EconoFact Chats: The Economics of Infant Formula Shortages

Kadee Russ, University of California, Davis

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Michael Klein:

I'm Michael Klein, Executive Editor of EconoFact, a non-partisan, web-based publication of The Fletcher School at Tufts University. At EconoFact, we bring key facts and incisive analysis to the national debate on economic and social policies, publishing work from leading economists across the country. You can learn more about us and see our work at www.econofact.org

Michael Klein:

The pandemic has seen the rise of supply chain problems and shortages in a wide range of goods; computer chips, which have affected among other products, new cars. Lumber, which stalled residential construction, and even the hot sauce, Sriracha, which adversely impacted the consumption of pho, and phad thai. But perhaps no shortage has caught the public's attention, as much as the shortage of infant formula. This shortage began when the producers of infant formula faced supply chain disruptions. The problem was exacerbated when Abbott Labs, one of the three major American formula producers, shut down production in its Michigan plant in February 2022, because of possible bacterial contamination.

Michael Klein:

There are a range of economic topics linked to the infant formula shortage, including the role of regulation, market concentration, the power of lobbying, the role of advertising, and the impact of trade restrictions. To discuss the economics of this issue, I'm very pleased to be speaking today with Professor Katheryn Russ, of the University of California, Davis. Kadee has published scholarly research on the market for infant formula, and has offered public comments to the Federal Trade Commission on the infant formula crisis. Kadee, welcome back to Econofact Chats.

Katheryn Russ:

Thank you, Michael. I'm glad to be here.

Michael Klein:

Kadee, you recently posted a blog with the very striking title, 'The Breast is the World's Shortest Supply Chain.' So let's start off by discussing the role of infant formula, especially as a substitute for breastfeeding. First, what proportion of infants were fed formula, rather than breast milk, or in addition to breast milk when the shortage hit?

Katheryn Russ:

I would estimate that about two thirds of infants, 0 to 12 months of age, were consuming commercial milk formulas as a breast milk substitute when that shortage hit. That's based on the fraction of infants, exclusively breastfed up to three months and up to six months, and then the fraction receiving any breast milk by one year of age.

Michael Klein:

What do health experts say about breastfeeding, as opposed to giving babies formula?

Katheryn Russ:

Well, the American Academy of Pediatrics recommends that infants are exclusively breastfed for the first six months of life, and then continue to receive breast milk for at least one year as parents introduce complimentary foods. The World Health Organization recommends breastfeeding for up to two years of age or older. So while commercial milk formulas manufactured for infants are nutritionally complete, studies show a range of benefits from breastfeeding to protect both infant and maternal health, where it's possible.

Michael Klein:

What are those benefits, Kadee?

Katheryn Russ:

Well, the U.S. Center for Disease Control and Prevention, the CDC says that infants who are breastfed have reduced risk of asthma, ear infections, bronchial, infections, obesity, type 1 diabetes, sudden infant death syndrome, diarrhea and vomiting. And breastfeeding also helps prevent a really awful gut infection called, necrotizing enterocolitis or NEC. And that's a big deal, because NEC is the number one killer of preterm infants and preemies make up about 10% of all births.

Michael Klein:

Are there perceived benefits for parents as well?

Katheryn Russ:

Yeah. The CDC reports that in nursing parents, breastfeeding can help lower the risk of high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer. So from a public health perspective, breastfeeding is a tool to help fight non-communicable diseases, not just in infants, but also in parents who breastfeed.

Michael Klein:

Kadee, as I mentioned in the introduction, the market for infant formula raises a number of important economic issues. First, let's consider the demand for this product. What has been the role of industry in the use of infant formula by mothers?

Katheryn Russ:

That's a big question. The role of industry in influencing infant feeding stretches back at least a century. Some of the leading brands you see today had emerged by the 1920s. Aggressive marketing really became the norm. Manufacturers know that if a family's given a brand of breast milk substitute in the hospital, they almost always stick with that brand. So, they used to send sales reps dressed like nurses to visit new parents in maternity wards and promote their formula.

