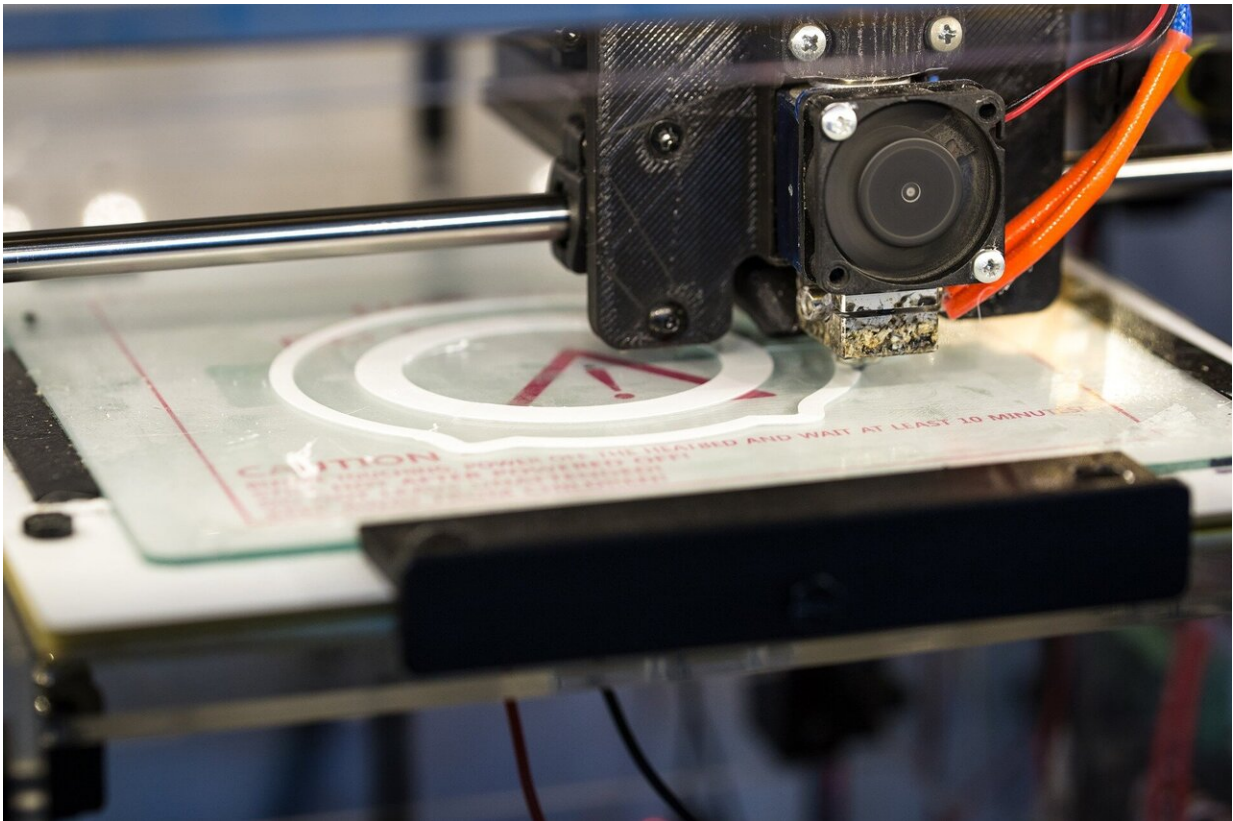


Despite fears, 3D printing has positive effects on global trade

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3-D printing technology enables economies to produce goods locally, so conventional wisdom has been that it would dramatically reduce international trade; however, new University of California San Diego

and World Bank research presents robust evidence that 3-D printing expanded trade.

The paper coauthored by Caroline Freund, economist and dean of the School of Global Policy and Strategy, finds that 3-D [printing](#) changed production processes, but supply chains remained intact. The study is the first to examine the impact 3-D printing has on trade.

Published in the *Journal of International Economics*, the paper looks at the production of hearing aids—a good most commonly produced by 3-D printing.

The results reveal that the shift to 3-D printing led to a doubling or near doubling in producers' exports after five years and the technology was the main cause for the rise in exports.

Freund and co-coauthors also examined 35 other products, such as running shoes, aircraft parts and prosthetic limbs that are increasingly being 3-D printed and they found similar patterns.

"The technology is a boon, not a curse to trade," Freund said. "A country's exports of hearing aids increased more than trade in other similar goods following the adoption of 3-D printing by manufacturers there. The new production technology in combination with trade means that consumers around the world suffering hearing loss are benefitting from better and often cheaper hearing aids."

One reason behind the expansion is that printing hearing aids in high volumes requires a large investment in technology and machinery. The countries that were early innovators—Denmark, Switzerland and Singapore—dominate exports of the good, while middle-income economies such as China, Mexico and Vietnam also have been able to substantially increase their market shares.

In addition, hearing aids are lightweight products, which makes them fairly cheap to ship internationally. The same is true for the other products the authors examined—lighter products are associated with more trade growth.

These results are based on comparisons of the growth of the 3-D printed products to other similar goods. The authors also accounted for trends and other factors that could skew the data.

"Policymakers often view 3-D printing as a means to shorten supply chains when in fact it is more likely to enhance trade and reshape supply chains," said Freund, former global director of Trade, Investment and Competitiveness at the World Bank.

While the analysis of 3-D printing's impact on trade is positive, it has the possibility of being short-lived. If 3-D printers become more accessible to local producers or even consumers in some sectors, production could be more localized, hindering development opportunities through trade.

The study "Is 3-D printing a threat to [global trade](#)? The trade effects you didn't hear about" is coauthored by Alan Mulabdic, economist for the Equitable Growth, Finance and Institutions' Chief Economist's Office at the World Bank, and Michele Ruta, lead economist at the World Bank.

More information: Caroline Freund et al, Is 3D printing a threat to global trade? The trade effects you didn't hear about, *Journal of International Economics* (2022). [DOI: 10.1016/j.jinteco.2022.103646](https://doi.org/10.1016/j.jinteco.2022.103646)

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