FEDERAL RESERVE SYSTEM

HIGH SCHOOL FED CHALLENGE

HSFC

Journal of Future Economists

Economics of Food


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High School Fed Challenge Reaches a National Audience

The Federal Reserve System is pleased to present the 2025 Journal of Future Economists. This year marks an exciting milestone for High School Fed Challenge as we have, for the first time, opened the competition to every high school in the United States and territories. We received 195 submissions on this year's theme, "Economics of Food." Student teams tackled topics including production and distribution, consumption and sustainability, industries and prices. The expansion of High School Fed Challenge made the selection of 12 podcast scripts for publication especially invigorating.

The selected scripts highlight a range of perspectives, touching on issues such as food deserts, egg prices, Michelin-starred restaurants, globalization's impact on agriculture, the influence of social media on dietary trends, and the economics of the fast-food industry. Student teams engaged in rigorous research and analysis, demonstrating

their ability to interpret data and construct thoughtful narratives. Their work reflects the dedication, curiosity, and creativity that make economics a dynamic and essential field of study.

We are deeply grateful to the educators who served as faculty advisors to participating student teams. Their commitment and dedication to economic education, as well as the students' interest and passion for economics, are evident in the work we reviewed. We wish to extend a warm welcome to those who participated in High School Fed Challenge for the first time, recognize educators who have demonstrated an ongoing interest in the program, and thank all of the faculty advisors for the time and support they give to their students.

Thank you for taking the time to explore this year's Journal, the fifth in the series and the first reflecting national reach. We hope participating in High School Fed Challenge sparks a lasting interest in economics, and that these podcast scripts will inspire readers to engage with economic issues in tangible ways. We encourage you to appreciate the depth of thought and effort that these students have invested, and we look forward to seeing how their insights will shape our collective economic future.

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Lafayette, CA, Twelfth District

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Alameda, CA, Twelfth District

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Allentown, NJ, Second District

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White Plains, NY, Second District

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West Chester, PA, Third District

BASIS Ahwatukee
Phoenix, AZ, Twelfth District

Bellarmine College Preparatory
San Jose, CA, Twelfth District

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Belmont, MA, First District

Bergen Arts and Science Charter High School
Hackensack, NJ, Second District

Bergen County Academies
Hackensack, NJ, Second District

Bergenfield High School
Bergenfield, NJ, Second District

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Bethesda, MD, Fifth District

Bethlehem Central High School
Delmar, NY, Second District

Biotechnology High School
Freehold, NJ, Second District

Blue Valley Northwest High School
Overland Park, KS, Tenth District

Bridgewater Raritan High School
Bridgewater, NJ, Second District

Bronxville High School
Bronxville, NY, Second District

Brooklyn Technical High School
Brooklyn, NY, Second District

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San Diego, CA, Twelfth District

Canyon High School

Anaheim, CA, Twelfth District

Centennial High School

Frisco, TX, Eleventh District

Chadwick School

Palos Verdes Peninsula, CA, Twelfth District

Chamblee High School

Chamblee, GA, Sixth District

Chaminade High School

Mineola, NY, Second District

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Charlotte, NC, Fifth District

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Greenwood Village, CO, Tenth District

Clear Lake High School

Houston, TX, Eleventh District

Cold Spring Harbor Jr./Sr. High School

Cold Spring Harbor, NY, Second District

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Wall Township, NJ, Second District

Conestoga High School

Berwyn, PA, Third District

Crimson Global Academy

Orlando, FL, Sixth District

Crystal Springs Uplands School

Hillsborough, CA, Twelfth District

Cupertino High School

Cupertino, CA, Twelfth District

Cypress Bay High School

Weston, FL, Sixth District

Davidson Academy

Reno, NV, Twelfth District

Deerfield High School

Deerfield, IL, Seventh District

Delbarton School

Morristown, NJ, Second District

Diamond Bar High School

Diamond Bar, CA, Twelfth District

Downingtown STEM Academy

Downingtown, PA, Third District

Downtown Doral Charter Upper School

Doral, FL, Sixth District

Dwight-Englewood School

Englewood, NJ, Second District

East Brunswick High School

East Brunswick, NJ, Second District

Edgemont Jr./Sr. High School

Scarsdale, NY, Second District

Edison Academy Magnet School

Edison, NJ, Second District

Edison High School

Edison, NJ, Second District

Eleanor Roosevelt High School

New York, NY, Second District

Emma Willard School

Troy, NY, Second District

Fair Lawn High School

Fair Lawn, NJ, Second District

Farmington High School

Farmington, CT, First District

Forest Hills High School

Forest Hills, NY, Second District

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Bedford, NY, Second District

Franklin Road Academy

Nashville, TN, Sixth District

Franklin School

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Friends Academy

Locust Valley, NY, Second District

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Garden City, NY, Second District

Gene L. Klida Utica Academy for International Studies

Sterling Heights, MI, Seventh District

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Hewlett, NY, Second District

Germantown Academy

Fort Washington, PA, Third District

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Glen Rock, NJ, Second District

Great Neck South High School

Great Neck, NY, Second District

Greenwich High School

Greenwich, CT, Second District

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Guilford, CT, First District

Hackensack High School

Hackensack, NJ, Second District

Hackley School

Tarrytown, NY, Second District

Half Hollow Hills High School West

Dix Hills, NY, Second District

Heritage High School

Frisco, TX, Eleventh District

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New York, NY, Second District

High Technology High School

Lincroft, NJ, Second District

Hillsborough High School

Hillsborough Township, NJ, Second District

Holmdel High School

Holmdel, NJ, Second District

Holy Cross High School

Flushing, NY, Second District

Homeschool

Sioux Falls, SD, Ninth District

Homestead High School

Mequon, WI, Seventh District

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Chappaqua, NY, Second District

Horace Mann School

Bronx, NY, Second District

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New York, NY, Second District

Interlake High School

Bellevue, WA, Twelfth District

Irvine High School

Irvine, CA, Twelfth District

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Issaquah, WA, Twelfth District

Ithaca High School

Ithaca, NY, Second District

Jacqueline Kennedy Onassis High School

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Jericho Senior High School

Jericho, NY, Second District

John F. Kennedy Memorial High School

Iselin, NJ, Second District

John P. Stevens High School

Edison, NJ, Second District

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Henrico, VA, Fifth District

Jonathan Dayton High School

Springfield, NJ, Second District

Kent Place School

Summit, NJ, Second District

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Laguna Beach, CA, Twelfth District

Lake Nona High School

Orlando, FL, Sixth District

Leander High School

Leander, TX, Eleventh District

Leonia High School

Leonia, NJ, Second District

Lexington High School

Lexington, MA, First District

Livingston High School

Livingston, NJ, Second District

Long Island Lutheran Middle and High School

Brookville, NY, Second District

Longwood High School

Middle Island, NY, Second District

Los Osos High School

Rancho Cucamonga, CA, Twelfth District

Mamaroneck High School

Mamaroneck, NY, Second District

Manhasset High School

Manhasset, NY, Second District

Marcus High School

Flower Mound, TX, Eleventh District

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Marlboro, NJ, Second District

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Waxhaw, NC, Fifth District

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St. Louis, MO, Eighth District

Marymount High School

Los Angeles, CA, Twelfth District

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Metea Valley High School

Aurora, IL, Seventh District

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Sacramento, CA, Twelfth District

Miramonte High School

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Monroe Township High School

Monroe Township, NJ, Second District

Montclair High School

Montclair, NJ, Second District

Montclair Kimberley Academy

Montclair, NJ, Second District

Montgomery High School

Skillman, NJ, Second District

Montville Township High School

Montville Township, NJ, Second District

Morris County School of Technology

Denville, NJ, Second District

Mounds View High School

Arden Hills, MN, Ninth District

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Nashua, NH, First District

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Nazareth, PA, Third District

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New Canaan, CT, Second District

New Explorations into Science, Technology, and Math (NEST+M) High School

New York, NY, Second District

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Brooklyn, NY, Second District

Newark Academy

Livingston, NJ, Second District

Niskayuna High School

Niskayuna, NY, Second District

North Carolina School of Science and Mathematics

Durham, NC, Fifth District

North Rockland High School

Thiells, NY, Second District

Northern Highlands Regional High School

Allendale, NJ, Second District

Notre Dame School of Manhattan

New York, NY, Second District

Novi High School

Novi, MI, Seventh District

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Davie, FL, Sixth District

Old Bridge High School

Matawan, NJ, Second District

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Summit, NJ, Second District

Paramus High School

Paramus, NJ, Second District

Park Tudor School

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Pascack Valley High School

Hillsdale, NJ, Second District

Passaic County Technical Institute

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Peak To Peak Charter School

Lafayette, CO, Tenth District

Pennbrook Middle School (7-9 Building)

North Wales, PA, Third District

Pittsford Sutherland High School

Pittsford, NY, Second District

Plainfield High School

Plainfield, NJ, Second District

Princeton Day School

Princeton, NJ, Third District

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Prosper, TX, Eleventh District

Richard Montgomery High School

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Ridge High School

Basking Ridge, NJ, Second District

Ridgewood High School

Ridgewood, NJ, Second District

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Rutgers Preparatory School

Somerset, NJ, Second District

Rye Country Day School

Rye, NY, Second District

Saddle River Day School

Saddle River, NJ, Second District

Saint Francis High School

Mountain View, CA, Twelfth District

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Stuyvesant High School

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Summit High School

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Weston High School

Weston, CT, Second District

Whitney High School

Cerritos, CA, Twelfth District

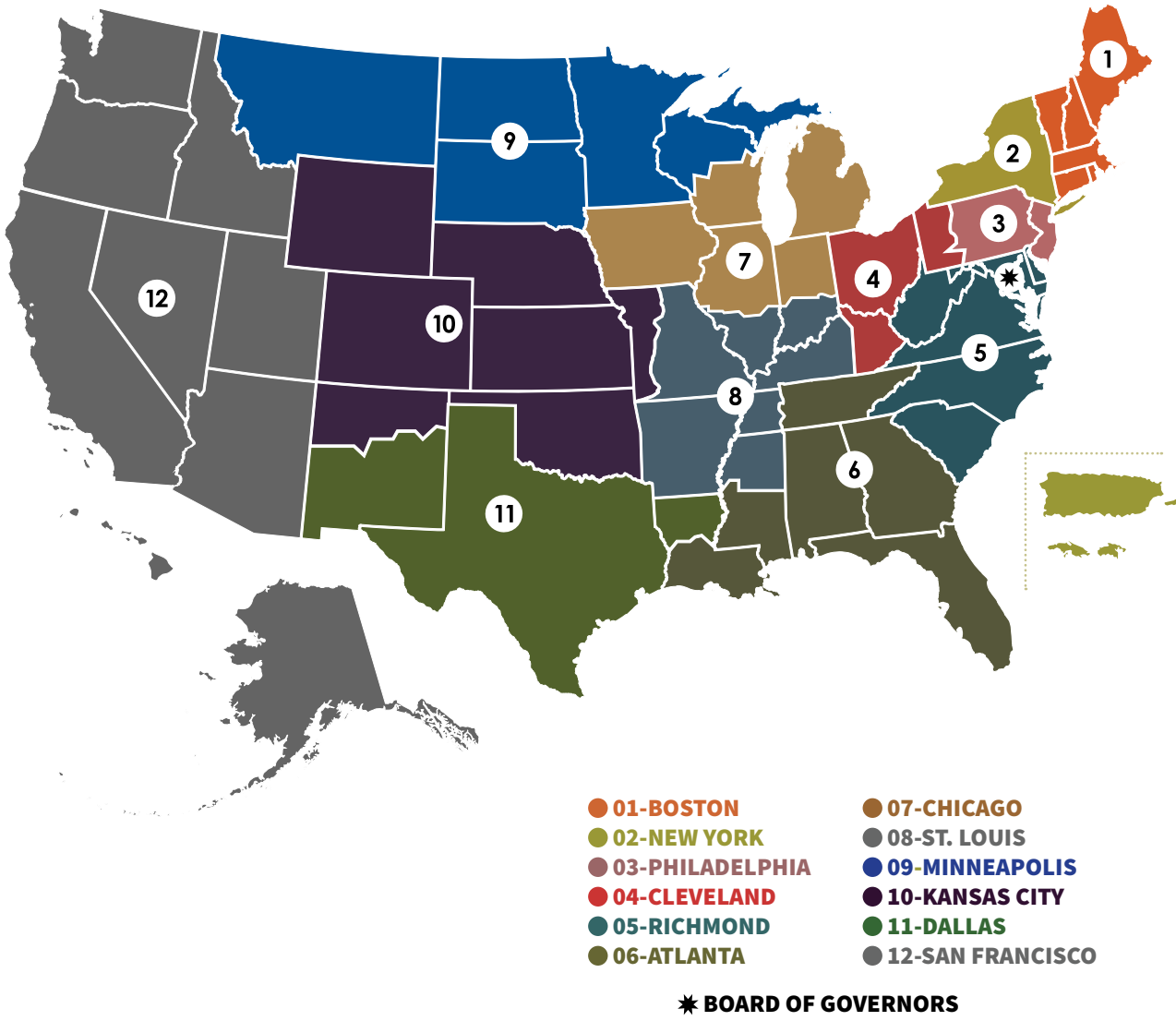
Wilton High School

Wilton, CT, Second District

Winston Churchill High School

Potomac, MD, Fifth District

The Federal Reserve System



We had

195

Entries in Total!

THANK YOU TO ALL PARTICIPANTS!

Left to right: Shriya Ganesh, Rishan Mahtaney, Anya Gupta, Ishan Khosla, Anika Mukherjee

Cupertino High School

Cupertino, CA

The Economics of Expiration Dates: Are You Throwing Away Good Food?

MAYA: Hey, listeners, welcome to our latest episode of *Food for Thought*—the podcast that uncovers the hidden stories behind what we eat, what we waste, and why it all matters. I'm Maya, and today we're starting things a little differently—out here in the city!

We're talking about a topic that affects every single person with a fridge or pantry: expiration dates. Those tiny numbers printed on your food—are they really keeping you safe, or just tricking you into wasting money and tossing perfectly good food?

What better way to find out than by seeing what people do when faced with a daunting, expired label?

MAYA: Excuse me, quick question for you! When you see a food item in your fridge that's past its expiration date, what do you do?

STREET VOICE 1: I usually just throw it out, to be honest. I'd rather not take the risk of getting sick.

MAYA: Do you ever check it first? Smell it, look at it?

STREET VOICE 1: Nope. I trust the label.

MAYA: Interesting. What about you?

STREET VOICE 2: Depends on what it is. If it looks fine, I'll probably still eat it. After all, the date doesn't always mean it's gone bad.

MAYA: So you trust your judgment more than the printed date?

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CITATION STYLE
MLA 8th Edition

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

STREET VOICE 2: Yeah. I think most people overreact to expiration dates.

STREET VOICE 3: I agree, we didn't grow up with these kinds of labels being so strict, after all. We mainly used our senses. If something smelled bad or looked "off," we didn't eat it. Otherwise, it was fine.

MAYA: Did you know that food expiration-date labels are not standardized and have almost nothing to do with food safety (Vox)? In other words, they're not the end-all, and we actually waste tons of good food for no reason!

STREET VOICE 3: I knew it! Always trust your gut.

STREET VOICE 1: No way, that's crazy. What are they even for, then? Why do we have them? That's so misleading.

MAYA: I know, right?! Anyway, thanks for participating. Now, let's take this conversation back to the studio and delve deeper into this puzzling topic.

JORDAN: That was Maya, reporting from the streets. Just from those few interactions, it's clear there's a lot of confusion around expiration dates.

SAM: And that confusion leads to something much bigger: billions of dollars in wasted food. So, today we're asking, what is the economic impact of the endless food waste that stems from following expiration dates?

JORDAN: First off, let's clarify a few key terms which are essential to this topic. Most expiration dates are not about safety. They're about quality.

SAM: Exactly. When you see "Sell by," that date is meant for stores. It tells them how long to keep items on shelves. The "Best by" date tells us when the product will taste its best, not when it's unsafe. Similarly, the "Use by" date is also just a suggestion to use the product before quality declines; it's not a health warning.

JORDAN: And here's the surprising part. The U.S. only legally

requires expiration dates on baby formula. That's it! Everything else, from dairy to meat and poultry, and even eggs and packaged goods, is up to the manufacturer (U.S. Department of Agriculture).

SAM: So when you toss out yogurt a day after its "Best by" date, you're not avoiding danger—you're unknowingly contributing to a massive economic problem in the United States. A lot of people don't realize those dates are more about quality than safety, leading to tons of perfectly good food going to waste.

JORDAN: That's crazy. No wonder food waste is such a huge issue! But beyond just throwing out food at home, what's the wider impact? How does this problem extend further, beyond our kitchens?

SAM: Great question. That's where this really ties into our economy. In fact, about 30–40% of the food supply in the U.S. is wasted every year, amounting to over 161 billion dollars in lost economic value annually (USDA)! But this waste doesn't just affect consumers. It puts pressure on businesses, contributes to inflation, and can even affect Federal Reserve policy.

JORDAN: Wow, I never realized how impactful food waste really is! I heard you mention inflation, though. How does food waste affect inflation?

SAM: Great question. Food prices are a key component of the Consumer Price Index, or CPI. The Federal Reserve closely monitors the nation's inflation and sets interest rates accordingly. In fact, overall food prices including groceries and restaurant meals account for over 13% of the CPI (U.S. Bureau of Labor Statistics). When food is wasted due to confusion around expiration dates, businesses and consumers end up spending more on food to replace what they throw out. Grocery stores, for example, factor in losses from wasted and unsold inventory when setting prices, leading to higher prices for consumers. Restaurants and food service providers do the same, driving up the cost of dining out.

JORDAN: That makes sense. So, when food waste increases, it indirectly pushes prices up, contributing to inflation. And since the Federal Reserve's job is to maintain stable prices, this means they have to respond.

In fact, about 30–40% of the food supply in the U.S. is wasted every year, amounting to over 161 billion dollars in lost economic value annually!

SAM: Exactly. The Federal Reserve aims to control inflation by adjusting interest rates, which impacts borrowing costs for businesses and consumers alike. While it's only one part of our overall economy, food prices rising due to waste-driven inefficiencies can still put pressure on the Fed to take action. Remember, food prices have a disproportionate impact on lower-income households because they spend a higher percentage of their income on meals. So, reducing waste isn't just about sustainability—it's an economic priority.

JORDAN: Got it. So, food waste isn't just an environmental issue—it's actually contributing to issues with the broader economy by driving up costs and maybe even influencing monetary policy. Beyond just rising prices, though, how does food waste impact businesses directly?

SAM: Businesses take a huge hit, just as consumers do. As we discussed earlier, grocery stores are forced to toss food that's past the "Sell by" date, even if it's perfectly safe to eat, resulting in billions in waste. Restaurants do the same to avoid liability. Overall, the food industry loses about 218 billion dollars annually due to food waste—money that could have been reinvested in wages, infrastructure, or lower prices for consumers (U.S. Environmental Protection Agency).

JORDAN: So, let me get this straight. The confusion over expiration dates is hurting consumers and businesses, and maybe even worsening inflation—meaning the Federal Reserve has to step in?

SAM: Exactly, but it doesn't just stop there. Food waste also means wasted resources. Growing crops requires land, labor, and capital: three key economic factors of production. When food is wasted, all those resources are wasted too, increasing supply chain costs while decreasing productivity and economic efficiency. The transportation industry, which plays a huge role in getting groceries from farm to table, also feels the impact. Higher costs for fuel, labor shortages, and supply chain inefficiencies all contribute to price fluctuations. These are all factors that the Federal Reserve considers when analyzing economic conditions.

JORDAN: Wow, this is a lot deeper than I thought. So, what are people doing to fix it?

SAM: Luckily, there have been some efforts. A few states have introduced laws encouraging food donations by limiting liability for businesses that donate expired food. The USDA and FDA have been working on a standardized labeling system to make expiration dates more explicit. For example, Governor Gavin Newsom signed a bill to standardize food date labels and ban the use of "Sell by" dates, making California the first state to require clear standards to help cut food waste (Center for Health, Law, and Policy Innovation). There's also been a push to integrate food-spoilage technology using devices such as smart sensors that can measure food freshness instead of having to rely on somewhat arbitrary dates.

JORDAN: And if expiration dates were clearer, how would that make things change?