Michael Klein:

They had the sales rep dressed like nurses?

Katheryn Russ:

Yes, that's what we see reported. And that's a really big deal, because early use of formula can prevent parents giving birth from being able to establish their milk supply, so it has serious consequences. Things got so bad that in 1981, the World Health Organization adopted a set of guidelines called, the International Code of Marketing Breastmilk Substitutes

Michael Klein:

Given that code, does these kinds of things still happen?

Katheryn Russ:

Unfortunately, there is still a host of aggressive marketing that still happens. So many countries started adopting the provisions of this code into domestic regulation to prevent inappropriate marketing tactics, but violations of the code proliferate. And in some countries, like the U.S., few, if any provisions of the code were ever even adopted. Packaging follow-up milk, and toddler formulas in the same way as formula for younger infants is one example of marketing strategies that can confuse parents, and help companies circumvent restrictions, even where they do exist.

Michael Klein:

So you're giving us the history of this, Kadee. In particular, what's been going on during the pandemic?

Katheryn Russ:

Well, UNICEF and the World Health Organization recently released a report showing aggressive marketing tactics now proliferating in the form of digital marketing. We see misinformation spread through influencers, and occasionally through company communications, especially during the pandemic. Messages might scare people into thinking that regular breastfeeding is somehow unsafe or less safe than bottle feeding with formula, when actually breast milk transmits antibodies from parents to baby that can help protect against COVID-19.

Michael Klein:

Now, there's an important role for infant formula as well, for example, mothers who cannot breastfeed, or situations where it's very difficult to take the time. So it's not all black and white, but you're saying that there are issues with infant formula, as opposed to breast milk?

Katheryn Russ:

Oh, thank you for emphasizing that, Michael, absolutely. I mean, there is a significant portion of parents who are not able to breastfeed after giving birth, or who just may not want to. And there are a host of really legitimate reasons, like really good reasons why people may choose not to breastfeed. So, no one should be shamed or pressured into breastfeeding, I'm just discussing the benefits.

Michael Klein:

So we're not stigmatizing mothers who don't breastfeed, it's just that there was an industry push towards the use of infant formula?

Katheryn Russ:

Absolutely not. Yeah, the point here is just to emphasize the role of marketing. So if you read the UNICEF, WHO report, they're talking about the role that marketing often plays in people's decision making, as opposed to just sitting down and exchanging information with one's healthcare providers.

Michael Klein:

So Kadee, that's the demand side, and economists like demand and supply. Let's talk about supply now, first of all, why should the shutdown of one plant in Michigan cause such a shortage? How many companies in the United States do produce infant formula?

Katheryn Russ:

Well, just three companies supply 90% of the U.S. market for infant formula. One of them, Abbott Laboratories, accounts for 40% of sales in the U.S. and its largest domestic plant in Sturgis, Michigan was shut down, due to concerns over sanitation.

Michael Klein:

So even though there are not a lot of American producers, why couldn't parents have just purchased imported infant formula from a company outside the United States?

Katheryn Russ:

That's another big question. So people have pointed to restrictive provisions that we built into the U.S., Mexico, Canada Free Trade Agreement, the revised NAFTA agreement, to limit exports of formula from Canada, and also some arcane labeling and other requirements from the Food and Drug Administration that limit imports of formula from Europe. We also have a high tariff on imported formula and a cap on total imports. Ed Gresser at the Progressive Policy Institute points out that while we, in the U.S., are experiencing an acute shortage of formula, our trading partners are not. And, that type of segmentation suggests that trade barriers are likely protecting U.S. producers and that those are at play in preventing us from responding to the shortage.

Michael Klein:

So, you're talking about a lack of imports, and policies that are preventing imports. My colleague, Joel Trachtman, at The Fletcher School, who is a leading international trade law scholar talks about trade restrictions as either prudential or protectionist. But it's often difficult to distinguish whether restricting imports is for legitimate health and safety reasons, or if they're just to protect domestic industry. Kadee, what's your sense of the reasons behind trade restrictions on U.S. imports of infant formula?

