

U.S. Infant Formula Shortage and Supply and Trade Dynamics

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This EBOT is the first in a series discussing U.S. and global infant formula production, trade, and regulation. Widespread infant formula shortages were reported throughout the United States following FDA-mandated and voluntary recalls and an FDA-mandated plant closure in February 2022. The plant closure and recalls exacerbated pre-existing COVID-19 supply chain issues and prompted consumers to stock up on formula, boosting demand as supplies dropped. The infant formula industry is vulnerable to supply disruptions, and infant formula is not heavily traded internationally, contributing to the inability of imports to fully offset the shortage. This EBOT provides background on the ongoing infant formula shortage, explains characteristics of the industry that make it susceptible to supply disruptions, and considers the role of trade in U.S. infant formula supplies.

Evolution of the U.S. infant formula shortage

Infant formula shortages spiked after the February 2022 closure of and related product recalls from Abbott Nutrition's Sturgis, MI plant, which accounts for 20 percent of U.S. infant formula production.¹ The recalls and plant closure were related to unsanitary conditions at the plant revealed by an FDA investigation in response to cases of illness or death from *Cronobacter* bacterial infections (see [CDC information](#)) in infants consuming infant formula.² Nationwide infant formula out-of-stock rates at retail stores reached 74 percent at the end of May 2022.³ By mid-August, the shortage had begun to ease slightly owing to the reopening of the plant, industry and government efforts to increase availability, and a lessening of consumer stockpiling behavior.⁴ Abbott's Sturgis plant resumed production in early June 2022 but closed again due to flooding, recommencing production of some products again on July 1, 2022. In the meantime, U.S. formula manufacturers increased production at other plants, and the Administration authorized the Defense Production Act for infant formula production. The USDA increased flexibility for infant formula purchases through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) allowing benefits to be used for formula from not only the manufacturer with the supplying contract ([background on WIC](#)), and Abbott provided rebates for no-cost formula from Abbott or another brand to WIC beneficiaries in states where Abbott holds the WIC formula supplier contract.⁵ After the FDA facilitated the approval of new import sources meeting U.S. safety requirements, industry increased imports, the Administration coordinated fly-ins of formula, and Congress passed legislation temporarily exempting infant formula and infant formula base powder from import duties.⁶ Retail out-of-stock rates eased to 61 percent in August, but reduced supplies are expected for the foreseeable future.⁷

U.S. infant formula supply and demand characteristics contribute to shortage vulnerability

Production shocks are especially impactful to U.S. infant formula supplies because of the characteristics of the industry and demand. The U.S. infant formula market is highly concentrated, with the top 4 suppliers accounting for around 87 percent of sales.⁸ There are high barriers to entry, with stringent production, safety, inspection, and labeling requirements, critical to ensure the health and safety of a

¹ Lee, "[Second Time's a Charm?](#)" July 9, 2022; Berfield and Edney, "[How Deadly Bacteria Spread](#)," August 25, 2022.

² FDA, [FDA Evaluation of Infant Formula Response](#), September 2022, 4.

³ Datasembly, "[Datasembly Releases Latest](#)," May 10, 2022; McCullough, "[Is the Baby Formula Shortage Abating?](#)" August 21, 2022; and Paris, "[One in Five US States is 90% Out of Baby Formula](#)," June 2, 2022.

⁴ Han, "[Baby-Formula Shortage is Finally Easing](#)," August 22, 2022.

⁵ Abbott, "[Abbott Enters](#)," May 16, 2022; White House, "[President Biden Announces](#)," May 22, 2022.

⁶ [Pub. L. No: 117-160](#), 136 Stat. 1345 (2022); [Pub. L. No: 117-192](#); 136 Stat. 2209 (2022).

⁷ Lee, "[Second Time's a Charm?](#)" July 9, 2022 and Han, "[Baby-Formula Shortage is Finally Easing](#)," August 22, 2022.

⁸ Curran, [Infant Formula Manufacturing](#), August 2020.