SAM: If the amount of food waste could be cut in half, we could feed every hungry person in the United States three meals a day, every single day, while improving overall economic efficiency (Move For Hunger). Not only that, but cutting food waste would also help alleviate the strain on landfills and help reduce greenhouse gas emissions, which have their own economic costs due to climate-related damage (USDA). Furthermore, laws on expiration dates help consumers better understand the shelf-life of their groceries, leading to less food waste, as 84% of consumers throw out food even if it's only near its labeled date (Neff et al.).

JORDAN: Wow, this discussion was truly eye-opening. I think it's a great time to put all of our newfound knowledge to the test. Time for my favorite game: Truth or Trash!

SAM: Listeners, here's how it works. I name a food item, and you tell me whether it's still safe to eat, or whether it belongs in the trash. Ready?

JORDAN: Let's do it.

SAM: First up: milk—one day past the "Sell by" date.

JORDAN: Truth. Still good.

If the amount of food waste could be cut in half, we could feed every hungry person in the United States three meals a day, every single day, while improving overall economic efficiency.

SAM: Correct! Milk can be safe to drink up to a week past the date. Always give it a sniff test. Next—eggs, two weeks after "Sell by."

JORDAN: Still good. Definitely Truth.

SAM: Yup! Eggs can last three to five weeks past their date. Try the float test: if it sinks, it's fresh. What about canned corn from 2022?

JORDAN: That's still fine. Truth.

SAM: Spot on. Canned foods can last for years, as long as the can is still intact. Okay, last one. Bagged salad that looks wilted but it's still before the "Best by" date.

JORDAN: Trash. If it looks bad, it's bad.

SAM: Exactly. The date doesn't override your senses.

JORDAN: Alright, let's wrap this episode up with a few key takeaways. Expiration-date confusion is causing massive food waste—driving up prices and perhaps even influencing Federal Reserve policy. Fixing this problem wouldn't just help the environment, it would lower food costs, stabilize inflation, and improve economic efficiency. Did I get that right?

SAM: Exactly. Most expiration dates are about quality, not safety—and they're contributing to a mountain of waste. The next time you see an expiration date on your food, stop and ask: Does it look okay? Smell okay? Feel okay?

JORDAN: Don't let a printed number determine what you eat. Use your judgment—and trust your senses.

SAM: Right on! And for anyone listening, the next time you check an expiration date, remember: food waste isn't just a personal issue, it's an economic one.

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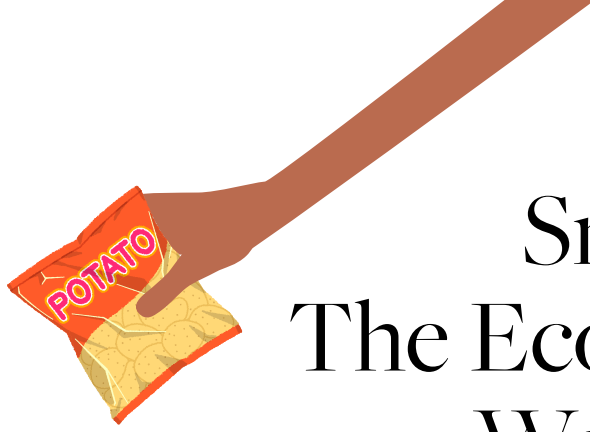
Edgemont Jr./Sr. High School

Scarsdale, NY



Snackonomics: The Economic Inner Workings of the School Lunch Trade

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CITATION STYLE
MLA 9th Edition

HOSTITOS: Welcome to our podcast, *Snackonomics*, where we dive into the inside workings of the age-old school lunch trade. The school lunchroom isn't simply about food—it's a marketplace, a live social experiment, and a crash course in economics, all at once. I am your host, Hostitos, along with my co-host, Co-Toast; our strategist, The Snackegist; and our social economist, Choconomist.

CO-TOAST: In today's episode, we'll explore everything from how game theory can be applied to trading school lunch items, to how social status and supply and demand dynamics shape which snacks we value more than others. Let's get into it!

HOSTITOS: Snacking has seen a steady increase since the 1990s, with over 27% of the average child's daily calorie intake coming from snacks alone (Piernas & Popkin). This rise in snack intake for children calls us back to our old school days and memories of the school lunch trade! Whether it was swapping a bag of Cheez-Its for Skittles or Sour Patch Kids for Lays, we've all experienced it firsthand. Did you know that, in one study, as many as 38% of students participated in at least one food exchange over a given period of three weeks (Sutter et al. 16)?

HOSTITOS: *[laughs]* The grass is always greener in the other lunch box. Well, all this talk about snacking is making me hungry! So, Co-

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Toast, I only packed myself a bag of blueberries. What would you say, if I asked to trade for your jalapeño chips?

CO-TOAST: No way! Do you know how much these chips are worth?

HOSTITOS: I actually do. My blueberries cost way more than your chips (Lewis et al. 23)—your chips are $0.48 while my blueberries cost $2.99.

CO-TOAST: You may be right about the difference in dollar value, but that's where the perceived cost comes in. For example, the Snackegist here would gladly trade me their bag of popcorn for my chips, but I doubt they would even consider trading half a bag for your blueberries. Even though your blueberries might cost more, snacks like chips and popcorn have a higher perceived value, especially in the lunchroom, mostly because of how we see the brands and the immediate salty or sweet taste, which satisfies cravings and conditions us to value these snacks over the more healthy alternatives. Applying this to schools—when given the option between fruit, savory snacks, and sweet snacks only, 6% of kids choose fruit, and 38% and 53% pick sweet and salty snacks respectively (Beets et al. 14). In the lunchroom, money doesn't stand a chance. What does prevail, though, is our desire to get a short-term fix. This adds to the perceived value of snacks more than the actual price tag.

HOSTITOS: Ha! I guess they should charge a lot more for your jalapeno chips! Another example that comes to mind is how people pay for luxury items, such as Louis Vuitton shoes. People spend a fortune on them, even though they won't last longer than much less expensive brands. I know people who swear by their more affordable options that last for a decade, and they cost a fraction of the luxury-branded shoes (Page et al. 24)!

CO-TOAST: Yet, I would still pay more for those Louis Vuitton shoes, even if they don't last as long. The brand is valuable in a way that goes beyond practicality. It's about the image it gives off and how it makes me feel—like a boss when I wear them. In the

case of snacks, the popular, branded snacks can make my dopamine levels go through the roof (Page et al. 24)!

HOSTITOS: Hmm... I guess that does explain why the trade would seem slightly unfair. Let's get others involved in this conversation: Snackegist, Social Choconomist—what do you think?

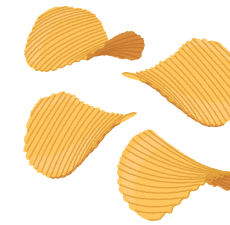
SNACKEGIST: Well, while you guys are on the right path, let's keep on track and dig deeper into how an average an average middle- or elementary-schooler thinks when trading lunches. You're right about the fact that it's not just about the taste or practicality of the snacks—it's about their perceived value or status. This phenomenon is mainly driven by what others think (Norgaard et al. 13). If I have a bag of pretzels but want to trade them for chips, the person I want to trade with might refuse, not because they don't like pretzels, but because they think they can get a higher-value snack instead. It's so crazy—even though they might love pretzels, they will reject the trade to see if they can get something that has more cachet in the lunchroom. Maybe it'll make others envious if they can get a bag of Doritos! Peers influence which snacks are perceived as more or less valuable, and students will lean towards these popular snacks rather than picking the snacks they genuinely like (Norgaard et al. 13).

CO-TOAST: Come on, now. I don't think kids are that strategic! They're just trying to eat.

SOCIAL CHOCONOMIST: That's actually not true. A study found that up to 47% of kids, including those as young as five, always trade efficiently (Brocas 20). These complex lunchroom dynamics are very much possible. In addition, kids also incorporate other elements of economic transactions into their exchanges. For example, in market interactions, trust is an important component in trades (Choi & Storr 20), and it's the same for school snack trades. Kids are more likely to trade with siblings, friends, friends of siblings, and trusted trade partners with whom they have been consistently trading throughout the school year (Comoretto 14). They make deals about future trades, such as, "If I give you this now then I can get something back in the future?" These are not unlike the deals businesses make with each other.

HOSTITOS: I guess, since I don't trust any of you guys—none of my blueberries will be for you!

Peers influence which snacks are perceived as more or less valuable, and students will lean towards these popular snacks rather than picking the snacks they genuinely like.



In any marketplace, including the lunchroom, the value of snacks is determined by the balance between supply and demand.

SNACKEGIST: *[laughs]* Well, it's not just about the trade at hand—it's the bigger picture. Even if a kid wants something now, in the back of their mind, they're thinking they might be able to get something better in the future, even if their current snack is in low demand (Gatzke-Kopp 19). Not many kids may bring a bunch of carrots as a snack since they are a pain to cut and wash, also they aren't a very high-demand snack. But if I had a bunch of carrots and was told that carrots were low in supply, then I would be more likely to value the ones I have now. When applying this situation to kids, it was found that 56% of kids would eat their carrots when told they were in limited supply, compared to 36% who would still eat them even if they weren't told that. 96% of kids even said that the food which was in limited supply was yummier (Maimaran & Salant 19)! This is similar to how scarce resources or limited-edition items are valued in the economy. For the same reason, the scarcity of other snacks like Doritos makes them the snack everyone wants—sort of like your Louis Vuitton shoes! While these are just young kids, they can be very deliberate in their choices.

CO-TOAST: How would this apply to new or rare items, such as fancy BBQ chips?

SNACKEGIST: If you bring in something unique—like a snack that's hard to find in stores—your snack becomes more valuable simply because it's rare. The supply is low, so the demand increases. If a student brings in homemade cookies, they have a lot more trading power than someone who has basic packaged snacks, since their snack is rarer (Hodges 20). People who brought homemade food were also more likely to engage in lunch trades (Sutter et al. 16). This trade of homemade food for store-bought is similar to insider versus outsider access—similar to how countries with large exports of resources such as rare-earth-minerals control the demand for them from other countries (Reuters 25). The demand for cookies may be low for the person making them, because they have so many, but to outsiders—or kids in the cafeteria—the demand is high.

SOCIAL CHOCONOMIST: Precisely. This ties directly into another key principle: market equilibrium. In any marketplace, including the lunchroom, the value of snacks is determined by the balance between supply and demand. This balance, or equilibrium, is constantly shifting as we make our trade decisions. The carrots which used to be in low demand are now beginning to balance out, becoming more valuable and desirable.

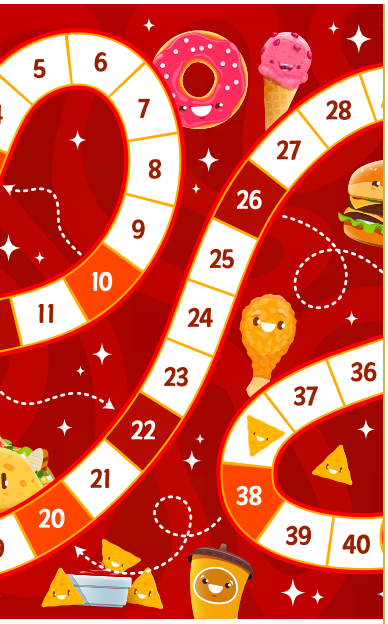
SNACKEGIST: Building on that idea, individual actions can have unintended side effects—what economists call externalities (Helbling 10). For instance, if one student brings in a new snack that hits the shelves and is highly sought after, their activity can ripple through the whole lunchroom, altering how everyone values that snack. In other words, these external factors can unexpectedly shift the equilibrium we just talked about. We saw this back when Flamin' Hot Cheetos used to be the coolest food in the room, but then once Takis were created they took the spot of Flamin' Hot Cheetos (Kiely 13)! Now the old top trader has competition.

HOSTITOS: *[sighs]* I still remember the day that my pizza-flavored Goldfish gave way to Deep Dish Lays.

SOCIAL CHOCONOMIST: What a dark time, but we must move on! Another thing we can consider is how some students are likely to bring the same snack to school daily—meaning they could be considered the designated provider of that snack (Comoretto 14). It's similar to the way in which some companies hone their marketing and work collaborative deals with other companies, where both stand to gain mutual benefits. This reminds me of the Nash Equilibrium, in which two people continue to act in a set manner since breaking the routine would benefit neither of them. If you bring jalapeno chips every day and I bring blueberries but we prefer each other's snack, then trading will always benefit both of us and we'll both be likely to keep our end of the bargain.

CO-TOAST: Another trade tactic is trading more than once, correct?

SOCIAL CHOCONOMIST: Exactly! Let me jump in here to further explain. Let's say I'm eating a healthy snack, like a peach, and I know of someone else who wants a healthy snack but has chips to offer. I might not be interested in chips, but I'll still make the trade, as I know of someone else who will trade chips for popcorn. Seems complicated for middle-schoolers but these types of deals happen



(Brocas 20). Obtaining the chips allowed me to get popcorn, and without understanding the bigger picture, I engaged in indirect trade. My perceived value for popcorn was so high that I was willing to do some extra work to get it!

CO-TOAST: This sounds like a game! Are you telling me that kids are applying game theory in trades?

SNACKEGIST: Actually, yes! Game theory isn't just for advanced math classes—it's all about strategic thinking. Let's say a student is trying to maximize their overall value in lunch trades. They'll hold onto a snack they know is in high demand—maybe they'll even trade it for something that seems less valuable, only to trade that snack again for a better deal. It's all about timing, risk, and predicting what others will do (Brocas 20).

HOSTITOS: Wow! So, are we all secretly running mini-businesses at lunchtime?

SOCIAL CHOCONOMIST: Exactly! And staying up with the times is critical. We see this with popular snack trends. If a certain snack, like a new flavor of chips, becomes the hot item, its demand will skyrocket, and everyone will want to trade for it, even if it doesn't taste that great. This is similar to how brands advertise to create demand and build value (Influencity 24). Think about how a new snack might blow up after being mentioned by a popular YouTuber. Snacks with cartoon characters on the packaging or tied into TV shows have also been shown to have extra-high trade value (Comoretto 14).

HOSTITOS: So basically, advertising and social trends are driving the value of our snacks?

CO-TOAST: Yes, and just as ads create hype for a new product, the lunchroom's social trends create a kind of market demand for certain snacks.

HOSTITOS: But let's take it a step further. Have you ever heard of opportunity cost? It's simply what you lose out on, when you choose one option over another. For example, if you decide to hold onto your bag of chips hoping for a better trade, the opportunity cost is the great deal you could have had right now. In other words, by waiting you might miss out on a good trade that's available at the moment (Fagan 20).

CO-TOAST: That's something I never really thought about. So, if I hold onto my chips instead of trading them immediately, I might miss out on a really good deal that's available now.

HOSTITOS: You hear that, Co-Toast? You could be winning with this deal for my blueberries! On another note, though, this is so dynamic and exciting! It's like a mini-economy but in one lunchroom. Everyone's actions influence each other and it keeps shifting. It's amazing how these concepts from the real world can apply to something as simple as lunch trading!

CO-TOAST: That's the power of understanding economics. It's everywhere, even in places like the lunchroom. From perceived value, scarcity, opportunity cost, and beyond, the lunch trade is full of lessons in economics. So, next time you're trading your snacks, remember—there's a whole lot more going on than you might think. Thanks for tuning into *Snackonomics*, and we'll see you next time!

That's the power of understanding economics. It's everywhere, even in places like the lunchroom. From perceived value, scarcity, opportunity cost, and beyond, the lunch trade is full of lessons in economics.

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Left to right: Isha Shenoy, Kriti Jaladurgam, Alexandra Czyz, Felix Li, Claire Yu

Farmington High School

Farmington, CT

Crispy, Crunchy, and Costly: The Economics of Fried Chicken

ISHA: Welcome to the latest episode of *The Ripple Effect*, where we discuss how America's economy affects you. I'm Isha, joined here today by my co-host, Claire.

CLAIRE: Hey, everyone! *[crinkling sound]*

ISHA: Wait, what's that?

CLAIRE: Oh, it's my dinner. Doesn't it smell amazing? I stopped by Raising Cane's on my way here. Can't talk about food economics on an empty stomach!

ISHA: I can't believe I didn't think of that! It's going to be tough making it through today's episode with a growling stomach. Well, let's dig in...into the topic, not just the chicken.

CLAIRE: Absolutely. Thanks for joining us, listeners. In today's episode, "Crispy, Crunchy, and Costly: The Economics of Fried Chicken," we'll be tackling, you guessed it, fried chicken.

ISHA: That's right! With its growing popularity, fried chicken has become a staple of fast-food chains everywhere, whether you're getting a bucket from KFC, a spicy sandwich from Popeyes, or tenders from Raising Cane's, like Claire! And fried chicken is more than a comforting meal—it's an economic powerhouse.

CLAIRE: Have you ever wondered how that piece of perfectly fried chicken ends up on your plate? Behind every crispy bite is an industry influenced by ever-changing consumer trends, market demand, and economic forces, which determine everything from where the chicken comes from to how much you have to pay. We'll explore supply chain

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costs, global trade policies, labor markets, and take a look at the innovations shaping the future of the industry.

ISHA: First, we have Alexandra Czyz, a professor of food and agricultural economics, here to tell us about the rise of the fried-chicken industry.

ALEXANDRA: Thanks for having me!

ISHA: Of course. So, first off, food is obviously a big part of our lives. But what exactly is the scale of the food economy?

ALEXANDRA: The food industry is one of the largest in the United States, with agriculture, food, and related industries contributing $1.537 trillion to the U.S. GDP in 2023, around 5.5% (Zahniser and Kassel). Fast-food restaurants alone made up $490.21 billion of this revenue in the same year (Zahniser and Kassel).

CLAIRE: Whoa, who would've thought? And fast food is a growing industry, too.

ALEXANDRA: Definitely. Fried-chicken restaurants, in particular, have been on the rise, with chains like Chick-fil-A and Raising Cane's seeing immense success in the past few years. In 2023, Chick-fil-A recorded $21.58 billion in sales, rising by 14.7% from $18.81 billion in 2022, and by 43% from $15 billion in 2021 (Kelso, "Chick-fil-A Continues"). Raising Cane's, another fast-growing fried-chicken chain, more than doubled their sales from 2019 to 2023, going from $1.46 billion to $3.76 billion dollars. On top of that, in 2024, the company achieved its first billion-dollar quarter (Kelso, "Raising Cane's $10 Billion Ambition").

ISHA: What's more, these American fast-food chains have popularized fried chicken on an international scale, with restaurants such as KFC expanding their locations to 150 countries and territories globally (Statista Research Department).

CLAIRE: It's clear that these fried-chicken chains are thriving. People love it. But why is that?

ALEXANDRA: A big part of it comes down to trends in consumer

preferences. People want variety—whether it's extra-spicy flavors, healthier options, or even plant-based fried "chicken."

ISHA: Social media plays a huge role, too. When Popeyes launched its now-famous chicken sandwich in 2019, it went viral, creating overwhelming demand that ran stores out of supply within weeks (Yaffe-Bellany and Sedacca).

CLAIRE: I remember that!

ALEXANDRA: Besides trends, affordability is a big reason fried chicken remains a staple in the fast-food industry. Compared to chicken alternatives, like beef, chicken is cheaper to produce, making it a budget-friendly option for consumers. Alongside this, competition in the fried chicken industry is cutthroat, so many major players maintain low prices to keep demand coming.

CLAIRE: These factors have definitely kept fried chicken affordable despite inflation in the past couple years. But that's a lot on the customer side. What about suppliers? How are they making profits without charging a lot?

ISHA: The production of fried chicken relies on a complex supply chain, and prices of raw materials can fluctuate because of factors like weather and international events. And, of course, fried chicken isn't just chicken; batter, oil, and spices are involved too.

CLAIRE: Let's start with the biggest input: chicken. It requires massive amounts of feed, water, energy, and land to produce poultry. Because food production relies on natural resources, it's vulnerable to extreme weather events such as droughts and hurricanes, which can shrink corn and soybean yields, or disrupt distribution routes. Since feed alone makes up around 70% of the cost of raising a chicken (Moyle), increases in its price force farmers to absorb the costs or pass them down the supply chain.

