent on Japan before the earthquake behaved differently from less dependent importers.

The research, published by *International Monetary Fund Economic Review*, reveals that importers dependent on Japan before the earthquake reduced their dependence on Japan in its aftermath, but they did not reshore, nearshore, or increase import diversification in either auto or electronics.

In fact, the importers highly dependent on specific products from Japan before the 2011 earthquake increased total imports of those products, choosing to intensify offshoring rather than reshoring.

Similar to the shocks of COVID-19, the 2011 earthquake had major disruptions to trade. For example, a shortage of over 100 parts manufactured in Japan left Toyota's North American operations operating at 30% capacity for several weeks.

"The research assesses how firms behave when faced with new risks," said Freund, former global director of Trade, Investment and Competitiveness at the World Bank. "While there is evidence the shock led to a partial reconfiguration of supply chains, there is no evidence that supply chains were increasingly reshored or nearshored. In fact, any

manufacturing that did move out of Japan shifted to low-cost developing countries. Similarly, today we are seeing that with disruptions to exports from China, manufacturing is moving to countries such as Vietnam, which is not exactly closer to the U.S."

Freund added that while manufacturing at home or importing from neighboring countries is touted as a way to build resilience among supply chains, firms in the study consistently opted to offshore—choosing to keep costs down by selecting low-cost suppliers that could produce at scale.

"These data suggest that current U.S. initiatives to ramp up nearshoring and reshoring as a way to fight inflation would likely hike up prices more," said Freund.

In addition to economic fundamentals, another reason offshoring remained popular among firms after the 2011 earthquake is that supply chain relationships are not easy to replace.

"Reliable suppliers who repeatedly meet quality standards and customization needs and deliver goods on time remain linked with buyers," Freund said. "Precisely because these quality relationships are hard to find, they are difficult to replace."

One key difference between the [earthquake](#) in Japan and the COVID-19 pandemic is that factories were destroyed in the former but not in the latter. Thus, [firms](#) today are more likely to favor keeping production where it is, rather than incurring the costs of building new facilities closer to home or in other countries.

More information: Caroline Freund et al, Natural Disasters and the Reshaping of Global Value Chains, *IMF Economic Review* (2022). [DOI: 10.1057/s41308-022-00164-w](https://doi.org/10.1057/s41308-022-00164-w)

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