Katheryn Russ:

Well, we see industry associations funding research to shape science, and extensive lobbying of U.S. government officials to influence domestic and international safety and marketing regulations. Some of it fueled conflict between the U.S. and the World Health Organization for several years, leading up to the pandemic, as the U.S. wrestled to close off space for public health measures to protect breastfeeding abroad. And, we did that using these really opaque processes under international trade law, in direct opposition to World Health Organization recommendations.

Katheryn Russ:

At the World Trade Organization, the U.S. has often argued against a wide range of national health regulations that were proposed, or adopted by our trading partners to ensure infant safety and nutrition. And yet, we find out in a time of truly dire shortage at home, and at home and almost nowhere else, that our own formula market might be one of the most protectionist, just hemmed in securely by trade barriers.

Michael Klein:

Kadee, are you suggesting that this is an indication of conflicts of interest driving U.S. policy, instead of disinterested science?

Katheryn Russ:

Yes. It's not that lobbying is bad, lobbying can be a really healthy part of the democratic process, but in this case, the industry influence is so extensive, so heavily coordinated and fueled by such an enormous

concentration of profits, that it's hard to ensure public health voices are a dominant or even an equal force in U.S. policy on infant formula. I think that's a flaw in our system, not just for policies affecting infant formula and breastfeeding, but for an array of health and environmental issues.

Michael Klein:

Kadee, the pandemic has caused people to rethink the role of government in ensuring the provision of certain vital goods. And I guess, a strong case could be made that infant formula deserves consideration along these lines. What do you see as good government policy for ensuring the supply of infant formula?

Katheryn Russ:

You're absolutely right, Michael. The situation we see with infant formula is not unlike that affecting the supply of some pharmaceutical goods. Supply chains are vulnerable, some risk can't be avoided, but when companies are aware that few alternatives exist to their product, either due to customer's brand loyalty, or structural or protectionist measures that limit the physical availability of rival varieties, some question arises as to whether there's adequate incentive to invest in the resilience of their supply chains.

Michael Klein:

And having only three producers in the United States, I guess, is kind of prima facie evidence, that there is deep concentration in this field.

Katheryn Russ:

There's definitely deep concentration, so this looks very much like an oligopoly.

Michael Klein:

So what's the answer, Kadee? What should be done, what could be done?

Katheryn Russ:

Well, there are no easy answers, but in this case, making the market less fragile by encouraging competition and preventing regulatory capture could probably help. Fewer import barriers, in this case. Could have helped less slack in the FDA's inspection system, could have helped the issues that the plant in question were visible years ago. And I think a dispassionate evaluation of FDA processes and who influences them could help much more broadly, even than for infant formula. Other policies, like expanding the range of brands of formula that families using WIC benefits can purchase also could help people out right now. In California, the state where I live, the state's doing this.

Michael Klein:

So going back to what we were discussing at the outset of this conversation, for women who are able to breastfeed, do you see a role for governments or companies to make breastfeeding a more widespread practice, given the health and economic considerations?

Katheryn Russ:

Absolutely. The U.S. has one of the lowest...so, it's in the lowest quintile of breastfeeding rates in the world. There's an enormous community of lactation consultants, and public health nutrition researchers and advocates with evidence-based recommendations that the U.S. could adopt, to better support parents who are able and wish to provide breast milk to their infants. Again, no one should ever be shamed or pressured into doing so, but for people who want to, we could start there and help. The real question is why we lag so far in adopting these measures.

Michael Klein:

Kadee, you began that blog post that I mentioned earlier by saying that if you want to scare a seminar room full of male economists, talk about the economics of breast milk. Well, I hope our conversation today will make those economists and everybody else somewhat more comfortable with this topic and with what you've explained, we're all better informed for discussion of the issue. So Kadee, thank you very much for joining me today, it's always a pleasure to talk with you.

Katheryn Russ:

Oh, thanks to you, Michael. I really enjoyed chatting with you.

Michael Klein:

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