ISHA: Then there's the price of cooking oil, another major factor. Geopolitical events, like trade restrictions or fuel price spikes, can ripple through the supply chain, increasing costs at every step. When Russia invaded Ukraine, one of the world's top sunflower oil exporters, in 2022, shipments were interrupted, and global vegetable oil prices

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skyrocketed ("Russia's Invasion"). Spices, flour, and even packaging materials have also seen price jumps due to supply chain disruptions.

CLAIRE: How does this affect fried-chicken businesses?

ISHA: With increased costs of key ingredients, restaurants are forced to make tough choices: raise menu prices, shrink portion sizes, or look for alternative suppliers. But, it doesn't always work to raise menu prices, because demand for fried chicken is quite elastic.

CLAIRE: What do you mean, "elastic"?

ISHA: It means consumer demand for fried chicken is sensitive to price changes. Whether it's due to a spike in feed costs, an oil shortage, or a shipping delay, businesses have to adapt quickly—customers balk at seeing higher prices.

CLAIRE: That makes sense. I probably wouldn't have bought those chicken tenders if they'd suddenly gotten unreasonably expensive.

With the U.S. being the world's leading poultry producer, producing more than 43 billion pounds of chicken annually, American chicken is exported to countries all around the world.

ISHA: And when global trade policies come into play, it only gets more complex. Fried chicken might seem like an all-American meal, but its price and availability are heavily influenced by global trade policy.

CLAIRE: With the U.S. being the world's leading poultry producer, producing more than 43 billion pounds of chicken annually (Wiehoff), American chicken is exported to countries all around the world. However, trade barriers, like tariffs, can make exporting more expensive for both producers and consumers. China, for example, imposed high tariffs on U.S. poultry in 2010 in response to trade disputes (Greene). For a few years, this cut off a major export market, and U.S. chicken exports dropped significantly, forcing American producers to find new customers or lower domestic prices.

ISHA: Wait, I think we're missing a key component of fried-chicken production: the people.

CLAIRE: You're right! Labor is a major factor—processing plants, transportation networks, and restaurant workers all contribute to production costs. From the farm to the fryer, fried chicken creates millions of jobs, but not without some challenges.

ISHA: We interviewed Kriti Jaladurgam, an employee at a chicken supplier. Kriti, can you first describe the types of jobs someone in the fried-chicken industry might have?

KRITI: Of course. The fried chicken industry supports millions of workers at different stages. It all starts on chicken farms, where the chickens are bred and raised, with poultry farmers, hatchery workers, and feed suppliers handling the production. Once at market weight, the chicken is sent to processing plants. Companies like Tyson and Pilgrim's Pride slaughter, package, then distribute the chicken. Finally, restaurants handle the final steps: frying, serving, and delivering meals to customers. The fast-food industry alone employs more than 3.5 million workers in the U.S., with a huge portion of that coming from chicken-focused brands like Chick-fil-A, KFC, and Popeyes ("Occupational Employment and Wage Statistics").

CLAIRE: What is your experience with working in poultry production?

KRITI: Unfortunately, my job comes with low wages and tough conditions, with long hours, repetitive tasks, and high injury rates.

ISHA: That doesn't sound great. What about job security?

KRITI: Besides the difficult physical conditions, job insecurity is another major issue. Many fast-food and processing plant workers are part-time or have unpredictable schedules, making financial planning difficult. There's also concern about technology taking over our jobs!

ISHA: Tell me more.

KRITI: To cut labor costs and improve efficiency, many companies are turning to automation, whether it's self-order kiosks and robotic fryers in fast food, or automated processing lines in poultry plants. Although automation makes jobs safer by reducing workplace injuries, it threatens low-wage positions, since machines can now bread, fry, and bag chicken faster than humans.

CLAIRE: Is this the future of fried chicken? Are robots going to be serving me next time I go to Raising Cane's?

ISHA: Maybe! The fried chicken industry is evolving with new technology, sustainability efforts, and shifting consumer preferences.

CLAIRE: One big trend is innovation in production and delivery to optimize operations. KFC, for example, has implemented AI in drive-thrus, using voice technology to take orders (Sahota). The use of automation and robots will likely increase in the coming years for cooking and packaging food, in order to improve efficiency in food preparation and reduce human error. Companies able to adapt to this change will have the upper hand in this highly competitive market, while those who resist may be left behind.

ISHA: And yet, while technology is pushing fried chicken to become more efficient, there's also growing pressure to make it sustainable.

CLAIRE: Producing a fried-chicken sandwich comes with a hefty carbon footprint. Every step of the supply chain, from farms to processing plants to restaurants, requires transportation, which translates to fuel consumption and emissions. It all adds up, contributing to our planet's overall carbon challenge. With more environmentally conscious consumers, a shift towards eco-friendly production options could emerge. But all of this comes at a price. Producing chickens with higher supply costs, such as for sourcing and packaging, will result in a higher price for fried chicken. That being said, companies that invest in efficiency, like AI-based supply chains or automation, might be able to offset some of those expenses.

ISHA: Joining us is Felix Li, a public-health specialist. Felix, are there any other "long run" issues coming from the current obsession with fried chicken?

FELIX: Definitely—the health implications. While the immediate affordability of fried chicken might seem like a relief for many families, the true cost lies in the impact of poor eating. Americans recognize that their diets are on the decline; fewer than one in three U.S. adults think their diet was very good or excellent, and this number is steadily decreasing (Restrepo). Frequently eating fried, heavily processed foods

can lead to a variety of chronic diseases, not only impacting one's quality of life but also coming with a costly price tag.

CLAIRE: How about the health-care system?

FELIX: With obesity rates surpassing 40% of American adults (Emmerich), the health-care system, not just individuals, will be paying for the health effects of these nutrient-lacking, "affordable" meals. Obesity-related diseases cost billions of dollars annually to treat, adding pressure to healthcare systems already stretched thin (Cawley). In fact, obese adults in the U.S. spent about 100% more on medical care per year than those with normal weight (Cawley). Overconsumption of unhealthy foods, though inexpensive up front, comes with a long-term cost that ultimately outweighs the initial savings.

ISHA: All in all, the fried-chicken industry is a major contributor to the U.S. economy, with chains experiencing significant growth alongside challenges that force them to adapt. The introduction of new technology, the push for sustainability, and health concerns have the potential to drastically change the future of the fried-chicken industry.

CLAIRE: That's all for today's episode! Alexandra, Kriti, and Felix, it's been our pleasure discussing all things fried chicken with you.

KRITI: My pleasure.

ALEXANDRA: Of course.

FELIX: Thank you for having me.

CLAIRE: Wow, I can't believe how much went into preparing my four-piece chicken combo! The cost of fried chicken isn't just about what's on the plate—it's a snapshot of the economy in action. Thanks for tuning into this episode of *The Ripple Effect*.

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Left to right: Josh Hayes (advisor), Jaime Yeung, Meher Walia, Mircea Manu, Aaron Labelson

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Dining with the Stars: The Economics of Michelin Star Restaurants

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CITATION STYLE

MLA 8th Edition

HOST: Welcome back, everyone, to *Exploring Economics* where we delve into the different subjects of economics, using real-world examples to help our listeners better understand how economic concepts affect the world. In today's episode—wait...what's that smell? Oh, my goodness—it's Gordon Ramsay!

In today's episode, we will discuss how Michelin Star restaurants impact the economy, examining how macroeconomic concepts and tourism all relate to them. To understand their impact on our economy, we first need to explore what Michelin Star restaurants are.

Chef Ramsay will be discussing the history and logistics of these restaurants. He is a world-renowned chef with a total of eight Michelin Stars across five restaurants ("Michelin-Starred"). Chef Ramsay, thank you for joining us today.

GORDON: Thanks for having me on the show. You may know me for being nifty around the kitchen, but I do have background knowledge in culinary history, as well as having gone to college for hotel management.

HOST: Please give our listeners some insight into what Michelin Star restaurants are and how this rating system was invented.

GORDON: Michelin Star restaurants are establishments that are recognized for their incredible food and dining experience, as expressed through a star rating system. The system is different from standard rating systems

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

In terms of history, Michelin Star ratings arose around the same time as automobiles were invented.

because any star awarded is a major accomplishment. Three stars is the maximum amount of stars that can be granted to any given restaurant.

Michelin takes into account five factors in their criteria: the quality of the ingredients, the harmony of flavors, the mastery of techniques, the personality of the chef as expressed through their cuisine, and the consistency across the entire menu and over time ("Michelin Star System").

In terms of history, Michelin Star ratings arose around the same time as automobiles were invented. In the early 1900s, in France, industrialist brothers Andre and Edouard Michelin compiled the first Michelin Guide that gave detailed instructions on how to repair and change tires, and also included a list of restaurants, hotels, mechanics, and gas stations along popular routes in France ("How Restaurants Get Michelin Stars").

HOST: The humble origins of these stars is very fascinating. Whenever my colleagues and I want to dine at a restaurant for a business dinner, they are always keen on eating at a Michelin Star restaurant. So, how did it expand from a small guide in 1900s France to gain the prestige that it has today?

GORDON: Well, after World War I, the Michelin brothers ramped up the guide's quality, eliminated advertising, and recruited anonymous diners to visit and review restaurants.

The guide began awarding Michelin Star ratings in 1926 and a restaurant could be awarded a single star if deemed a "very good restaurant in its category." In 1931, the rating system expanded to the three-star rating that continues today ("How Restaurants Get Michelin Stars").

And yes, it's that same famous Michelin tire company that awards the stars today.

HOST: How many Michelin Star restaurants are in the world today?

GORDON: According to the Michelin Star System webpage, there are a total of 2,817 restaurants in the world that have Michelin Star status of any kind with only 137 restaurants that are entitled to 3 stars ("Michelin Star System").

HOST: And how many are in the United States?

GORDON: As of June 1, 2024, there are 13 restaurants with 3 stars and nearly 234 establishments with a designated rating (Tomaso).

HOST: Chef Ramsay, it was a pleasure to have you on the show today. One day, you must make your famous beef Wellington for me.

GORDON: Of course—I'd love to! Thank you for having me.

HOST: Now we welcome Andrei Shleifer, an acclaimed economist who has been a professor of economics at Harvard University since 1991 with a main focus on behavioral economics (Shleifer). We will explore the world of microeconomics and how these concepts apply to Michelin Star restaurants.

Professor Shleifer, thank you for joining us. Let's start with the basics. What is the law of demand?

ANDREI: Firstly, thank you very much for having me.

The law of demand is a fundamental principle of economics that claims that at a higher price, consumers will demand less of a good. The inverse applies as well. At a lower price, consumers will demand more of a good.

HOST: Let me see if I understand this correctly. Imagine that the price of a certain commodity, let's say corn, increases; the quantity demanded of corn should decrease. And vice-versa?

ANDREI: Precisely so.

HOST: Would you mind explaining the concept of Veblen goods?

ANDREI: Veblen goods actually behave the opposite way of how the law of demand indicates that these products should act. They typically are coveted luxury items, and as the price of these goods increases, the demand also increases (Chen). For example, a specific jewelry brand would be considered to produce Veblen goods if there is a greater demand as the jewelry becomes more expensive.

HOST: Interesting. This phenomenon makes little sense. Why would someone be more likely to buy a good when it costs more?

ANDREI: The answer to this question speaks to the behavioral economics we talked about before. It's all about self-esteem. We naturally want to feel good about ourselves, and buying luxury items makes that happen. When we buy a normal good, like corn at the supermarket, it doesn't make us feel special, or different, or inflate our self-esteem (Chen).

This is the same reason why most of Rolex's best watches or Ferrari's cars are completely sold out before most people even know they're for sale. These status symbols attract incredibly high demand.

HOST: Professor Shleifer, what happens to restaurants as they receive more Michelin Stars?

ANDREI: Well, the response is very interesting. In this case, the more Michelin Stars the restaurant receives, the more it draws in demand. When a restaurant obtains one star, it increases its activity by around 20%. When it acquires its second star, its activity increases by 40% more. Upon its third star, its activity can get boosted by 100% (Shin)! Astronomical growth, to say the least.

HOST: That is unbelievable growth. Is this trend reflected in the prices as the number of Michelin Stars increases?

ANDREI: Absolutely. The new demand enables them to increase their prices. One star equates to a 14.8% increase in price. Two stars result in a 55.1% rise in price. And three stars drive the prices up by 80.2%. So, to put it simply, more Michelin Stars means increased

demand which, leads to increased prices (Shin). This is why it's so hard to get a reservation at these types of restaurants

HOST: Just summarizing, Michelin Stars empowers these restaurants to increase their prices which raises demand.

ANDREI: Exactly right.

HOST: Well then, can we classify Michelin Star restaurants as a Veblen good?

ANDREI: I think that is a reasonable conclusion to draw. It's been established that as a restaurant receives additional Michelin Stars, their price increases and so does their demand. However, the converse is also true. When a restaurant loses a star, its profits plunge by 76% (Lai et al.).

HOST: Well, thank you for joining our conversation today, Professor Shleifer, and providing us with interesting and insightful information about the basic principles of microeconomics and how they apply to Michelin Star restaurants. Now we welcome Nick Kokonas, who is co-founder of the Alinea Group, which includes the three–Michelin Star restaurant Alinea, and who is an expert in fine-dining economics (Hammond). He will help us explore the factors that affect Michelin Star restaurants' menu pricing. Mr. Kokonas, Thank you for joining us today.

NICK: It's a pleasure to be here.

HOST: Mr. Kokonas, Michelin Star restaurants are known for their extraordinary dining experience and high-end ingredients. How does the costs of these factors affect menu pricing?

NICK: The ingredients that Michelin Star restaurants use are the very best. Of course, this comes with high costs that are definitely reflected in menu prices. Osetra caviar, for example, can be over $100 per ounce *(Caviar Russe)*.

HOST: Now I'm wondering what happens when the prices of these ingredients change. In your expertise, do menu prices often reflect the changes in the costs of ingredients?

NICK: No, for most ingredients, restaurants are likely to absorb

Veblen goods actually behave the opposite way of how the law of demand indicates that these products should act. They typically are coveted luxury items, and as the price of these goods increases, the demand also increases.

changing costs rather than changing their menu prices. Maintaining the Michelin Star restaurant dining experience means that restaurants must also maintain a high-end reputation, which means having predictable pricing. After all, part of the high demand for Michelin Star restaurants is the experience. One exception to this is fish. Because of the volatility of the fish market, the prices of seafood may be reflected in menu costs.

Once again, this phenomenon ties back into the concept that Michelin Star restaurants can upcharge these expensive prices, or produce economic rent, due to the lack of other restaurants with this prestige.

HOST: Interesting, so, menu prices must be incredibly inflated. I guess that demonstrates the demand for these restaurants. Are there any other factors that affect pricing in Michelin Star restaurants?

NICK: There aren't that many other factors that affect pricing at most Michelin Star restaurants. However, at one of my own restaurants, Alinea, we use dynamic pricing.

HOST: What's dynamic pricing?

NICK: At Alinea, we adjust our reservation pricing based on demand for each table. When there is less demand for seats at our restaurant, prices decrease. When there is more demand for seats, such as on weekends or holidays, prices increase. This has significantly lowered the number of no-shows and short-sits, and after introducing our dynamically priced ticketing system, our EBITDA (earnings before interest, taxes, depreciation, and amortization) margin increased by 38%. This maneuver actually follows the supply and demand model which shows how as prices increase, demand decreases and vice versa (Wright). It is a microeconomic concept called price discrimination and, in this case, it is completely legal. It's similar to how airline companies charge different prices for tickets depending on the time and day you are flying, even if it's to the same destination.

HOST: That is simply fascinating, Mr. Kokonas. Thank you very much for being here today and educating us about Michelin Star pricing. Now we welcome Mr. Bruce Grindy, who is the Vice President and Chief Economist at the National Restaurant Association ("Research"). He will help us discuss the impact of macroeconomic factors and events on restaurants—specifically Michelin Star restaurants. Mr. Grindy, thank you for joining us today.

BRUCE: It is a pleasure to be on the show.

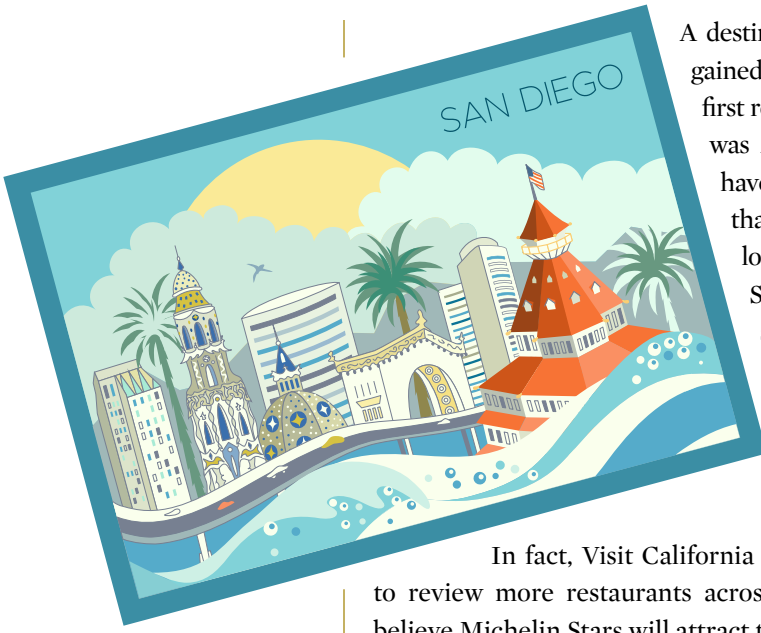
HOST: Mr. Grindy, as we just discussed, Michelin Star restaurants are able to absorb any unforeseen costs due to high-profit margins. What is economic rent and does this concept apply to Michelin Star restaurants?

BRUCE: Economic rent is an amount of money earned that exceeds that which is economically or socially necessary. Economic rent arises due to market imperfections, which means that there are high barriers to entry and exit and different products and services provided (Hayes). These qualities are the reasons Michelin Star restaurants are imperfect markets: the Michelin Guide upholds high standards to be granted a star, making it difficult to enter this market, and each restaurant has a unique cuisine offering, differentiating the products each one sells.

Furthermore, this idea is illustrated in the scarcity of Michelin Star restaurants. New York, a city famous for its dining, has about 23,000 dining establishments. If you were to eat at a different NYC restaurant for every meal, it would take you 7.5 years to eat at every restaurant (Golata)! However, there are only 74 Michelin Star Restaurants in NYC which is quite surprising ("NYC's Michelin-Starred"). Once again, this phenomenon ties back into the concept that Michelin Star restaurants can upcharge these expensive prices, or produce economic rent, due to the lack of other restaurants with this prestige.

HOST: It seems that Michelin Star restaurants garner interest and larger profits. How do these restaurants impact other aspects of the economy?

BRUCE: Well, the most important factor, in my mind, is the emerging interest in gastronomic, or food-related, tourism. This specific topic has begun to garner a lot of interest among economists in recent years. The global culinary-tourism market size was estimated at $11.5 billion in 2023 and is projected to grow at a compound annual growth rate of 19.9% from 2024 to 2030. These numbers shouldn't be surprising given that 34% of tourists visit places that attract them in terms of cuisine *(Culinary Tourism Trends)*.



A destination in the United States that has gained popularity recently is San Diego. The first restaurant to receive a star in this area was Addison, in 2019. Since then, there have been four additional restaurants that have earned stars (one restaurant lost its star earlier this year). Similarly, San Diego's tourism and culinary sector has significantly increased, raising more money for the city, which allows for more money to be allocated to various components of their budget (Vinson).

In fact, Visit California paid the Michelin Guide $600,000 to review more restaurants across California, illustrating how they believe Michelin Stars will attract tourism (Stone).

HOST: Do you mind providing us with an example of how Michelin Star restaurants drive tourism to a specific region or destination internationally?

BRUCE: Various studies have been conducted to demonstrate how Michelin Star restaurants drive tourism to specific destinations. Specifically, two separate studies, one performed in Spain (Castillo-Manzano et al.) and the other executed in Portugal (Martins), clearly show that tourists intentionally traveled to a given destination to experience these restaurants.

HOST: It seems that there can be a clear correlation drawn between Michelin Star restaurants and tourism.

BRUCE: Yes, especially with the completion of several studies around the world such as the ones mentioned above, or even others such as those in Taiwan, China, Philippines, Armenia, France, and more.