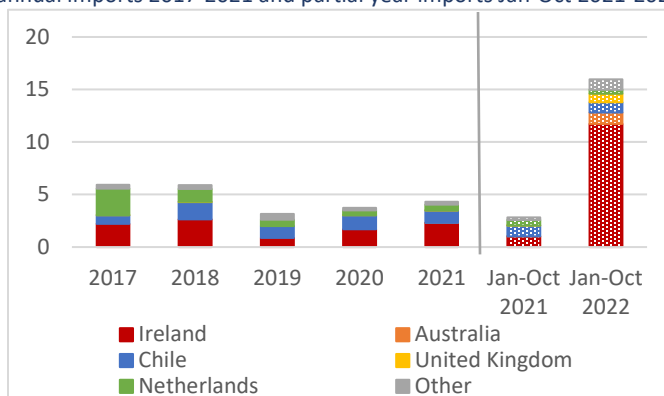
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vulnerable population: infants. There is also flat demand and little excess production capacity. Further, approximately 98 percent of infant formula consumed in the United States is produced domestically⁹ and infant formula is generally not widely traded globally, limiting the extent to which imports can offset domestic production shortfalls. These factors make increasing domestic production or switching on a supply stream of imported product difficult to do. On the demand side, infant formula has very few substitutes. Infant preferences plus WIC supplier contracts typically make it difficult to even switch between brands, resulting in highly inelastic demand. As such, the infant formula market is very sensitive to recalls and supply disruptions can quickly lead to shortages.

U.S. and global infant formula trade¹⁰

Although infant formula imports are helpful for easing U.S. supply shortages, they are unable to completely offset large supply shocks like the recent recalls and the plant closure. Global infant formula trade is centered around China, where there is strong demand and willingness to pay for imported product. Infant formula is typically produced under contract and there is somewhat limited excess capacity. Differences in country-specific infant formula food safety regulations, specifications, and certification requirements also make it difficult for U.S. firms to rapidly increase imports or for foreign firms to divert supplies to the United States.

Figure 1 U.S. infant formula imports by source, 1,000 metric tons, annual imports 2017-2021 and partial year imports Jan-Oct 2021-2022



Source: DataWeb, HTS

1901.10.05/11/16/21/26/29/31/33/36/41/44/49, accessed 12/19/22

Note: Imports may include other products suitable for infants.

The United States is a net infant formula exporter, with average annual 2017–21 export volumes around 7 times higher than imports. Canada, which is heavily reliant on the United States for supplies of infant formula and does not export infant formula,¹¹ accounted for nearly 70 percent of U.S. exports on average during 2017–21. During January - October 2022, U.S. exports, which are produced under contract, were up 5 percent. During the same period, U.S. imports, which typically account for only 2 percent of U.S. consumption, were 465 percent higher compared to the same period in 2021, primarily from Ireland (red) (figure 1), and reflect industry and government efforts to increase imports.

Global infant and child formula exports were 1.0 million mt valued at \$9.6 billion in 2021 (excluding intra-EU trade). China is by far the world's largest export destination, accounting for 27 percent by volume in 2021 and followed by the UK with 5 percent. Leading global exporters were the Netherlands, France, New Zealand, and Ireland (44 percent of global exports). Although not a direct comparison since global trade data include non-infant formula products, global exports were nearly five times larger than the U.S. infant formula demand, estimated at around \$2 billion in 2020.¹²

⁹ Curran, [Infant Formula Manufacturing](#), August 2020.

¹⁰ U.S. import data may also include products suitable for infants other than formula (e.g., infant cereal mixes); U.S. export data and global trade data include products suitable for children and for infants other than formula (e.g., toddler powder milk beverages). Infant formula mixes under HS 1901.90 and non-dairy infant formula under 2106.90 are excluded. U.S. trade data source: USITC, DataWeb, HTS

1901.10.05/11/16/21/26/29/31/33/36/41/44/49, Schedule B 1901.10, accessed December 19, 2022. Global trade data source: S&P Global, GTA database, HS 6-digit 1901.10, accessed September 1, 2022.

¹¹ Global Affairs Canada, ["Dairy Export Thresholds,"](#) 2019/20–2022/23, accessed September 1, 2022.

¹² Curran, [Infant Formula Manufacturing](#), August 2020.

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