Why and how to fix the 'one bad apple' in supply chains

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For certain products, branding really matters. If you're selling consumer goods such as coffee, clothing, or shampoo, standing out from the competition is one of the keys to survival. Then there are bulk agricultural goods. Take Washington State apples or Florida oranges, for example. Each grower's fruit gets mixed in with those of neighboring growers before shipping to market. The produce can't easily be identified as coming from, say, Farmer Brown, which means that Farmer Brown isn't as concerned as he might otherwise be about the quality of his fruit.

Stanford GSB finance professor Timothy James McQuade calls these products without an individual brand "untraceable goods," and points out that the negative impact of such supplier anonymity can range from bruised apples to human tragedy.

Dark tales lie behind some unbranded imports. In 2015, reporters from the Associated Press uncovered a human trafficking scandal in which thousands of poor workers were enslaved and forced to work on fishing boats in Southeast Asia. The fish they caught ended up in U.S. supermarkets and pet food factories. The reporting, which won a Pulitzer Prize, resulted in 2,000 slaves being freed. The fishing companies interviewed by the AP claimed it was difficult to police subcontractors. After an internal investigation, food giant Nestlé admitted that its Thai seafood suppliers had abused workers, and said it would impose new requirements on its vendors.

In a new study, McQuade and coauthors Stephan Salant of the University of Maryland and Jason Winfree of the University of Idaho delve into solving the quality problems that sometimes arise with untraceable goods, focusing in particular on China. Their solution: more governmental regulation by the countries where the suppliers are based.

The U.S. buys a significant amount of untraceable goods from China. In 2008, imports from China accounted for 60% of the apple juice sold in the U.S., more than 50% of the garlic, and 10% of the shrimp, according to the U.S. Department of Agriculture (USDA). "Over the last decade," the researchers write, "Chinese firms have exported toys, drywall, infant formula, toothpaste, cold medicines, blood thinners, pet food ingredients, and other products laced with lead, antifreeze, and other poisons." Product recalls by the U.S. Consumer Product Safety Commission have affected as much as 10% of China's monthly toy exports to the U.S. and 20% of its furniture imports.

The challenge is even greater for Chinese agricultural imports, because production is spread among millions of small farmers, says McQuade. China has some 400,000 food or feed manufacturers, of which only about 15,000 are registered, making them legally eligible to export, according to the U.S. Food and Drug Administration (FDA). Yet McQuade and his colleagues point out that more than one third of U.S. imports from China come from non-registered firms. "China doesn't seem to implement strict quality controls itself," McQuade explains. The result is inconsistent quality.

"China … accounts for a disproportionately large share of imports refused entry to the United States" by the FDA, McQuade and his colleagues write. In 2007, China accounted for 5.8% of all agricultural imports, but 8.6% of FDA refusals.

What's the best way to encourage producers of these unbranded goods to

improve the quality of their products? Previous research has suggested consolidating production among a smaller number of players. McQuade and his colleagues reject that solution, arguing that having fewer producers would lead to higher prices for consumers. The better option, they say, is government intervention, in the form of strong domestic regulations. China does have an FDA-equivalent, but it has been the focus of much controversy in recent years. In 2007, the government executed the former head of the State Food and Drug Administration, after authorities determined that he'd taken bribes in exchange for approving medicine that had not been tested.

McQuade believes a stronger regulator in China "would increase the profits of all Chinese firms and increase the welfare of world consumers," because consumers would be getting better goods.

The same theory applies to U.S. policy as well, the researchers contend. For years, the USDA has advocated stronger quality standards for a range of domestic produce—Florida oranges, Michigan cherries, and Texas grapefruit, to name a few—but those efforts have been blocked by the antitrust arm of the Department of Justice, which argues that setting such standards would harm consumers by raising prices and limiting volume.

But McQuade's research finds that imposing quality standards in just one jurisdiction is good for all consumers. Those who continue to buy from producers in regions where regulations are lax benefit because prices drop even though quality remains unchanged. And those who buy goods produced in areas with strong regulations might end up paying more, but they'll almost certainly see an improvement in quality. As the researchers put it, "Unilaterally imposed minimum quality standards always benefit consumers."

Provided by Stanford University

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