HOST: From what I'm gathering, I see that Michelin Star restaurants maintain a dominating presence in the culinary industry. What do you see for the future of Michelin Star restaurants and the economic impacts on the industry?

BRUCE: As we just discussed travel, let's start there. Younger generations are more keen on taking vacations, both internationally and domestically. 66% of travelers claimed they are more interested in taking vacations now than before the COVID-19 pandemic ("What is the Future of Travel?"). As a result, Michelin Star restaurants will only experience more traction.

Additionally, it may seem surprising, but the Michelin Guide has not completely established its presence around the world yet. The process of beginning to rate restaurants is complex, detailed, and onerous so it takes them a while to expand. In fact, Michelin started rating in America only in 2005 and has only covered eight states. For instance, this past July, Michelin announced that it was going to launch in Texas (Graham). Hence, the Michelin Guide is expected to expand and drastically increase the culinary industry and the popularity of Michelin Star restaurants.

HOST: Well, Mr. Grindy, thank you so much for being a guest on the show today and educating us about the interesting macroeconomic effects on Michelin Star restaurants.

Thank you all for listening to today's podcast, and be sure to stay tuned for the next episode of *Exploring Economics*.

In fact, Michelin started rating in America only in 2005 and has only covered eight states.

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Left to right: Zeina Faour, Yara AbuZraineh, and Daniella Stefan

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Trending Bites: The Economics of TikTok Food Phenomena

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CITATION STYLE

Chicago Manual of Style, 17th Edition

YARA: Welcome to the *Eats and Economics* podcast, where we talk about the economics of food. I'm Yara, your host. Today, we're breaking down the TikTok food phenomenon. On the surface, it's all fun and trendy, but underneath, there's fascinating economics at play. From your grocery cart to global supply chains, TikTok's impact goes far beyond dinner ideas. I've brought in shop owner Daniella and economist Zeina to help us understand TikTok's impacts on the food economy.

DANIELLA: Hello! I'm Daniella, owner of ChocoDelight, a chocolate shop. I've seen firsthand how TikTok has completely transformed the food economy, especially for small businesses like mine.

ZEINA: I'm Zeina, your economist today, here to explain what's actually happening behind all this food trend chaos. It turns out TikTok is more than just an app—it's changing what we eat, how we shop, and how industries operate.

DANIELLA: And as a business owner, I've definitely seen the effects. One viral trend can skyrocket demand for a product, and the next week it's a completely different story.

YARA: All right! Let's dig in! Zeina, how does a 20-second TikTok video manage to shake up entire industries?

ZEINA: Great question! TikTok is unlike any other platform. Instead of relying on user followers, it operates on engagement metrics including likes, shares, comments, and watch time to determine which videos go viral. This creates an incredibly fast-paced cycle of trend adoption and amplification, turning a single video into a global phenomenon in a matter of hours (Fannin, "The Strategy Behind TikTok's Global Rise," 2019).

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

From an economic perspective, these viral moments create positive demand shocks—sudden and significant increases in consumer interest that ripple across markets. But the deeper impact is that TikTok trends often shift the demand curve outward.

YARA: Demand curve?

ZEINA: In economics, the demand curve represents the relationship between the price of a product and the quantity consumers are willing to buy. An outward shift means that at every price level, consumers are now willing to purchase more of the product, signaling a structural change in consumer preferences.

Let's take the baked feta pasta TikTok trend as an example. In early 2021, this simple recipe went viral on TikTok, and U.S. feta cheese sales surged by over 200% (Market Research Reports, "Feta Cheese Sales Surge Amid Viral Baked Feta Pasta Trend," 2021). For perspective, feta was previously a niche product found in only about 20% of U.S. households (U.S. Grocery Price Trends, "Analysis of Price Increases During TikTok Food Phenomena," 2021). The trend transformed it into a staple overnight. On the demand curve, this outward shift illustrated a complete recalibration of consumer behavior, with consumers buying more feta at every price point.

DANIELLA: Let me guess—when demand grows faster than supply, prices shoot up, right?

ZEINA: That's exactly right, Daniella! The feta producers faced price inelasticity of supply in the short term.

YARA: Inelasticity, what now?

ZEINA: Supply elasticity measures how responsive producers are to changes in demand. For agricultural goods like feta cheese, supply is often inelastic because production depends on fixed resources—like sheep or goat milk—and labor-intensive processes, including aging.

These constraints make it nearly impossible to immediately increase supply in response to demand spikes (Katsaliaki, Galetsi, and Kumar,

"Supply Chain Disruptions and Resilience," 2022). As a result, when demand surged, grocery stores experienced shortages, and prices rose sharply. In some regions, feta prices increased by up to 30% as retailers tried to ration their limited stock (Nielsen Consumer Insights, "Spike in Complementary Food Sales During Viral Food Trends," 2021). This upward pressure on prices is a textbook example of how markets reach a new equilibrium when demand exceeds supply.

YARA: So, TikTok isn't just creating food trends—it's creating market disruptions. Does this mean viral food trends like this can cause inflation?

ZEINA: Absolutely, but on a microeconomic scale. The feta pasta TikTok trend is a perfect case study in demand-pull inflation, where increased consumer demand outstrips available supply, pushing prices higher (Investopedia, "How Do Externalities Affect Equilibrium and Create Market Failure?" 2025).

YARA: And it wasn't just feta—right? Tomatoes, olive oil, pasta... even baking dishes were in short supply. What's happening there?

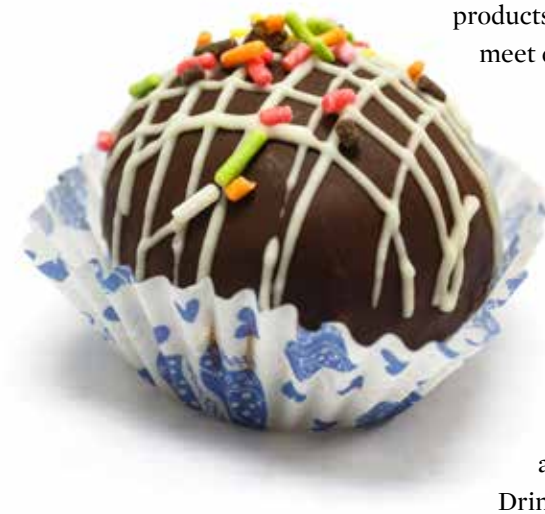
ZEINA: That's a great observation, Yara, and it points to the concept of derived demand, which occurs when the demand for one product increases demand for other products used alongside it. In the case of baked feta pasta, complementary goods like tomatoes, pasta, and olive oil all saw significant demand spikes because they were essential ingredients in the recipe (Nielsen 2021).

YARA: That makes sense. By how much did the sales change, though?

ZEINA: Tomato sales rose by 20%, while pasta saw a 30% increase in demand during the height of the trend (Retail Data Report 2021). Olive oil, another key ingredient, experienced a 15% surge in sales (Nielsen 2021). But the ripple effects extended even further—sales of oven-safe baking dishes rose by 25%, as consumers wanted the exact tools used in the viral videos. Brands like Pyrex reported significant increases in website traffic and online sales as they capitalized on the trend (Retail Data Report 2021).

DANIELLA: I saw this with chocolate bombs, too. Once they went viral on TikTok, people weren't just buying cocoa—they wanted edible glitter, molds, fancy packaging, and even recipe cards. These weren't

The feta pasta TikTok trend is a perfect case study in demand-pull inflation, where increased consumer demand outstrips available supply, pushing prices higher.



products I normally carried, but I had to pivot quickly to meet demand.

ZEINA: Exactly, Daniella. This interconnectedness of markets is what economists call multiplier effect. When one sector experiences increased spending, it stimulates economic activity across related industries. For example, packaging suppliers for chocolate saw unprecedented demand as TikTokers sought creative ways to showcase their creations. Similarly, the surge in cooking-gadget sales benefited retailers and manufacturers alike (Amazing Food and Drink 2024).

YARA: Wow, I didn't realize how deep the ripple effects go. But what about substitute products? Don't they see demand spikes, too?

ZEINA: Great question, Yara. Yes, substitutes often experience what's known as substitution effects, where consumers switch to alternative products when the primary item becomes too expensive or unavailable. During the TikTok feta trend, goat cheese and ricotta emerged as popular substitutes. Goat cheese prices rose by 15% as consumers adapted to the shortage (Nielsen 2021).

These dynamics show how TikTok food trends don't just influence one market—they create ripple effects that cascade through complementary and substitute goods, showing the complexity of modern supply chains (Katsaliaki, Galetsi, and Kumar 2022).

YARA: So, TikTok trends don't just move demand—they stress supply chains. Let's unpack that.

ZEINA: When demand surges suddenly, the immediate supply of goods is determined by the short-run aggregate supply (SRAS) curve, which reflects the total production available at a given price level in the short term. Unlike long-run supply, SRAS is constrained by existing production capacity and available resources, making it difficult to scale up quickly (Katsaliaki, Galetsi, and Kumar 2022).

Take cocoa, for instance. When chocolate bombs went viral on TikTok, global cocoa demand didn't just increase—it tripled in a matter of weeks.

This dramatic surge caused cocoa prices to spike by 18% (Commodity Market Data 2020). Cocoa farming is an excellent example of supply inelasticity, because it depends on long production cycles, specific climate conditions, and labor-intensive farming practices. A cocoa tree takes up to five years to mature and yield beans, which means any sudden uptick in demand can't be met immediately. This rigidity created bottlenecks across the supply chain, from producers to retailers (Supply Chain Today 2025).

DANIELLA: I know what you're talking about—I witnessed it firsthand. It wasn't just cocoa, though. The demand trickled down to packaging and even shipping materials, which became harder to source as more businesses tried to meet the same surge in demand. Some things became as hard to find and buy as toilet paper in 2020!

ZEINA: That's the ripple effect in action, Daniella. Viral TikTok food trends expose the fragility of modern supply chains, which are often optimized for efficiency, not flexibility. This lack of adaptability makes them vulnerable to disruption. For example, like Daniella mentioned, during the chocolate-bomb craze, suppliers of specialty molds and edible glitter faced shortages because they hadn't anticipated such a rapid surge in demand (Amazing Food and Drink 2024).

Even logistics systems faced strain. Shipping costs for essential materials, like packaging, increased by 12% globally as businesses scrambled to meet heightened demand. This is what economists call a secondary market distortion, where upstream supply chain bottlenecks create ripple effects downstream, inflating costs across the board (Acemoglu and Tahbaz-Salehi 2024).

YARA: So, TikTok doesn't just stress food production—it disrupts everything around it.

ZEINA: Precisely. These disruptions often lead to demand-pull inflation, which, again, is where heightened demand across multiple industries pushes up prices for related goods and services. For example, during the peak of the baked feta pasta trend, olive oil suppliers

experienced regional shortages, causing a 15% price increase in the U.S. market. Similar patterns were observed with tomatoes and pasta (Nielsen 2021). The interconnected nature of these goods means that a single viral trend can destabilize entire supply chains.

DANIELLA: It's amazing how something as simple as a viral video can reveal just how unprepared some supply chains are for sudden demand shocks.

ZEINA: Exactly. What this highlights is the growing need for supply chain resilience. Businesses are starting to realize that balancing efficiency with adaptability is critical in a world where consumer behavior can shift dramatically overnight because of platforms like TikTok. For example, investing in diversified suppliers and flexible production systems could mitigate some of the risks associated with demand surges fueled by TikTok trends (Katsaliaki, Galetsi, and Kumar 2022).

YARA: Okay, so TikTok sets the market in motion—but why do people buy into these trends so obsessively? Is it just FOMO?

Viral trends tap into our need for social belonging and status signaling. Sharing a unique or trendy product on TikTok is a way of signaling individuality while simultaneously aligning with a larger group. It's a fascinating blend of economics and psychology .

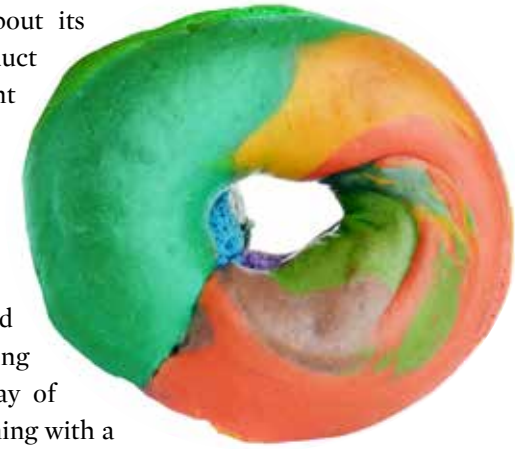
ZEINA: FOMO—fear of missing out—is definitely a major driver, Yara. TikTok creates urgency by leveraging herd behavior, a concept in behavioral economics where individuals mimic the actions of the majority, even if those actions don't align with their personal preferences (Psychologs 2023).

Here's how it works: When millions of people post, comment, and recreate the same trend, it creates a snowball effect that pressures others to participate. Humans are naturally social creatures, and being part of a viral trend provides a sense of social utility—essentially, the satisfaction and validation that come from being included in a collective experience (ID Times 2025).

DANIELLA: So, it's not just about the food itself. It's about the experience of participating in the trend.

ZEINA: Exactly, Daniella. That's why TikTok trends that are visually appealing—like rainbow bagels or glittery desserts—often go viral. The aesthetic appeal adds symbolic value to the product, making it more than just something to consume—it becomes something to share, showcase, and celebrate (MagnifyMinds 2025).

This behavior aligns with bounded rationality, a concept that recognizes that people don't always make logical decisions. Instead, their choices are influenced by limited information, emotions, and social pressures. For example, many people spent exorbitant amounts on TikTok viral "Pink Sauce" despite having concerns about its ingredients or taste. The allure wasn't in the product itself, but in being part of a cultural moment (Psychologs 2023).



YARA: So it's as much about the social media clout as it is about the actual product?

ZEINA: Absolutely. Viral trends tap into our need for social belonging and status signaling. Sharing a unique or trendy product on TikTok is a way of signaling individuality while simultaneously aligning with a larger group. It's a fascinating blend of economics and psychology (ID Times 2025).

YARA: But not all trends are sustainable, right? What are the downsides?

ZEINA: That's right, Yara. One major downside is overproduction inefficiency, where businesses overestimate the longevity of a trend and ramp up production only to find themselves with unsold inventory once the trend fades (New York Bakery Association 2018).

Take the rainbow bagel trend, for example. During its peak, bakeries across New York City invested heavily in dyes, labor, and marketing to meet demand. But within a few months, consumer interest had plummeted, leaving many businesses with wasted inventory and sunk costs. This highlights the risks of misjudging market dynamics when trends are so short-lived (Amazing Food and Drink 2024).

DANIELLA: I've felt that pain. After the pink (or ruby) chocolate trend, I had shelves full of unsold molds. It's money lost, and there's not much you can do to recover.

ZEINA: Another concern is negative externalities, or unintended costs that affect third parties. Viral food trends often strain natural resources and contribute to environmental degradation. For instance, the TikTok avocado toast craze led to overharvesting in Mexico, causing

deforestation, soil erosion, and water shortages (UN Agricultural Report 2018).

YARA: That makes me feel a little guilty. I must've bought a million avocados when that toast was trending.

ZEINA: Well, that wasn't the only case. Similarly, the surge in cocoa demand during the chocolate-bomb trend highlighted unsustainable farming practices in certain regions. Cocoa farming has historically faced challenges like deforestation and child labor, and sudden demand surges exacerbate these issues (Commodity Market Data 2020). This illustrates how viral trends can unintentionally amplify existing inequalities and environmental harms.

YARA: So, in a way, these trends can do as much harm as good?

ZEINA: That's exactly why businesses and consumers need to be more mindful. Ethical sourcing practices, sustainable farming methods, and transparent supply chains are crucial for mitigating these negative impacts. Consumers, too, have a role to play by supporting brands that prioritize sustainability and fair labor practices, especially in the food economy.

YARA: Let's end on a hopeful note. TikTok has also introduced global cuisines to new audiences. What's the impact there?

ZEINA: TikTok has truly revolutionized the way people experience food by reducing information asymmetry—the gap in knowledge between producers and consumers. By showcasing niche cuisines in engaging, bite-sized videos, TikTok has made foods like birria tacos, Korean corn dogs, and bubble tea accessible to a global audience (Fannin 2019).

This has been a game-changer for small businesses. For example, some restaurants serving birria tacos reported revenue increases of 40% after the dish trended on TikTok (Yelp Economic Impact Report 2021). The platform has essentially democratized food discovery, allowing immigrant-owned businesses and local producers to reach audiences they never could have before (Jia and Liang 2021).

YARA: That's amazing.

DANIELLA: TikTok has done wonders for my business, too. Matcha-flavored chocolates weren't even popular before. Now, they're one of my best sellers, all thanks to a single viral video.

YARA: What's next for the TikTok food economy?

DANIELLA: I think we'll see sustainable trends, like zero-waste recipes and plant-based desserts.

ZEINA: And I predict artificial intelligence playing a bigger role—tools suggesting recipes based on pantry items, reducing waste.

YARA: TikTok's ripple effects obviously go far beyond just food. Well, that's a wrap, folks! Big thanks to Daniella and Zeina for breaking this down with me. Until next time!

DANIELLA: Thanks!

ZEINA: Thank you! Bye, everyone!

TikTok has truly revolutionized the way people experience food by reducing information asymmetry—the gap in knowledge between producers and consumers.

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Fit or Fried: What Chick-fil-A's Menu Tells Us About Health Consciousness And Price Elasticities

VICTOR: Welcome back everybody! For those of you who are new or unfamiliar with my podcast, I'm your host, Victor Ma, on our long-running series *Food for Thought*. In this week's edition, I am joined by a few friends of mine to tackle the ongoing dilemma regarding the "Fit or Fried Choices" on the Chick-fil-A menu. I believe we had a very neat idea—we made a natural experiment out of Chick-fil-A's menu and learned something new about appetite-suppressing GLP-1 drugs such as Ozempic. So, please welcome Sai, Jahi, and Kyle alongside me on this week's episode!

Jahi, Sai, Kyle: Nice seeing you all!

VICTOR: So, everybody, let me start by asking a question: Did you know that the United States is the most obese country among all advanced economies?

KYLE: Really? I didn't know we would take the lead on that!

JAHI: I've actually read about this before! According to data from OECD.org, the age 15+ population in the U.S. has a self-reported overweight obesity rate of around 67.7% as of 2022, which is higher than all other advanced economies.

KYLE: Wow, two out of three Americans? But doesn't happiness come in all shapes and sizes?

VICTOR: It might, but more people are realizing that obesity can lead to a variety of problems. The estimated cost

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CITATION STYLE

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of diabetes alone in 2022 was $412.9 million (Diabetes.org). Obesity also costs more as infrastructure must be changed to accommodate the obese. Socially and psychologically, obese people are affected as they face discrimination and prejudice in various aspects of life, such as employment (WHO.int).

SAI: No wonder the burden of health care is so heavy for the USA.

KYLE: Was it always like this?

VICTOR: No, the obesity rate was around 13% in the early 1960s, but started to climb steadily from the 1980s onward (USAFacts.org).

SAI: Ah, that seems to overlap with the development of the fast-food industry. The industry really started to boom in the 1950s and 1960s with the rise of car culture and the expansion of the highway system, making drive-thru and take-out meals more convenient for Americans on the go (Medium.com).

KYLE: As disposable incomes rise, time for cooking becomes scarcer, and eating out or ordering food to be delivered becomes more affordable and convenient. Think about DoorDash! Americans are eating outside the home more than ever (Lin & Frazao 29). According to U.S. Department of Agriculture data, after a temporary decline in 2020 due to the COVID-19 pandemic's impact, 2022 saw food-away-from-home establishments accounting for 53.9% of total food spending—the highest share recorded since the USDA's Economic Research Service began tracking this information.

SAI: Are researchers and the media not pointing out the unhealthy nature of fast food? I thought Americans were becoming health-conscious and nutritionally aware of the foods they consume.

VICTOR: Well, I guess a growing group of people definitely pay attention to nutrition facts like fat content, fiber, and calories in determining the foods they choose to eat. But a 2009 study pointed out not all people are interested in the relative healthiness of their food choices (Lone 23). In a 2022 survey, U.S. university students reported

that taste was the most important factor in food selection, and showed little to no interest in healthiness or nutritional value (Xingbo 5). Another study hypothesized that males, African-Americans, those with less educational attainment, and lower income groups would experience greater price effects (Meyer et al. 434).

