

Small Fries Only?! Supply Chain Disruptions to Japan

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Customers at McDonald's in Japan have been unable to buy as many french fries as they wanted since mid-December 2021. Port infrastructure and shipping issues, as opposed to production limitations, resulted in supply constraints that are impacting food service providers in Japan. This Executive Briefing on Trade explores the market and major sources of fries in Japan, examines the causes of this disruption of french fry availability, and comments on the importance of diversity of supply.

Background

Since mid-December 2021, the McDonald's chain in Japan has been intermittently rationing its sales of french fries. Patrons of the chain's roughly 3,000 fast-food outlets were allowed to buy only one small-sized order of fries between December 25 and December 30, 2021. This development resulted not from production or processing problems in the United States, where the company sources its frozen french fries, but rather from logistical issues. While this problem has also affected several other restaurant chains in Japan, it was not industry wide. Other competing chains in Japan have not experienced fry shortages because they source frozen fries from either the limited domestic production or European suppliers.

Rising Japanese french fry consumption relies on imports

Japanese domestic potato production, which has decreased by half over the last 30 years, is focused on fresh rather than processing potatoes. Only approximately 4 percent of the 2.2 million metric tons (mt) grown in Japan in 2020 were processed into fries. Consumption of potatoes in Japan is increasing, however, up by 11.5 percent between 2010 and 2019 to 16.5 kg per person, and this demand has shifted from fresh to processed as Japanese consumers eat out more and consume more processed foods.

To satisfy domestic demand for fries, Japan relies on imports of frozen, not fresh, potatoes.¹ Japan imported 352,000 mt of frozen potatoes in 2021, the majority of which were frozen french fries. These imports supplied around 90 percent of the country's demand for frozen french fries and accounted for about half of total potato imports. The United States is the primary supplier of frozen french fries to Japan, accounting for 70 percent of imports. Other suppliers include the EU with a 20 percent share of the market, and Canada with 8 percent. Starting in 2021, all three top suppliers of frozen french fries to Japan no longer pay the 8.5 percent NTR tariff because of trade deals, including the U.S.-Japan Trade Agreement.

Japan is the second most valuable market for the U.S. potato industry, which did not experience any major disruptions to crop production or processing in 2021. The U.S. produced 18.5 million mt of potatoes in 2021, down two percent from 2020. Over two-thirds of the U.S. potato crop is processed annually into various products, including frozen fries. Processing volumes in the United States increased by approximately six percent in 2021. U.S. exports of all potato products increased by 13 percent in 2021 over the prior year—half of these exports were frozen french fries.

Logistics issues lead to french fry shortage

Historic flooding in the area around Vancouver, Canada, in November 2021 caused problems for the area's railroads, roads, and port. By late September 2021, the Vancouver port was already pushing the limits of

¹ Japan imports a marginal volume of fresh potatoes annually, and the United States is the only foreign supplier with access to Japan's fresh potato market. The 54,000 mt of fresh potatoes that the U.S. exported to Japan in 2021 were processing potatoes, the majority of which were made into potato chips.

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its capacity. A surge of holiday goods had increased the volume of shipping containers processed at the port, and ocean carriers diverted some trade to Vancouver that would normally have gone through U.S. ports along the Pacific Coast (e.g., Seattle, Los Angeles), which were experiencing pandemic-related congestion issues. Then a “once in 500 years” flood in November washed out roads and created mudslides that damaged railroad lines. The city and the port of Vancouver were largely cut off from the rest of Canada. Although the area is recovering from the flood damage, the port’s capacity will be limited for some time.

McDonald’s Japan, which normally uses ships to transport frozen french fries from North America, reportedly resorted to using more expensive air freight, flying three 747s loaded with frozen fries in late December to ease the shortage. Unfortunately, these efforts were insufficient to alleviate the shortage for long, and McDonald’s reimposed its “small fries only” restriction for approximately one month, from January 9 to February 7, 2022. The company was forced to establish a new route for its potato imports, from ports on the East Coast of North America, allowing sales of medium- and large-sized fries to resume. However, around the time McDonald’s in Japan started resuming normal fry sales, McDonald’s in other markets in Asia, including Indonesia, Malaysia, and Taiwan, were impacted by these logistics issues.

This string of events impacting McDonald’s supplies of frozen fries reflects the challenges currently facing global supply chains. Pandemic-related bottlenecks, such as port congestion, have resulted in delays and imbalances that have contributed to product shortages and increased costs for goods across the global economy. Moreover, port operations are predicted to be further disrupted by climate change, whether through gradual environmental changes or more frequent extreme weather events such as the floods in Canada. Companies may need to have even greater diversity of supply going forward given different countries’ responses to COVID-19 surges and the anticipated impact of climate change on ports.

Sources: Austen and Isai, “[Vancouver Is Marooned by Flooding and Besieged Again by Climate Change](#),” November 21, 2021; Berger, “[A Growing Global Potato Shortage Is Affecting French Fries, from Japan to Kenya](#),” January 8, 2022; Goodman, “[A Normal Supply Chain? It’s Unlikely in 2022](#),” February 6, 2022; Gotinga, “[The Great McDonald’s French Fry Shortage is Spreading to More Countries](#),” February 3, 2022; IHS Markit, [Global Trade Atlas database](#), HS subheading 2004.10, accessed March 15, 2022; *The Japan Times*, “[McDonald’s Japan Again Slices Fries to Small Size Amid Shipping Woes](#),” January 7, 2022; *The Japan Times*, “[McDonald’s Japan to Put Large-Size Fries Back on Menu from Monday](#),” February 5, 2022; Japan Today, “[French Fry War Escalates with a 300% Larger Bucket Potato from Ministop Convenience Stores](#),” January 22, 2022; KPMG, “[Six Key Trends Impacting Global Supply Chains in 2022](#),” December 14, 2021; Kulisch, “[Why Is Air Cargo Suddenly Affordable Relative to Ocean Shipping?](#),” November 14, 2021; Nonomiya, “[McDonald’s Forced to Ration Customers’ Fries as Supply Shortage Hits Japan](#),” December 21, 2021; Putzger, “[Canada’s Supply Chain is at Risk’ Warning, as Congestion Hits Port of Vancouver](#),” October 25, 2021; USDA, ERS, [Vegetables and Pulses Outlook November 2021](#), VGS-367, November 19, 2021; USDA, FAS, [Japan Potato Annual](#), October 27, 2017; USDA, FAS, [Updates on Potato Production and Consumption in Japan](#), November 17, 2021; USDA, FAS, [US Fries to Feel the Heat of New Japan Trade Agreements](#), February 15, 2018; USDA NASS, [Potato Stocks Press Release](#), February 17, 2022; USDA, NASS, [QuickStats](#), Potato Production, accessed March 14, 2022; USITC [DataWeb](#)/Census, HS subheading 0701, accessed March 15, 2022; World Bank, “[Brief: Trade and Climate Change](#),” September 7, 2021; Zimmerman, “[Potatoes Airlifted to Japan to Ease French-Fries Shortage](#),” December 28, 2021.

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