KYLE: I also read a study that examined customers' perceptions of fast-food restaurants' menu items, according to their own nutritional knowledge and health consciousness. The study showed there was a correlation between the respondents' choice of favorite fast-food restaurants and their perception of the healthiness of the restaurants' menu items (Hwang and Cranage 68).

JAHI: So, with this correlation between consumers' level of health consciousness and their "ratings" of fast-food restaurants, the price elasticity and demand these businesses experience is affected?

SAI: Sure. In economic models, the demands for food products are functions of their prices and the prices of other food products, the prices of other goods, income (purchasing power), and other factors that affect preferences, such as advertising, awareness, and health conditions. Changes in the relative prices of different food products, such as healthy versus unhealthy items, are expected to affect the relative demand for these products (Andreyeva et al. 216). Exogenous shocks such as taxes and/or subsidies that alter these relative prices can be expected to change consumption, as well.

JAHI: The same paper pointed out that staple foods that are generally perceived as healthy, like eggs, vegetables, and milk, maintained a relatively stable demand even if prices increased, with elasticity scores around 0.27–0.51. This is an inelastic demand. On the other hand, unhealthy foods like sugary drinks, meats, and takeout had higher elasticity scores at around 0.72–0.81, which means that demand decreased when price increased (Andreyeva et al. 216). This is an elastic demand.

VICTOR: So, do we expect an inelastic demand for healthy food choices, because people consuming them are generally more health-conscious and less likely to change their food choices based on cost?

KYLE: I believe so. In fact, we observed that the obesity trend started to normalize in 2023, because of appetite-suppressing drugs like

Ozempic. In "The No Hunger Games" paper, Hristakeva et al. found that 12% of Americans already use Ozempic, and that number will only continue to grow as more and more people are willing to take drugs as to stick with healthy food choices.

SAI: Just now you mentioned that younger people were less interested in the nutritional benefits of food. A study by Lisa Powell and Frank Chaloupka showed that when schools and cafeterias reduced prices of fruits and salads, there were huge sales increases.

The study also found that cutting prices on low-fat snacks boosted sales by as much as 93%. Powell and Chaloupka also researched how taxes and subsidies could impact eating habits and help reduce obesity. Trivial price changes have no effect on obesity rates, but larger changes can significantly decrease obesity rates, especially for higher-risk groups including the uneducated and those with low income.

SAI: Ah, yes, the high-risk groups. A 2001 study that examined fast-food use among adolescents shows that non-white, low-income teenagers are extremely susceptible to developing Frequent Fast Food Restaurant Use (FFFRU), an addiction-like and chronic consumption of fast food (French et al. 1823).

KYLE: I agree with the above findings about adolescents, because health problems generally come when one gets older. But I was wondering if having a family member taking GLP-1 drugs would impact the demand elasticity of the younger family members?

VICTOR: Sure, that is an interesting thought. So, to summarize: Consumers who prioritize their health ("high-interest" group) are often willing to pay a premium for menu items that align with their dietary preferences, so the elasticity of demand for healthy menu items is low for them. But for the "low-interest" group (high-risk), who are likely to change their consumption based on cost, the elasticity should be high.

JAHI: Very interesting. Then how much higher is the demand elasticity for healthy food choices for the "high-interest" group compared with the "low-interest" group? Is there a way to test this hypothesis?

VICTOR: Sure! We found a natural experiment to conduct using the Chick-fil-A menu. Chick-fil-A, known for its signature chicken sandwiches and attentive customer service, has been the industry leader that adapted to the "Dual Marketing Strategy" suggested by Lone et al. The brand has introduced a variety of menu items that cater to both "high- interest" and "low-interest" customers. For example, the Grilled Chicken Sandwich is a lighter alternative to the classic Fried Chicken Sandwich, featuring a marinated and grilled chicken breast.

KYLE: Sounds yummy! How are they priced right now and why is this a "natural experiment"?

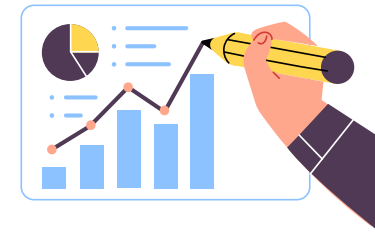
JAHI: According to the Chick-fil-A near our school, the Fried Chicken Sandwich is priced at $5.99, and the Grilled Chicken Sandwich is priced at $6.99. In a natural experiment, the independent variable is "natural," as fried- and grilled-chicken sandwiches already exist as menu items with a price difference. These prices will dictate demand, which is our dependent variable.

JAHI: This inquiry was the basis for our survey. Tell us more, Victor.

VICTOR: The way we made our first Implied Volatility measurement was we simply asked a few health-related questions in our survey. All were multiple-choice questions for convenience purposes, but some were more open-ended, such as "How do you gauge whether a food is healthy?" Others employed a Likert Scale: "On a scale of 1 to 5, 1 being not at all and 5 being absolutely, how much do you care about your weight?" The "low-interest" group was defined as participants who answered 3 or lower for the Likert Scale question, and the "high-interest" group were those who answered 4 or 5.

KYLE: Great recap, Victor! So, after conducting our literature review, we tried to incorporate all the elements of the papers we reviewed into this experiment. We were specifically interested in targeting the niche group of teenagers, as most teenagers are beginning to work jobs but still live paycheck to paycheck. This means they hold money in high regard, which gives us a raw, true indicator of price elasticity. We also improved our base knowledge about this group by reviewing the study by French, and others.

JAHI: Yep! We went to students around our school and asked them to fill out our survey.



In fact, we observed that the obesity trend started to normalize in 2023, because of appetite-suppressing drugs like Ozempic.

VICTOR: The way we measured price elasticity (a dependent variable) was, we first asked the participant if he or she consumed more fried or grilled chicken. We gave participants multiple choices for the price at which they would purchase grilled chicken over fried chicken. The options would be a 21% reduction of the price of a grilled chicken sandwich ($5.50), a 15% reduction ($5.99), etc. Options would go up until the original price of a grilled chicken sandwich. After we plotted the price vs. demand curve, mathematically speaking, the dependent variable would be equivalent to the slope of the line of the demand curve.

SAI: We hypothesized that those with higher health consciousness would be less likely to select a very low price for grilled chicken (inelastic, or low elasticity). For those with low health consciousness, we hypothesized they would be more likely to select a comparatively very low price for grilled chicken (high elasticity).

JAHI: As mentioned before, to explore the new factor of GLP-1 appetite suppressing drugs, we also asked about participants' and their families' past or current use of weight loss drugs.

VICTOR: We received 81 completed responses in our survey of people in our community.

SAI: We found that 21% (17 out of 81) of our respondents had a family member with previous or current involvement with weight-loss drugs, and that only 19.8% (16 out of 81) of our respondents consumed more grilled chicken when visiting Chick-fil-A. This is consistent with previous findings, as GLP-1 drugs have become increasingly popular. Also, the fact that more teenagers consume high-fat, fried foods shows their vulnerability to poor eating habits (high-risk).

JAHI: Health consciousness had an impact on consumption as well, as the proportion of people who consumed more grilled chicken in the "high-interest" group was 11.4 percentage points higher than the proportion of people who consumed grilled chicken in the "low-

interest" category. There was an association between high interest and consumption of healthier, grilled chicken.

VICTOR: For our demand curves, price was on the x-axis, and demand, the variable on the y-axis, was measured by the number of responses at each price level. For example, if ten people said they would consider purchasing at $5.99, the data point would be (5.99, 10). We found our hypothesis was supported. The slope of the demand curve for the "low-interest" group was -2.7, and the slope of the demand curve for the "high-interest" group was -1.2. These translate to elasticity scores of 2.7 and 1.2, respectively. If we consider Andreyeva et al.'s study, demand for these sandwiches is much more elastic than both healthier and unhealthier grocery store items. Demand for food away from home is more elastic than "other food at home," as we observed.

KYLE: What this tells us is that those with high interest are less likely to make different food choices, even with price fluctuations. They are willing to pay more for healthier food. On the other hand, for the "low-interest" group, their consumption patterns will change with price, so they are more likely to select a comparatively low price for food they perceive as healthier but also having less flavor.

JAHI: Our survey has corroborated previous findings that consumption patterns change with price, but what can be done about this in the broader scheme of things?

SAI: The largest catalyst is definitely going to be government subsidies or taxation. As it stands, fried chicken is comparatively cheaper, but people may rethink buying it if the government imposes a tax on, say, menu items with more than 500 calories in one portion. Andreyeva's paper provides strong evidence for the efficacy of government intervention when it comes to altering consumption patterns of unhealthy food.

VICTOR: Right! And if the government grants a subsidy to marinated chicken breast (the type of chicken used in grilled chicken), this will allow the price to possibly decrease, or at least, to remain competitive. Subsidies and taxation play a large role in price elasticity.

KYLE: This issue's complexity is furthered by the fact new GLP-1 drugs,

What this tells us is that those with high interest are less likely to make different food choices, even with price fluctuations. They are willing to pay more for healthier food.

most notably Ozempic, also have the potential to change consumption patterns.

VICTOR: Yes, Ozempic is not only relevant in the context of A-list celebrities that use it to maintain their image. If one's appetite for high-calorie, fried foods is suppressed, then one's price sensitivity will fluctuate with the use of this drug also. We saw quite a significant presence of GLP-1 drugs in our sample, as one in five participants had previous or current familial involvement with GLP-1 drugs.

JAHI: What an insightful discussion we have had today! Any closing thoughts, guys?

SAI: Really just that the obesity epidemic is a multidimensional issue, but an economic analysis can really put things in perspective.

KYLE: Money is at the center of everything. We see this with government subsidies and price-elasticity analysis.

VICTOR: That concludes today's episode of *Food for Thought*. I'm your host, Victor Ma, and I'll see you all next week!

If one's appetite for high-calorie, fried foods is suppressed, then one's price sensitivity will fluctuate with the use of this drug also.

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Lett-uce Unpack: The Economics of Fast Food

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CITATION STYLE

Chicago Manual of Style, 17th Edition

ANDY: Welcome back, listeners, to *Lett-uce Unpack*, where we unpack your favorite foods and explore the economics hidden behind them.

SAM: We're your co-hosts, Sam and Andy. In today's episode, we're tracing the journey of fast food—from farms in Idaho to the Big Mac on your table. How does agriculture shape what's on your tray? Does AI make fast food...even faster? How much more is a burger going to cost? Let's dive into the fast-food industry's deep ties to farming, wages, and rising prices!

[*Intro Music*]

ANDY: All right, to start, let's invite Milton Friedman, an economist from the University of Chicago, and Joanna Deng, a small farmer from Iowa, to discuss the relationship between fast food and agricultural industries.

FRIEDMAN: Thanks for the introduction! I'm so excited to be a part of this podcast! The effects of the fast-food industry on American agriculture are fascinating and something truly deserving of attention.

JOANNA: I agree! I got an all-expenses paid trip here from Iowa, so no complaints!

ANDY: All right, before we jump into everything, I just want to set the scene: How did fast food get so popular?

FRIEDMAN: Well, in the 1950s, after World War II, the economy was in full swing: the United States experienced a period of rapid economic expansion fueled by industrialization, rising wages, and increased

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

consumer spending. Families had more disposable income to spend eating out, and suburbanization led to a greater demand for quick, convenient meals.[1] Additionally, with the construction of the Interstate Highway System commencing in 1956, the fast-food industry quickly became a staple of American life.[2] As people traveled longer distances, roadside restaurants grew in popularity.

ANDY: Sounds like demand was soaring! I don't want to call myself the economist here, but how did they manage the supply with that much demand?

FRIEDMAN: Great question! When new restaurants like McDonald's and Burger King needed more supply, they quickly became reliant on mechanized farming.

ANDY: So fast food revolutionized agriculture?

FRIEDMAN: Not entirely. It was more of an interdependent relationship than a cause-and-effect relationship. At the same time McDonald's was expanding, the agricultural industry itself was adopting electrical equipment, which rapidly increased the output of crops.[3] For example, when threshing corn manually, the output is only about 15 to 40 kilograms per unit of time.

Mechanized threshing, however, can yield significantly more, ranging from 1,500 to 2,000 kilograms within the same time frame.[4] Essentially, agricultural productivity skyrocketed, providing an abundance of crops on which the fast-food industry became heavily reliant. Fast-food companies reciprocated by pouring millions of dollars into agricultural suppliers, helping them expand production. Just look at today: McDonald's is one of the largest purchasers of beef in the world, at around 1.6 billion pounds per year.[5] On top of that, they also spend millions of dollars on potatoes, pork, and coffee; for example, McDonald's spent over $136 million on potatoes alone in 2018. As time went on, fast-food companies and their extensive purchasing power would give them indirect influence over the agricultural industry.

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[1] Emily, "Fast Food."
[2] Lacy, "Dwight D. Eisenhower and the Birth of the Interstate Highway System."
[3] "Changes In Agriculture, 1900 to 1950."
[4] Johns, "Industrialization of Agriculture."
[5] Brook, "McDonald's Ups the Ante with New Beef Antibiotics Policy."

ANDY: What kind of influence?

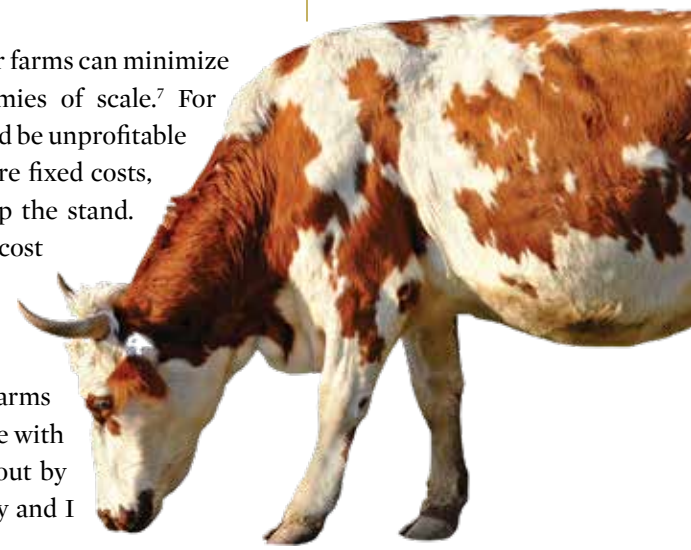
FRIEDMAN: As the fast-food industry grew, so did the demand for cheap and abundant meat. To meet this demand, large-scale farming operations, such as Concentrated Animal Feeding Operations (CAFOs), began to replace traditional small farms. These industrialized farms prioritized efficiency, housing thousands of animals in tightly packed spaces to maximize production while minimizing costs. With faster slaughtering processes and less land required per animal, CAFOs became the backbone of mass meat production. However, feeding such large numbers of livestock needed vast amounts of crops—so much so that today, over 50% of U.S. grain is used solely for animal feed.[6] As a result, fast-food companies didn't just shape American eating habits; they also transformed the agricultural industry, dictating how food was grown and produced on a national scale.

ANDY: Fascinating! Joanna, you're one of the last independent farmers in the United States. Does that have anything to do with these CAFOs?

JOANNA: Totally! The growth of CAFOs didn't leave much space for small farmers to compete, especially as large industrial farms took over the market.

McDonald's is one of the largest purchasers of beef in the world, at around 1.6 billion pounds per year.

FRIEDMAN: That's right. It's because larger farms can minimize costs better than smaller farms via economies of scale.[7] For example, if you have a lemonade stand, it would be unprofitable to make only one cup. That's because there are fixed costs, such as buying a bag of lemons or setting up the stand. However, if you sell 100 cups, the average cost decreases because the fixed costs are spread over a larger number of units.



JOANNA: Right. When small family farms could not scale up to meet demand or compete with the low prices of CAFOs, they were bought out by corporations. In the past few years, my family and I

[6] "U.S. Could Feed 800 Million People with Grain That Livestock Eat, Cornell Ecologist Advises Animal Scientists."

[7] McGreal, "How America's Food Giants Swallowed the Family Farms."

have mainly been growing corn and soybeans and selling them to CAFOs. It's the only way for us to make money with the bit of land we have left.

FRIEDMAN: She's right. Sadly, without the ability to compete, many small farms died out, paving the way for large conglomerates to monopolize the meat industry. Today, around 85% of beef production and almost 70% of pork production is concentrated within just four companies.[8]

ANDY: So fast food didn't just change how we eat; it also changed how our food was produced in the first place!

FRIEDMAN: Exactly. Not only that, each year, the government spends $30 billion to subsidize the soy and corn that makes animal feed for these CAFOs. That's how companies like McDonald's and Burger King can make profits even when selling food at reduced prices.[9]

ANDY: Wow, so the fast-food industry completely reinvented American agriculture to meet its need to sell cheap and quick meals. Thank you, Milton Friedman and Joanna Deng, for joining us and giving us a closer insight into both the agricultural and fast-food industries.

FRIEDMAN: Of course. It's been my pleasure!

JOANNA: Thank you for having me!

SAM: So, we've seen how the agricultural industry has been shaped by fast food. Now, let's turn our attention to the workers within the industry. To understand the employees' side of this story, let's bring in Adam Smith, the Enlightenment economist most commonly known as the "Father of Capitalism!"

ADAM SMITH: Thanks for having me on the podcast!

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[8] MacDonald, "Concentration in U.S. Meatpacking Industry and How It Affects Competition and Cattle Prices."
[9] Edwards, "Cutting Federal Farm Subsidies."

SAM: Of course, Mr. Smith! Now, one of the first questions I had when writing this episode was the issue of worker shortages. Through my research, I've found that since COVID-19, fast-food locations have struggled to find enough workers.

ADAM SMITH: Yeah. Ever since the COVID-19 pandemic, and even before, fast-food chains have been struggling with finding enough workers—in fact, the employee turnover rate of the fast-food industry is 150% per year.[10] A combination of low wages, limited career-advancement opportunities, and demanding work conditions exacerbate this phenomenon.

SAM: Wow, that is fascinating! Is there anything being done to alleviate this problem?

ADAM SMITH: Of course. In fact, just recently, California enacted a new law mandating that the fast-food minimum wage be raised to $20 per hour.[11] However, the effects of such a measure remain in dispute. Some reports found that the wage increase forced restaurants to cut hundreds of jobs. A few restaurants even reduced their hours by closing during slower parts of the day or switching to menu items that take less time to make.[12] At the same time, other studies have concluded that raising the minimum wage actually increased the number of people employed.[13]

ANDY: Given that mixed impact, it seems the industry is ripe for disruption. Shifting gears, what's your take on automation? Could that be the key to addressing these labor challenges?

ADAM SMITH: I like what you're thinking. As of now, the fast-food industry has already been "automating" for multiple decades, with significant processes in many fast-food chains being managed by artificial intelligence. For example, Chipotle recently introduced robot prototypes that manufacture guacamole, reducing preparation time

In fact, the employee turnover rate of the fast-food industry is 150% per year.

[10] Bebe, "Employee Turnover Intention in the U.S. Fast Food Industry."
[11] "Minimum Wage."
[12] Haddon, "California Restaurants Cut Jobs as Fast-Food Wages Set to Rise."
[13] Wiltshire, "Minimum Wage Effects and Monopsony Expectations."

by 50%. Domino's also announced an "automated pizza prep device" that automates the process of creating dough.[14] This automation trend is widespread, and with rapid AI advancements, the future holds significant potential.

SAM: Right, but more specifically, what does the future hold for automation in the fast-food industry?

ADAM SMITH: There are three main possibilities: First, robots could automate manual tasks such as cooking or packing, resulting in greater efficiency and consistency. Second, AI could be used to make personalized nutritional suggestions for the consumer, improving customers' health.

Finally, AI could enhance customer interactions and customer satisfaction.[15] All in all, automation, in my opinion, would be a massive boon to the fast-food industry.

ANDY: We appreciate your time today, Dr. Smith. It was a pleasure.

ADAM SMITH: Of course! Thank you for having me on your podcast!

ANDY: As Dr. Smith has hinted, the fast-food industry changes have had a profound impact on consumers.

SAM: Exactly. Decisions by fast-food giants—whether it's raising wages, dealing with inflation, or adjusting price models—are having huge impacts on consumers. To help us break this down, we're excited to have Dr. John Maynard Keynes, an economics expert, here to share his insights. Dr. Keynes, welcome!

Over the past decade, fast food has transitioned from something affordable to something significantly more expensive; in fact, fast-food menu prices jumped roughly 60% between 2014 and 2024, which was nearly double the inflation rate during that same time.

DR. KEYNES: Thanks, Sam. I'm happy to join this conversation.

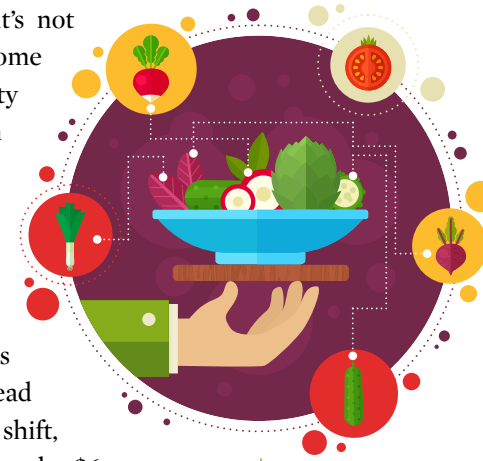
ANDY: Dr. Keynes, could you start by explaining the major shifts in the fast-food industry and how they're impacting consumers?

DR. KEYNES: Absolutely. Over the past decade, fast food has transitioned from something affordable to something significantly more expensive; in fact, fast-food menu prices jumped roughly 60%

[14] Rhone, "U.S. Fast-Food Chains Add Automation to Boost Speed."
[15] Sahota, "AI In The Fast Lane."

between 2014 and 2024, which was nearly double the inflation rate during that same time.[16]

SAM: Well, I guess my Dollar Menu days are officially over.



DR. KEYNES: Yup, but at the same time, it's not necessarily that bad. Historically, low-income families have relied on fast food for its affordability and convenience, creating apparent health implications. Today, over 71% of Americans are overweight or obese, primarily due to the widespread consumption of fast food and processed foods, making diet-related illnesses an increasing economic burden.[17] However, with prices increasing, many lower-income Americans are turning away from such options and instead exploring healthier alternatives. Recognizing this shift, the U.S. Department of Agriculture invested nearly $6 million last year to improve access to more nutritious food options for underserved communities.[18]

ANDY: Thanks for breaking that down, Dr. Keynes. So, while rising prices have made fast food less accessible, they seem to have also pushed consumers toward healthier choices.

SAM: We've explored the economic and health challenges tied to fast food, and now it's time to focus on solutions. What can policymakers do to help shape the future of the fast-food industry? To answer this, let's invite California Representative Mark DeSaulnier. Rep. DeSaulnier, thank you for being here.

REP. DESAULNIER: Thanks for having me, Andy and Sam.

SAM: Let's start with labor policies. California recently implemented a $20 minimum wage for fast-food workers. How has this affected the industry and its workers?

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[16] Lewis and Stacker, "Fast Food Inflation."
[17] Fuhrman, "The Hidden Dangers of Fast and Processed Food."
[18] "USDA and Reinvestment Fund Invest Nearly $6 Million to Increase Equitable Access to Healthy Foods across Country."

DRIVE THRU

REP. DESAULNIER: This wage increase, which took effect in 2024, is a big step toward ensuring fair pay for fast-food workers. Many of these employees have historically struggled with low wages and job instability, so this law aims to create better financial security for them. Early studies indicate that workers are seeing substantial income gains, which could have positive ripple effects on their quality of life and economic mobility.[19]

ANDY: That's great to hear. Beyond wages, what about food accessibility? As fast-food prices rise, how can policymakers ensure that healthier alternatives are available to lower-income communities?

REP. DESAULNIER: The U.S. Department of Agriculture has already invested millions to improve food access in underserved areas, but we need broader policies to make healthier options more affordable and widely available.[20] This can be done through tax incentives for grocery stores and fresh-food markets in food deserts, subsidies for local farmers' markets, and programs that make fresh produce more accessible through food-assistance programs.[21] But beyond affordability and accessibility, another significant barrier is information itself. Many people struggle to understand what healthy eating really means, and nutrition misinformation is everywhere. With conflicting advice on what's "good" or "bad" to eat, it's easy to feel overwhelmed and discouraged. Studies show that 63% of people believe they have to sacrifice enjoyment to eat healthy, which often pushes them back toward processed and fast-food options simply because it feels easier.[22] Lowering costs through subsidies and making healthy food more accessible is only part of the equation. The final push must be education—empowering people to understand nutrition in a practical and sustainable way. This is where community-based programs and interactive education play a crucial role. Institutions

[19] Fox-Hodess, "New Study Analyzes Impact of California's $20 Minimum Wage for Fast Food Workers."
[20] "USDA Invests $46M in Efforts to Address Food and Nutrition Security."
[21] "Tax Credits for Grocery Stores in Food Deserts."
[22] Farkaly, "1 in 3 Americans Say They Were Never Educated on Healthy Eating Habits."

like the Academy of Natural Sciences of Drexel University, Marbles Kids Museum in Raleigh, and the Saint Louis Science Center are already doing great work in teaching kids about food, nutrition, and sustainability in engaging ways. Expanding funding for these programs could help shape a new generation of healthier eaters.

ANDY: That makes so much sense; shaping the future of the fast-food industry isn't just about one policy—it's about addressing wages, food accessibility, and consumer education all at once.

SAM: Thank you, Rep. DeSaulnier, for shedding light on these crucial issues. As we move forward, we must continue working toward solutions—expanding access to nutritious food, supporting fair wages, and empowering consumers with the correct information to make healthier choices.

REP. DESAULNIER: Thank you for having me. It's been a valuable discussion.

ANDY: It has been a pleasure to have you on the podcast.

SAM: Well, that's it for today's episode of *Lett-uce Unpack*. We're your hosts, Sam and Andy. Andy: Next week, we'll be unpacking the hidden economics of the fine-dining industry, so stay tuned, and see you guys then!

Studies show that 63% of people believe they have to sacrifice enjoyment to eat healthy, which often pushes them back toward processed and fast-food options simply because it feels easier.

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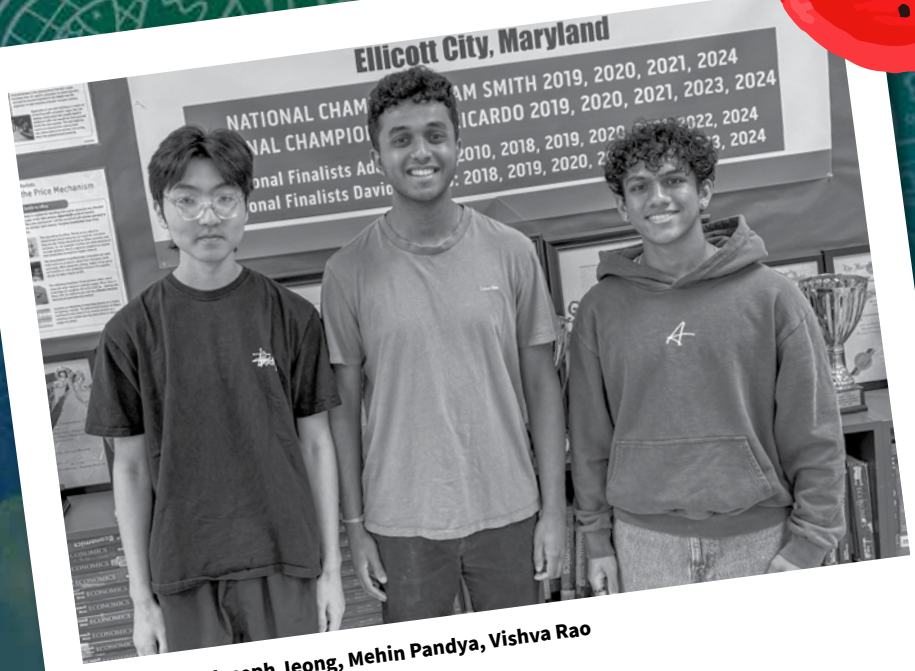

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Feeding the World: Globalization's Bite on U.S. Agriculture

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CITATION STYLE

MLA 9th Edition

JOSEPH: Welcome to *The Market Mindset*, the podcast where we explore economic forces shaping the world. I'm Joseph Jeong and, as always, I am joined by my co-hosts Vishva Rao and Mehin Pandya. Today, we're diving deeper into the backbone of the U.S. economy, farmers, and the agricultural industry, tackling a question that's as close to home as your dinner table: How has globalization transformed the American agricultural economy?

VISHVA: Let's begin with a thought experiment. Picture your favorite meal. There are nearly infinite choices: a juicy burger, a warm plate of pasta, or maybe even a platter of freshly made sushi rolls. Now, ask yourself: Where did those ingredients come from? The avocado in your sushi roll? There's almost a 2-in-5 chance it was grown by our southern neighbors in Mexico. The rice? Odds are, it traveled over 8,000 miles from the paddy fields of Thailand. And that salmon? It might've swum in Brazilian waters before landing on your plate.

MEHIN: Surprised? You're not alone. The U.S. imports 90% of its avocados (Weber), 80% of its seafood (Davis), and 25% of its rice from abroad (Childs). Even a dish as simple as sushi rolls illustrates the interlinked nature of global economies. Even an economy as large as the United States is still dependent on international trade for various important foods. But how did this globalization come to be?

JOSEPH: That's the billion-dollar question. Over the next 30 minutes, we'll dig into the history, policies, and hidden costs of globalization's grip on U.S. agriculture.

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

Let's rewind to the early 19th century. The U.S. was an agrarian titan. At that time, as much as 80% of the workforce was engaged in agriculture. Farming wasn't just a way of life; it was the cornerstone of the U.S. economy. By 1860, agricultural products still accounted for roughly 82% of U.S. exports, reflecting the sector's vital role in international trade (Outline of the U.S. Economy).

VISHVA: Over time, however, the growth of industrialization spurred migration and caused significant demographic shifts. Rural citizens continuously migrated to flourishing urban centers in search of new, lucrative opportunities (Chu et al.). Labor began moving from traditional farming to manufacturing and later to the service industries. These shifts were spawned by what Adam Smith famously termed the "invisible hand": market forces driving efficiency and specialization. The shift in labor would be the first of many changes to come.

MEHIN: Globalization further accelerated these trends. As the world became increasingly interconnected, the U.S. started to both import and export agricultural goods on a much larger scale. For example, U.S. Department of Agriculture reports indicate that from 1915 to 1987, U.S. agricultural exports increased by 400% (Demitri et al.).

JOSEPH: These early shifts were not merely on the supply side, but also due to changing consumer tastes. Economic theories such as Bennett's Law can help explain some of these shifts. As a direct result of the Industrial Revolution, per-capita income (in 2011 USD) within the U.S. rose from about $7,000 in the late 19th century to above $50,000 in the 2000s, resulting in a higher domestic demand for nutritional produce (Mitchell). With domestic producers farming primarily calorically dense foods such as corn and soybeans, consumers were forced to look elsewhere to satisfy their needs for healthier options. As the doors for new cuisines and ingredients opened to the American market, consumer tastes began to evolve, further increasing the need for

global trade. In this way, the seeds of modern global agriculture were planted—laying the groundwork for the economic shifts we explore next.

VISHVA: One of globalization's most apparent changes is the reduction in the number of small farms and the emergence of agribusiness corporations. To contextualize: the number of U.S. farms halved from about 5 million in 1950 to roughly 1.9 million in 1997; in the same span, the average farm expanded from about 100 acres to well over 400 (Johns Hopkins Center). This consolidation wasn't an accident. Larger farms achieved it via economies of scale, reducing per-unit production costs, increasing efficiencies, and stimulating much-needed growth. This increased efficiency helped many survive in the midst of new global competition that was occurring, but the downside was the reduction in produce variety. Taking advantage of economies of scale meant mass-producing the same crop, and from 1900 to the early 2000s the number of distinct commodities produced per farm has declined from 5 to 1.3 (Mitchell).

As the world became increasingly interconnected, the U.S. started to both import and export agricultural goods on a much larger scale. For example, U.S. Department of Agriculture reports indicate that from 1915 to 1987, U.S. agricultural exports increased by 400%.

MEHIN: The new changes in the agricultural industry are vital for understanding some of the longer-term implications in today's global economy. While large-scale agribusiness has driven efficiency, it has also introduced new vulnerabilities and dependencies on global producers for foods no longer grown in the U.S. For example, when 90% of avocados consumed in the U.S. are imported, a figure that has jumped from 40% in the early 2000s, domestic markets become increasingly vulnerable to global price fluctuations and supply chain disruptions (Weber). Such extensive reliance on international suppliers meant that local markets were now susceptible to events occurring on the other side of the globe—a drought in India or a political crisis in Chile can trickle into U.S. supermarkets almost instantaneously.

MEHIN: In essence, the evolution of U.S. agriculture through globalization was not merely a story of numbers and efficiency; it was a narrative of societal change, technological progress, and shifting cultural values. These shifts redefined the American agricultural landscape and set the stage for the complex policy debates to come.

JOSEPH: Though the globalization of agricultural trade is not inherently good or bad, it has introduced a series of challenges for American producers. As a result, there have been numerous policy debates surrounding the topic, which have had various implications for not only the agricultural sectors but also the economy as a whole.

VISHVA: While globalization has opened up unprecedented opportunities for U.S. agriculture, it has also exposed the industry to numerous challenges. Agricultural goods are often supplied in nearly perfectly competitive markets as their homogenous products and the large number of farmers eliminates any single firm's market power. As a result, they have faced intense foreign competition. With global supply and demand dictating prices, domestic producers have often been prone to price fluctuations that can result in surplus production and falling, sometimes even negative, profits.

Taking advantage of economies of scale meant mass-producing the same crop, and from 1900 to the early 2000s the number of distinct commodities produced per farm has declined from 5 to 1.3.

MEHIN: The imported foods have taken over local markets to the extent that imports grew from 40% to as much as 90% (Weber), forcing domestic producers into unstable prices and intensified market competition. This pressure isn't just applicable to one crop or region; it's a systemic challenge that affects America's entire agricultural industry.

JOSEPH: The U.S. government developed policies to address market competition issues which threatened to destabilize American agricultural operations. During the early policy phase, the United States tried to defend its farmers by using the Smoot-Hawley Tariff of 1930 as a means to restrict foreign marketplace entry (Tariff Act of 1930). When the United States implemented these measures, many nations responded with retaliatory trade tariffs that ignited a global commercial conflict leading to over 60% European market value reduction of U.S. imports and exports (Smoot-Hawley Tariff Act).

MEHIN: In addition to facing foreign competition, there were significant internal problems hindering growth. With the highly inelastic demand for agricultural products in wealthier countries, a technological advancement or greater crop yields often meant farmers were forced to sell at dramatically cheaper prices.

JOSEPH: Precisely. We saw this problem confront U.S. policymakers not even a few years following the Smoot Hawley Act. They responded with the Agricultural Adjustment Act of 1933. With an increase in crop yields, many farmers were burdened by the lower prices, which was

especially troublesome in the midst of the Great Depression. In response, policy makers subsidized farmers to reduce their supply of crops (Metych). Though short-lived, the AAA reflected a rising sentiment among the American public to protect farmers. It popularized the discussion for parity pricing while promoting means such as government subsidies to achieve those goals.

VISHVA: This period of protectionism revealed the limits of isolationist policies in a rapidly globalizing world. The lesson became clear during that period: supporting domestic industries mattered but trying to completely disconnect from global businesses proved unattainable and counterproductive. The United States gradually modified its stance by endorsing trade liberalization to achieve complete economic integration in the international market.

MEHIN: After World War II, the U.S. implemented this new economic doctrine through three free trade initiatives, starting with the General Agreement on Tariffs and Trade (which gave rise to the World Trade Organization) and moving to the North American Free Trade Agreement, which further evolved into the United States-Mexico-Canada Agreement. Through these agreements, participants eliminated obstacles to trade so that American agricultural producers gained ready access to international buyers who were exempt from both border limits and monetary constraints. Countries achieved increased consumption by applying David Ricardo's concept of comparative advantage thus demonstrating free trade's mutual advantages.

JOSEPH: Yet, even this liberalization came with significant challenges of its own. In modern times, the U.S.-China trade war is a prime example. The political tension spurred retaliatory tariffs from both sides leading to major drops in exports. Farmers in the U.S. were hit hard by the sudden loss of a key market. Though, even beyond retaliatory tensions, dynamic international trade patterns have

also been attributed to industry struggles, as changing comparative advantage and resource distribution has eliminated or reduced many industries, not excepting agriculture. Both situations shed light on the inherent trade-offs between embracing global trade and protecting domestic economic stability.

VISHVA: Reflected through historical and present actions, U.S. agricultural policy significantly centers around adaptation. Ensuring growth and funding national defense have become the core concerns for policymakers who have repeatedly modified their strategies through balancing foreign business challenges with domestic needs. The agricultural sector of the United States defines itself through its continuous encounter between domestic struggles and international opportunities, which affects both the individual farmer's life conditions and national economic stability.

VISHVA: Although historical trade policies such as the AAA and the Smoot-Hawley Act were created under different circumstances, they still provide keen insights into the modern agricultural industry, and what the future of agriculture in America will look like. With strong sentiments towards protecting the domestic agricultural sector even in the midst of liberalizing trade, the current U.S. spending on agricultural subsidies of $11 billion will likely not cease any time soon (USA Facts).

MEHIN: In addition, several technological trends have the potential to bring massive changes to the U.S. agricultural industry. Advancements like AI-driven precision agriculture and vertical farming are poised to streamline production methods. These methods don't only boost yields but can also reduce the negative externality of environmental degradation, which is prevalent in the agricultural industry.

JOSEPH: Another emerging movement is the growing interest in urban agriculture and local food systems. Projects like rooftop farms and community gardens are gaining momentum in many cities around the country. These initiatives reduce the dependency on volatile supply chains and ensure local food security. Urban agriculture, paired with modern techniques, could play a pivotal role in the mitigation of

susceptibilities inherent in our current global trade networks.

MEHIN: Let's bring our discussion full circle. Today, we've explored how globalization opened up the floodgates for dramatic changes that have reshaped U.S. agriculture. From the consolidation of farmlands to international interdependence, we've seen that globalization has unlocked tremendous efficiencies and opportunities while also increasing competition and harming parts of the industry, as well.

VISHVA: Our analysis also highlights that modern agriculture is at a crossroads. Current policy has aimed to balance the needs of domestic producers with those of the nation's consumers and as a result has proven to be very dynamic. We've seen attempts to subsidize domestic producers in order to give them a competitive edge, but we've also seen the U.S. look to integrate itself further into the international economy.

JOSEPH: So, we'll leave you with this: Next time you bite into a taco or sushi roll, ask yourself: Who really feeds America? Is it our farmers? Mexico? Thailand? Or the unseen hand of globalization? Thanks for tuning in. Until next time, stay hungry for knowledge.

Urban agriculture, paired with modern techniques, could play a pivotal role in the mitigation of susceptibilities inherent in our current global trade networks.

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Left to right: Anthony Keating (advisor), Michael Mittenzwei, Marcus Saldua, Felix Puig Seppalainen, Aiden Ahn, Spencer Neissen, Tyler Barksdale

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Chipotle and the Fast-Casual Revolution: How Food Economics Reshapes the U.S. Economy

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CITATION STYLE

MLA 9th Edition

FELIX: Welcome back to the *Economics of Food* podcast, where we talk to experts in the food industry as well as economists to develop a holistic understanding of the crossroads between the two fields. I'm your host, Felix Puig Seppalainen, and today I'm accompanied by Aiden Ahn, an economist who works at the Federal Reserve but has spent years in various C-level positions in different food companies. As an economist who has managed large restaurant corporations, Aiden will be offering powerful insights into this field, as well as the growth of a certain company we wish to discuss today.

AIDEN: Hey, everyone! Thank you for the flattering introduction; I am beyond excited to share what I have to offer and hopefully demystify the economics side of this field. I think that today, we could examine the economics of food by using the case study of the company Chipotle, whose business model I helped fashion when I was Chief Financial Officer, years ago.

Introduction: Fast Food's Evolution and Its Economic Footprint

FELIX: Remember when fast food meant dollar menus and drive-thrus? Today, Chipotle's $10.00 bowls dominate. What does this shift say about the U.S. economy?

AIDEN: I think it's a reflection of the impact inflation has had on households and consumers, especially in the past five years post-COVID. For starters, let's look at how McDonald's prices have changed over the years. From 2019 to 2024, their prices have

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.

increased by 40%, which they say is lower than or around the industry average. The Big Mac Meal itself increased by 27% from $7.29 to $9.29, which is lower than the overall restaurant average (McDonald's Corporate). But that's still a lot!

FELIX: Wow, I might have to cut fast food if I'm not getting the right bang for my buck!

AIDEN: Exactly! Those two statistics are very important. Chipotle's reputation as a "clean food" company has justified its premium prices. That makes consumers feel good about purchasing and eating their food, especially within the growing gym culture in the United States (Bradley). In purely economic terms, Chipotle is a normal good; if an individual has higher income, they'll buy more Chipotle. Conversely, McDonald's has often been viewed as an inferior good. Taste preferences aside, the consumer knows the ingredients are lower quality and is willing to purchase McDonald's at lower prices because of it (Simon-Kucher). Now that Chipotle and McDonald's will cost a similar amount of each consumer's income, they're more likely to purchase Chipotle, especially if you don't like Big Macs, since you'd have felt the increase in prices even more in the past five years. There have been similar pricing observations across the fast-food industry. Not to say that Chipotle hasn't faced its own scrutiny for raising prices, but the brand reputation Chipotle has built for itself will continue to play in its favor (Dixit).

Chipotle's Model: A Microcosm of Modern Labor Economics

FELIX: Chipotle pays around $17 an hour (Chipotle). How does that affect the economy?

AIDEN: Well, I think the best way to look at it is by starting on a small scale. When compared to the national average of $13 an hour, Chipotle's $17 can attract—and retain—skilled workers in a competitive labor market (Harvard). In doing so, Chipotle is making a trade-off; while paying their employees more equates to higher input-labor costs, and eventually higher costs to the consumer, the better employees

attracted by higher wages have led to Chipotle gaining the positive reputation that it currently has.

FELIX: Wow, that's pretty interesting! I'm reading that over 73% of Chipotle employees are Gen Z (Chipotle). Do you think that's because of the high starting wages?

AIDEN: That's a large part of it. I'd say the other biggest reason is that Chipotle offers a ton of benefits directed at Gen Z employees, like their Student Loan Retirement Match program (Chipotle). Around 13 million students currently have student loan debt (Hanson), so by having benefits like this, on top of their comparatively high wages, Chipotle sets itself up to have high numbers of Gen Z workers.

FELIX: What would you say is the economic impact of having so many Gen Z employees?

AIDEN: That would probably boost employees' disposable income, which is crucial for an economy to function. If people don't have surplus money, they can't contribute back to the market. Gen Z is one of the largest generations in history—25% of the global population—and they are starting to spend like it. By 2030, their spending power is predicted to grow to $12 trillion worldwide (NielsenIQ), and I'd argue that this number is pushed higher by companies that start by paying better than average and offering benefits to their employees.

Federal Policy and International Trade: Economic Impacts on Food Businesses

FELIX: So, Aiden, I'm curious now that we've examined the business model of Chipotle being a reflection of the greater economy. I want to shift gears and examine how the greater economy and federal policy affect businesses such as Chipotle.

AIDEN: As with any business, the economy is incredibly important for determining the success and failure of Chipotle. If we were to enter a recession, demand would slump and thus heavily eat into Chipotle's profits; this would mean layoffs and a vicious cycle for the firm (Claessens and Kose). However, since we have analyzed labor economics, I'd like to tackle the latter aspect of that question of yours. So, Felix, which international policy has been in the news recently?

Gen Z is one of the largest generations in history—25% of the global population—and they are starting to spend like it. By 2030, their spending power is predicted to grow to $12 trillion worldwide.

FELIX: Tariffs?

AIDEN: That's right! Chipotle sources less than half its avocados from Mexico despite the United States importing 90% from Mexico (Lucas). In addition, Chipotle has signaled for months now that they intend to continue to divest from foreign imports (Patton). This means that Chipotle insulates itself from possible tariffs.

FELIX: I recall that Chipotle had a gross margin of 13.56% last quarter (Macrotrends), so even a slight rise in price due to tariffs would immediately be passed onto consumers, right?

AIDEN: Absolutely, and this is why Chipotle's business model includes sourcing mainly locally. While it is true that an increase in avocado prices due to tariffs would impact consumer prices, current CFO Adam Rymer said in their most recent earnings call that consumer prices would only rise by 0.6% on average, with tariffs (Lucas).

FELIX: Wow, that's almost nothing. It's clear that, unlike some firms which have a primary set of suppliers, Chipotle, and many companies following a similar business model, are preparing themselves for broader economic changes by tying themselves more to local rather than national producers and economies.

AIDEN: Precisely! Now that technology continues to streamline supply chains and production (Tamsons)—Chipotle, for example, recently invested $100 million to create an AI tool to help make supply chains more efficient (Miller)—I expect more firms to buy more locally produced goods, as after all, if economies of scale are achieved even with smaller firms, then you might as well source from nearby.

Fast-Casual vs. Fast Food: A Battle Reshaping Employment

FELIX: Is Chipotle stealing workers from McDonald's?

AIDEN: There's evidence to suggest that. McDonald's, as you mentioned, is the best example of the current state of fast food. In the

fourth quarter of 2024, McDonald's sales dropped 1.4% domestically. Instead of their target of $6.44 billion in sales that year, they received their greatest drop in revenue since the pandemic (Lucas).

FELIX: That's quite fascinating. I did hear news about McDonald's throughout last year with their E. coli outbreak, boycott, increased menu prices, and inflation. But how does this relate to Chipotle and employment (Lucas)?

AIDEN: Well, since fast-food restaurants are increasing their prices and inflation is having an even greater effect, simple orders from these restaurants are starting to reach $10 and many customers are realizing that they can get higher quality, and greater quantity, of food for around the same price. Hence, they gravitate towards fast-casual chains such as Chipotle (Kelso), thus increasing their sales, as seen in the third quarter of last year when same-store sales rose 6% (Canham-Clyde). To meet the newly increasing demand for fast-casual, Chipotle is seeking to hire thousands of new employees in 2025 and has launched an employment campaign (Reuters). Meanwhile, McDonald's laid off hundreds of workers in different franchises nationally to make ends meet.

FELIX: Huh, it seems to me that these fast-food restaurants need to step up their game and learn from their casual competitors.

AIDEN: That indeed may be the case! As fast food comes to a decline, fast casual has the opportunity to step up, partly due to growing price inflation. Because of fast-casual's "made fresh in front of you" approach, it requires more labor to appease the increasing fan base (Kelso). Thus, fast food could potentially fall at the same speed as fast casual's growth and, if so, we will witness the emergence of new chains and job opportunities (Chemtob). We are already seeing this happen, as many brands threaten Chipotle. There's one a few blocks away from this studio, correct?

FELIX: That's correct.

AIDEN: And do you mind telling the audience the restaurants near that Chipotle?

FELIX: Well, there's a Cava and an &Pizza next to it. And, a block away, there's a Qdoba and a Five Guys.

AIDEN: And what do these restaurants have in common?

FELIX: Apart from how delicious they are, they make their food fresh for the customer to see and are all...fast-casual! But don't competitors usually open near each other?

AIDEN: Yes, that is true, but not typically at this rate. You wouldn't see more than three fast-food locations from competing companies within a two-block radius of each other. However, one can see the high rise in demand for fast-casual restaurants just from their abundance. Competitors heavily rely on game theory when choosing locations; they strategically place them not too far from one another to garner sales from different areas of a city. Fast-casual restaurants are taking this to the extreme, placing their restaurants directly next to the competitors (Cornell Blogs).

This approach to competition stresses each company, causing them to maximize revenue efforts while appealing to a large demographic.

FELIX: Back in my day, fast food was the go-to job for teenagers, but it seems to me that fast-casual might become king!

Digital Demand: How Apps and Gen Z Drive Growth

FELIX: Chipotle's app drives 40% of sales (Chipotle)—is this the future?

AIDEN: Yes, it is. In fact, it is estimated that delivery apps add about $30 billion to the U.S. Gross Domestic Product annually (Khan). Of course, this number is expected to rise even further in the 2020s, potentially surpassing $400 billion this year (Statista). We have already seen the rise of apps such as Uber Eats and Doordash which have flat-

out transformed the way food is delivered. What was once considered a luxury, convenient, quality food, is now an expectation—people are working more and have less time, so this sudden explosion of growth in the fast-casual industry should come as no surprise.

Companies like Chipotle understand this expectation, which explains their recent expansion of digital infrastructure to streamline online operations (Samuely). Simply, it has worked. Their success is why almost every other fast-food corporation is now scrambling to catch up. Overall, this represents a broader transformation in the United States economy, one which has reshaped millions of jobs, especially for our generation, Gen Z, just as we are entering the workforce.

FELIX: Spending a lot of time on social media, I noticed that Gen Z spends more on food delivery than older generations—nowadays, about two-thirds of consumers have utilized food delivery apps (Koppes). Is this a trend that will continue?

AIDEN: Look at how most of us were raised—growing up in a world with easy access to technology and lifestyles that value convenience and speed. Because of this, I believe this trend will continue. Honestly, for many of the services that Gen Z relies on, if they're a little more expensive but offer double the efficiency, I think 80% of us would make that trade-off. What do you think, Felix?

FELIX: Yeah, that's very true. If I were to ask other members of Gen Z, they'd definitely agree. It'll also be interesting to watch this generation grow into adulthood, gain more purchasing power, and have a larger role in the economy. Will they exacerbate current trends, or will things change?

AIDEN: I guess only time will tell.

The Future: Fast-Casual's Role in a Changing Economy

FELIX: Will robots make burritos?

AIDEN: Honestly, it's pretty likely. The introduction of our mechanical friends into the kitchen can have some huge implications for the fast-casual dining industry.

Competitors heavily rely on game theory when choosing locations; they strategically place them not too far from one another to garner sales from different areas of a city. Fast-casual restaurants are taking this to the extreme, placing their restaurants directly next to the competitors.

FELIX: Huge implications? Do you mean faster service?

AIDEN: Exactly. But also cost savings. Automated kitchens are most susceptible to labor displacement, which would cut costs significantly (Manyika et al.). For example, Chipotle's robotic chip maker, "Chippy," has recently been implemented along with their new "Autocado," which can process avocados in seconds (Chipotle).

FELIX: That sounds like a win for the companies! But what about the workers' wages?

AIDEN: Now, this is the real dilemma. Automation in the workforce will widen the skills ceiling (Manyika et al.). This means that fewer entry-level jobs will be needed, but more demand for tech-savvy employees will increase in the fast-casual market. Some fast-casual spots are shifting first-time workers to customer service roles instead of kitchen work because the food service is being maintained primarily by automated facilities.

FELIX: So, automation changes who gets hired and for what jobs. But is this just happening in the U.S.?

AIDEN: It's definitely an international change. When America's fast-casual business models start to expand to other countries that depend more on labor, this could cause a crisis for low-income communities as there are fewer opportunities for manual work than there are people seeking labor employment.

FELIX: What about outside of the workforce, though?

AIDEN: Good question. As Chipotle invests in automated-systems manufacturers overseas (Reuters), economies worldwide may shift to prioritize high-tech industries over traditional labor. This won't just widen the skills gap in the workforce—it could also deepen technological inequalities between nations.

In Closing

FELIX: Well, Aiden, thanks for sharing your input on Chipotle, fast-casual, and the food economy. This discussion has been incredibly insightful for me, and I hope that it has been the same for you!

AIDEN: It truly has been! Though I am unsure exactly how fast-casual will develop in the future, one truth remains: food is a fundamental human need, and there will always be demand for it, and where this demand goes dominates the industry.

FELIX: It's truly so. I want to thank our listeners to this podcast, and want to leave them with a final message following the theme of this episode: fast-casual isn't just food, it's a lens into wage policy, climate resilience, and America's consumer identity. As you follow its continual rise in America and abroad, pay attention and you'll see how people think, both with their wallets and their stomachs.

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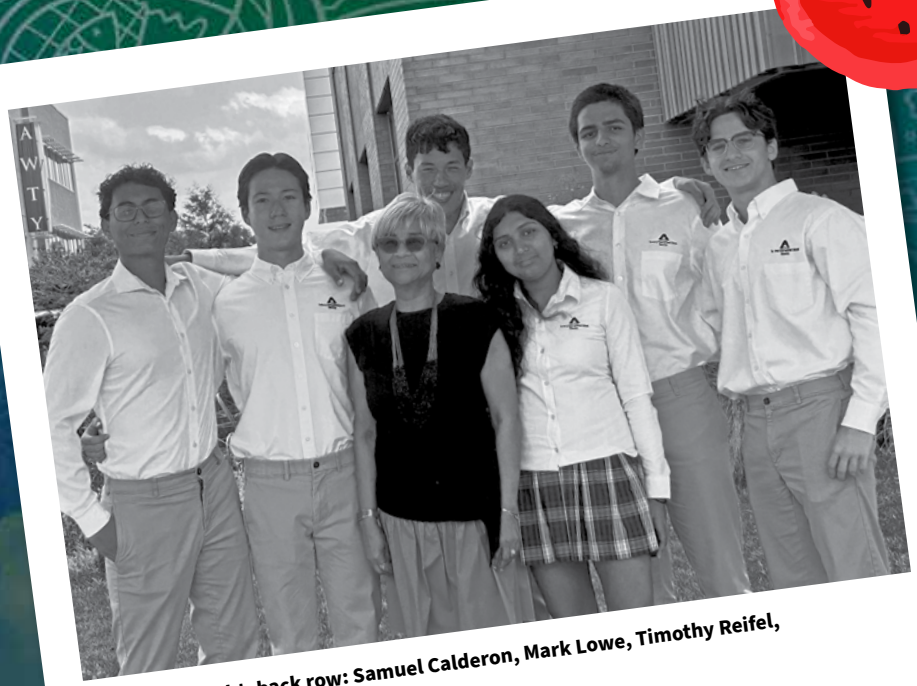

From left to right, back row: Samuel Calderon, Mark Lowe, Timothy Reifel, Juan Gallo, Bernardo Amare
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The Awty International School

Houston, TX

Food Deserts in Houston

HOST: Welcome to *Space City Economics*, where today we're addressing a critical issue right here in our community: food deserts in Houston. I'm your host, and joining me today are Dr. Alicia Torres, a public health expert from the University of Houston; economist Dr. Mark Robinson; and Jessica Lee, a community leader from Houston's Third Ward. Today, we will be exploring the health impacts of food deserts, analyzing current policies that marginalize individuals, and proposing sustainable solutions for an equitable and healthy food supply.

HOST: Dr. Torres, could you start by defining food deserts and explaining their implications for public health?

DR. TORRES: Certainly. Food deserts are areas lacking sufficient access to affordable, nutritious food. Surprisingly, this issue is common even in populated urban areas where residents still lack access to grocery stores with healthy options. Instead, they may have numerous fast-food outlets and dollar stores, which are cheaper but lack the healthy, fresh food necessary for a balanced diet. For example, here in Houston, more than half a million people live in areas classified as food deserts.[1] This limited access correlates strongly with increased obesity and related chronic conditions like diabetes and heart disease. Harris County reports two-thirds of adults and one-third of children as overweight or obese, clearly illustrating the health outcomes of poor food access.[2]

JESSICA LEE: In the Third Ward, the impact is much more pronounced. Research by Moore et al. (2019) indicates that around 15%

[1] Schuler, Jane, and Raj Koka. *Urban Food Deserts: A Case Study of Houston*. Houston: University of Houston Press, 2019.

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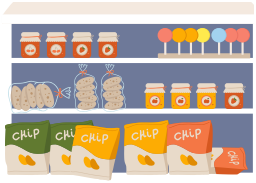
Chicago Manual of Style, 17th Edition

The interview portrayed in this submission is a product of the authors' imagination. While the interview may reference actual people, the subject matter and language attributed to those people is entirely fictitious.



Without local options, families rely on convenience stores and fast food, increasing consumption of ultra-processed foods high in sugar, salt, fat, and chemicals, worsening chronic diseases and reducing life expectancy.

of our residents must travel outside the community to find groceries.[3] Without local options, families rely on convenience stores and fast food, increasing consumption of ultra-processed foods high in sugar, salt, fat, and chemicals, worsening chronic diseases and reducing life expectancy.

DR. TORRES: Exactly. And beyond physical health, living in a food desert causes significant psychological stress, taking its toll on mental health due to constant worry over food affordability and accessibility.

HOST: Dr. Robinson, Dr. Torres mentioned that one of the major causes of food deserts is the lack of supermarkets in certain regions. Why do you believe supermarkets avoid these areas?

DR. ROBINSON: The main issue lies in profitability. Grocery stores have notoriously slim profit margins—approximately 1–3%—making them hesitant to invest in economically underprivileged areas. Dollar stores, however, benefit from higher margins, approximately 30–36%, due to low operating costs and strong supply chain efficiencies.[4] They dominate lower-income neighborhoods, creating an economic barrier that discourages grocery stores from serving certain areas.

JESSICA LEE: That's true. Historically, grocery chains have avoided communities like Houston's Third Ward neighborhood due to racial bias influencing perceptions of profitability, as detailed by Bower et al.[5] This pattern has left a lasting impact, evident in today's landscape where full-service supermarkets are scarce, while dollar stores and fast-food outlets are rampant.[6]

The resulting limited access to nutritious food causes a cycle of economic hardship and poor health outcomes, deepening the disparities these communities face.[7,8]

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[3] Moore, Latoya, et al. "Food Access and Health Disparities in Urban Communities." *Journal of Urban Health* 96, no. 4 (2019): 567–582.

[4] University of Michigan. *The Economics of Dollar Stores in Low-Income Neighborhoods*. Ann Arbor: University of Michigan Press, 2020.

[5] Bower, Kelly, et al. "Racial Bias in Retail Development: A Case Study of Houston's Third Ward." *Urban Studies Journal* 51, no. 8 (2014): 1456–1472.

[6] Interact Brands. *Retail Trends in Urban Food Deserts*. Houston: Interact Brands, 2022.

[7] NextGen Purpose. *Addressing Food Deserts: A Path to Equity*. Washington, DC: NextGen Purpose, 2024.

[8] National Institute on Minority Health and Health Disparities (NIMHD). *Health Disparities in Food Deserts*. Bethesda, MD: NIMHD, 2024.

DR. ROBINSON: Indeed. Dollar stores have immense buying power and lower operational costs which local businesses can't match, creating an economic environment hostile to healthier alternatives. Small local markets struggle due to higher pricing structures, ultimately being forced out.

HOST: I see. So, in the case of food deserts, the free-market forces fail to allocate food resources in a socially optimal manner because grocery chain expansion into these areas makes little financial sense for these firms. Is that right?

DR. ROBINSON: That's exactly right.

HOST: I assume that many policies have already been proposed to combat these issues. Dr. Torres, could you please elaborate on some of the misunderstandings surrounding current policy approaches on this issue?

DR. TORRES: Certainly. A common misconception is that building grocery stores alone addresses food deserts. However, without affordability and acceptance of SNAP or WIC,[9] grocery stores fail to meet low-income residents' health needs. To be fair, FEMA does provide microgrants primarily focused on emergency food relief; however, these microgrants don't address the structural, long-term inequities causing food insecurity.[10]

[9] SNAP (Supplemental Nutrition Assistance Program) provides low-income individuals and families with monthly financial aid to buy groceries at certain stores, while WIC (Women, Infants, and Children Program) offers vouchers for essential nutrition to pregnant women and young children. However, many grocery stores in food deserts do not accept SNAP or WIC benefits as payment, and simply building new stores without ensuring that they offer affordable prices and accept these programs leaves low-income residents reliant on fast food and dollar stores.

[10] Federal Emergency Management Agency (FEMA). *Emergency Food Relief Programs*. Washington, DC: FEMA, 2023.

DR. ROBINSON: Dr. Torres is totally right. Even when grocery stores enter food deserts, they price fresh produce as much as 20% higher than in suburban stores due to lower sales volume, supply chain inefficiencies, and lower purchasing power among residents.[11]

Additionally, as outlined by a 2020 study, restrictive zoning laws in urban areas make it easier to develop fast-food restaurants and dollar stores than supermarkets that offer fresh produce, causing these food deserts to appear more prominently in populated cities.[12] Thus, reforming these zoning laws is crucial to expanding food access.

HOST: I see. Dr. Robinson, you mentioned earlier that food deserts create significant economic and social problems. Beyond the immediate impact on local communities, how do they contribute to broader national economic issues?

DR. ROBINSON: I'm glad you asked. One of the most significant, wide-ranging economic consequences is the reduction in labor productivity; when a large part of your workforce lacks access to nutritious food, struggles with fatigue, concentration, and overall job performance result, which ultimately causes a decline in national economic output. In fact, the U.S. economy loses an estimated $160 billion annually due to lost productivity and higher healthcare costs related to food insecurity.[13]

Another major economic consequence is the strain food deserts place on public health care systems. The Centers for Disease Control and Prevention (CDC) reports that treating obesity-related illnesses—which are amplified by food deserts—costs the U.S. economy over $1.1 trillion annually.[14] In other words, since many of these costs are covered by Medicare and Medicaid, our taxpayers bear the financial burden of treating illnesses that could be avoided by improving food access.

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[11] Brookings Institution. *The Economics of Food Deserts*. Washington, DC: Brookings Institution Press, 2021.
[12] Harvard Kennedy School. *Zoning Laws and Food Access*. Cambridge, MA: Harvard University Press, 2020.
[13] Bread for the World. *The Economic Cost of Food Insecurity*. Washington, DC: Bread for the World, 2023.
[14] Centers for Disease Control and Prevention (CDC). *Obesity and Economic Costs*. Atlanta, GA: CDC, 2022.

DR. TORRES: That's true. I've also come to the conclusion that by addressing the food desert dilemma, the government could reduce public health care spending and lower taxpayer burdens. For example, a study I recently read found that food-insecure individuals incur 45% higher annual medical costs than those with reliable food access,[15] again, clearly highlighting how much households could save in expenses if they had better access to food. On top of that, households in food deserts spend an average of 30% more on food-related expenses than those in food-secure areas.[16] No matter how you look at it, food deserts reduce families' abilities to invest in other essential areas such as housing, education, and savings.

DR. ROBINSON: You're absolutely right. As I talked about a little before, grocery stores in food deserts charge higher prices for fresh food, contributing to localized food inflation. Therefore, it makes sense that food-insecure households spend a larger proportion of their income on food compared to food-secure households, harming their economic well-being by decreasing their real disposable incomes.[17]

JESSICA LEE: Also, in addition to financial strain, food insecurity leads to long-term consequences for children's academic and economic futures. Poor nutrition in early childhood is linked to lower academic performance, which in turn reduces college attendance rates and potential lifetime earnings. A study by the National Bureau of Economic Research (NBER) found that children who experience food insecurity score significantly lower on standardized tests and are less likely to graduate from high school.[18] These educational setbacks perpetuate intergenerational cycles of poverty, making it even harder for food desert communities to achieve upward class mobility.

HOST: Wow, the impacts of food deserts go much further than I initially thought. However, if market forces alone cannot resolve these problems, what policy solutions should be considered to align food security with the Federal Reserve's goals of maximum employment and stable prices?

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[15] Urban Institute. *Healthcare Costs and Food Insecurity*. Washington, DC: Urban Institute, 2023.
[16] Urban Institute. *Food Expenditures in Food Deserts*. Washington, DC: Urban Institute, 2022.
[17] United States Department of Agriculture (USDA). *Food Spending and Economic Well-Being*. Washington, DC: USDA, 2022.
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DR. ROBINSON: At the very least, effective policy solutions must address both affordability and accessibility while ensuring that food distribution remains economically sustainable. One approach is expanding tax incentives for grocery stores that accept SNAP and WIC while also implementing price controls on staple goods in low-income neighborhoods. A 2022 study from the Economic Policy Institute found that providing financial incentives for grocers to operate in underserved areas can increase fresh food availability by up to 40%, but only if these stores are required to maintain affordable pricing structures.[19]

The U.S. Department of Agriculture has reported that food hubs reduce transportation costs by an average of 25%, making fresh food more affordable in low-access areas.

Another critical solution is investing in alternative food distribution models such as regional food hubs, which help lower food prices by reducing supply chain inefficiencies. The U.S. Department of Agriculture has reported that food hubs reduce transportation costs by an average of 25%, making fresh food more affordable in low-access areas.[20] Houston has one of the largest metro areas in the U.S., but food deserts persist in low-income areas like Sunnyside, Kashmere Gardens, and parts of Alief because of the traffic congestion. Expanding food hubs would strengthen supply chains, ensuring affordable fresh food reaches these underserved areas. Strengthening these networks would also create new entry-level jobs in food processing, logistics, and retail, contributing to the Federal Reserve's goal of maximum employment.

Public-private partnerships also play a vital role. Programs like Philadelphia's Fresh Food Financing Initiative, which provided $120 million in grants and loans to grocers in underserved communities, led to the opening of more than 90 new grocery stores in previously designated food deserts.[21] Scaling similar initiatives at a national level would increase fresh food availability while also driving economic growth in struggling communities.

HOST: Jessica, what solutions have you seen work at the community

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[19] Economic Policy Institute. *Incentivizing Grocery Stores in Food Deserts*. Washington, DC: Economic Policy Institute, 2022.

[20] United States Department of Agriculture (USDA). *Food Hubs and Supply Chain Efficiency*. Washington, DC: USDA, 2023.

[21] The Food Trust. *Fresh Food Financing Initiative: A Model for Success*. Philadelphia: The Food Trust, 2023.

level, and how can they be scaled?

JESSICA LEE: Community-driven solutions, such as urban agriculture and cooperative grocery models, have shown promise but need better funding to become sustainable. In Houston, local urban farms have improved food access in specific neighborhoods, but they often rely on volunteer labor and lack the scale to make a substantial economic impact. A 2021 report by the National Sustainable Agriculture Coalition found that urban farms can reduce food costs by 30% for local residents, but they need public investment to reach larger populations.[22] Expanding subsidies for urban agriculture projects could create long-term, locally-driven solutions that reduce dependency on large grocery chains.

Additionally, cooperative grocery stores—where residents collectively own and operate food markets—have proven effective in improving affordability and increasing fresh food access. The University of Wisconsin Center for Cooperatives found that community-owned grocery stores in low-income areas have 15% lower food prices compared to corporate supermarkets, as they reinvest profits into price reductions rather than dividends.[23] These models could be replicated nationwide to help mitigate the economic impact of food deserts.

HOST: Thank you all for this insightful discussion. The economic implications of food deserts extend far beyond food security—they impact workforce productivity, healthcare costs, inflation, and economic growth. Addressing this issue, without a doubt, requires a mix of coordinated policy interventions, infrastructure investments, and market-based solutions that align with the Federal Reserve's goals of economic stability and full employment. By making food access both equitable and economically viable, we can build a stronger, more equitable economy for all.

[22] National Sustainable Agriculture Coalition (NSAC). *Urban Agriculture and Food Access*. Washington, DC: NSAC, 2021.

[23] University of Wisconsin Center for Cooperatives. *Community-Owned Grocery Stores: A Path to Affordability*. Madison: University of Wisconsin Press, 2022.

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Left to right: Yashesh Shah, Roshan Shah, Jamie Ho

The Lawrenceville School

Lawrenceville, NJ

Cracking the Egg-conomy: The Scramble Behind Skyrocketing Egg Prices

YASHESH: Hello Listeners from near and far. My name is Yashesh and I'm going to be your host for today's episode where we crack into the nation's "egg-oconomics." And I'm here today with Roshan.

ROSHAN: Hi Guys!

YASHESH: And Jamie!

JAMIE: Hey y'all, how are you doing?

YASHESH: Guys, I have an interesting story for you. Just the other day, I walked into my local Waffle House, ready for my usual order of scrambled eggs and hash browns, but as I glanced at the menu, something stopped me cold. Right there, in bold, glaring yellow text was a message that felt like a punch to the gut: "Due to rising prices, a 50-cent surcharge will be added to each egg." Fifty cents. Per egg. Let that sink in. What used to be a humble, affordable breakfast staple is now a luxury. But it wasn't just about my breakfast. That little yellow text bubble was a tiny window into a much bigger problem—one that's cracking open the fragile shell of our food economy.

ROSHAN: I agree Yashesh, that number is crazy, and actually according to the USDA Producer Price Index, which tracks changes in prices received by domestic producers, egg prices jumped 300.7% from January 2024 to January 2025, becoming one of the most volatile food staples ever (Gravalese).

JAMIE: That surge in prices has made eggs so valuable that they've even become a target for crime. I actually saw a report about a late-night heist in Pennsylvania where thieves stole 100,000 organic eggs

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MLA 9th Edition

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from Pete & Gerry's, one of the most widely stocked brands in grocery stores worldwide (Burke).

YASHESH: So, from surcharges at Waffle House to egg heists in Pennsylvania, it's clear that the rising cost of eggs isn't just a minor inconvenience but a full-blown economic phenomenon. But what's really behind this scramble? Today, we're going to crack open the causes of these skyrocketing egg prices, explore their wider economic impact, and take a look at what policies could help bring prices back to a more manageable level.

ROSHAN: I think we can start breaking down this egg market phenomenon by first looking at the inflation that has occurred over the past eight years, dating back to pre-COVID times.

YASHESH: That's a great idea, Roshan. One of the ways that I was thinking we can do this is using the CPI-U.

JAMIE: Wait, what does C3PO have to do with eggs?

ROSHAN: *[laughs]* Not the Star Wars droid! The Consumer Price Index for All Urban Consumers, or CPI-U, calculates inflation by measuring the average change in prices paid by urban consumers for a basket of goods over time ("CPI Home").

YASHESH: Exactly! If we simplify our basket to just include a dozen eggs and a gallon of milk (another household staple), we find that the overall inflation rate from 2018 to 2025 is 89%, while wages have only increased 33% in the same period (US Inflation Calculator, Average Hourly Earnings of All Employees). That's a huge gap.

JAMIE: Got it! So, even though people are making more money, the price of essential goods and eggs especially is rising at almost twice the rate. Seems like we're all walking on eggshells with these prices.

ROSHAN: Exactly! However, there must be more to this than just inflation, something else is driving egg prices abnormally high. While I've noticed price increases across the board at the grocery store, nothing compares to the spike in egg prices. I've had to skip buying them altogether at times.

YASHESH: Guys, I think the situation is even worse than it seems. A major factor behind this surge is the avian flu, which wiped out more than 20 million egg-laying chickens in the U.S. last quarter, drastically cutting supply (*Detections of Highly Pathogenic Avian Influenza)*.

ROSHAN: This massive loss of egg-laying hens has triggered a negative supply shock, sending ripples through the entire economy. With fewer chickens producing eggs, supply has plummeted, leaving farmers struggling to meet consumer demand and pushing prices to record highs.

JAMIE: But what exactly is a negative supply shock, and why does it have such a drastic effect on prices?

ROSHAN: A negative supply shock occurs when the supply of a good or key input is suddenly and significantly reduced, leading to higher production costs and lower overall output. In this case, the loss of millions of hens has constrained egg production, forcing prices up while reducing the total number of eggs available in the market. When combined with consistently high demand, this creates the perfect storm for skyrocketing prices and economic strain on consumers.

YASHESH: Regarding egg prices, this avian influenza has drastically reduced supply due to hen mortality, impacting a key factor of production. Thus the bird flu decreases the Short Run Aggregate Supply, meaning real GDP and output for the egg market are decreasing while egg prices are increasing. Thus, less of a supply with a high demand, as eggs are staples, drives the prices up.

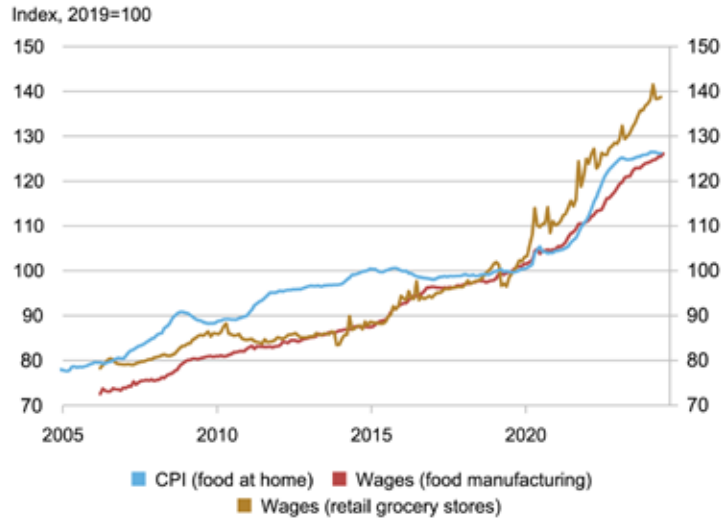
JAMIE: Guys! In addition, I think it's important to take into account the whole supply chain that it takes for an egg, from the hen to the omelet.

ROSHAN: There are four main stages and labor factors in this process, these being: the farmers harvesting eggs, the labor involved in shipping, the grocery store workers, and the consumers who then

In this case, the loss of millions of hens has constrained egg production, forcing prices up while reducing the total number of eggs available in the market. When combined with consistently high demand, this creates the perfect storm for skyrocketing prices and economic strain on consumers.

According to the Beige Book issued by the Federal Reserve, food producers across the country are reporting significant increases in non-labor input costs, which means everything involved in getting eggs from the farm to the grocery store is getting more expensive.

buy and cook the eggs. Due to sharp increases in labor prices, for example, grocery workers are getting paid nearly 40% more today than 2018 (Stevens).



YASHESH: So, besides supply chain issues and disease outbreaks, are there any other factors causing these ridiculous price hikes?

ROSHAN: Oh, absolutely. Rising production costs are a big one. Farmers are facing higher feed costs, increased fuel prices, and even labor shortages. According to the Beige Book issued by the Federal Reserve, food producers across the country are reporting significant increases in non-labor input costs, which means everything involved in getting eggs from the farm to the grocery store is getting more expensive ("National Summary").

JAMIE: So, what can be done? Are there any policies in place to stop this, or is the government just letting the market do its thing?

YASHESH: Great question! To help answer that I would like to introduce the one and only Adam Smith, the father of modern economics and author of *The Wealth of Nations* and *The Theory of Moral Sentiments*.

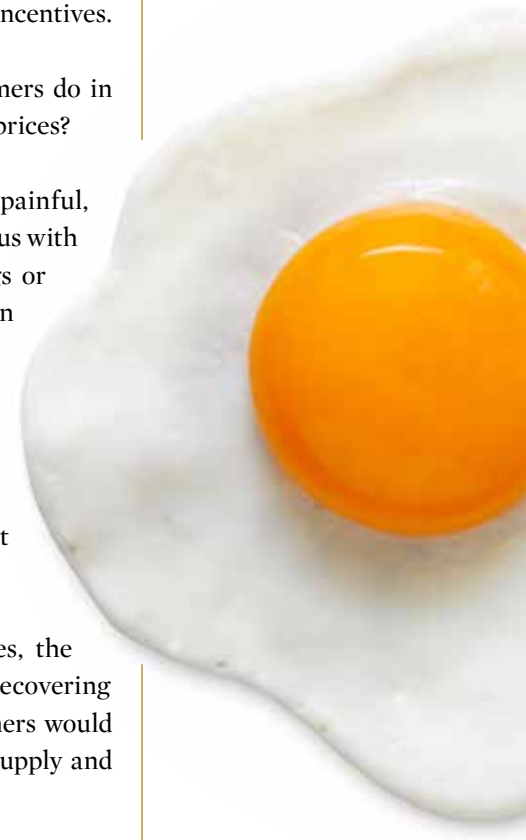
ADAM SMITH: Thank you all for having me on. Let's dive right into this egg-cellent issue.

YASHESH: Going back to the question Jamie asked: Which policy

options are being considered to stabilize egg prices, and what is your perspective on these topics?

ADAM SMITH: One of my most famous topics is the "invisible hand." In the case of eggs, when supply is constrained naturally, i.e., on account of avian flu, prices naturally rise and the invisible hand is said to be at work. However, I believe that if government intervention disrupts the market too much to try and stabilize the prices, it could lead to inefficiencies. A better approach might be targeted subsidies for affected farmers to help stabilize supply without distorting incentives.

ROSHAN: While I agree Adam, what should we consumers do in the meantime, especially those who can't afford these high prices?



ADAM SMITH: Indeed, price fluctuations can be painful, especially for the lower classes. However, one must be cautious with intervention. However, price controls such as caps on eggs or dairy, often will create even more severe shortages rather than solve the problem. If farmers cannot cover their costs due to artificially low prices, they will simply stop producing. This would then only allow for egg prices to further increase, creating an adverse effect.

ROSHAN: Got it. So what do you think the government should do in response to these high food prices?

ADAM SMITH: Rather than directly controlling prices, the government could implement subsidies to support producers recovering from crises. By reducing the cost of production, more farmers would be motivated to produce more eggs, increasing aggregate supply and bringing prices down naturally.

JAMIE: And what about struggling consumers? Are there ways to support them without distorting the market?

ADAM SMITH: Certainly. Expanding food assistance programs, such as providing direct aid or vouchers for low-income households, ensures that people can still afford necessities without disrupting supply-and-demand mechanisms.

YASHESH: So would you say that the free market should remain

largely untouched, with government intervention coming in minor ways?

ADAM SMITH: Precisely! The market is a dynamic system. It self-corrects through competition and innovation. If government policies encourage supply to recover and maintain economic incentives, prices will stabilize in time. However, excessive regulation could backfire. For instance, overly strict tariffs on imported eggs or price-fixing policies might cause distortions that prolong high prices rather than alleviate them.

YASHESH: That's a fascinating perspective! Thank you so much for providing us with insight and spending your time on this show!

[*Transition with Music*]

ROSHAN: Now, let's shift to talking about the effects of U.S. Egg-oconomics on a global scale!

JAMIE: A good point to mention is that, by looking at how other countries handle food inflation, we can observe what the potential outcomes would be if we implemented a similar policy. For example, Japan has used government-controlled price stabilization funds to prevent extreme egg price volatility. These funds operate by buffering supply fluctuations, ensuring that prices do not swing as dramatically during times of crisis. By maintaining a reserve stock of eggs, Japan reduces dependency on sudden market corrections, along with different supply shocks *(Japan)*.

YASHESH: Meanwhile, France has introduced strict farming regulations and disease-prevention programs to protect poultry supply. By investing heavily in biosecurity measures, France has minimized the impact of avian diseases, preventing mass cullings that would otherwise disrupt egg production. This approach has not only helped stabilize prices but has also strengthened consumer confidence in the safety of poultry products (*USDA Reduces HPAI Restrictions on Poultry from France and the European Union | Animal and Plant Health Inspection Service*).

ROSHAN: Countries like India and Mexico implemented food subsidies and export restrictions during the 2008 Global Food Crisis to prevent food shortages and keep prices stable. Thus, the use of direct government intervention in food markets, contrasting Adam Smith's view, can be beneficial in ensuring that domestic consumers could still afford essential staples, although it also created trade tensions with exporters ("2007–2008 World Food Price Crisis").

JAMIE: Similarly, during the 1970s Stagflation Crisis, many governments attempted wage and price controls, though with mixed success. While these controls temporarily curbed inflation, they also led to market distortions and supply shortages, proving that price caps alone are not a sustainable solution to inflationary pressures (*The Great Inflation | Federal Reserve History*).

YASHESH: The World Bank and the International Monetary Fund (IMF) have noted that food inflation often leads to social unrest and increased government intervention, especially in developing economies where food prices make up a larger percentage of household income. When food becomes unaffordable, governments often resort to policy adjustments, trade restrictions, or increased subsidies to stabilize their economies ("Food Security | Food Insecurity Statistics & Solutions").

ROSHAN: You know, guys, I think the ultimate takeaway from both our interview with Adam Smith and observing these crises suggest that governments must carefully balance market forces with interventionist policies. Too much regulation can lead to unintended inefficiencies, while too little can cause severe price volatility and social instability.

Too much regulation can lead to unintended inefficiencies, while too little can cause severe price volatility and social instability.

JAMIE: And while policymakers scramble to find solutions, the crisis has reached unexpected levels, even making its way into international diplomacy.

YASHESH: Guys, however, in a pretty surprising turn of events, President Donald Trump recently sought to import eggs from Denmark to combat rising U.S. prices by increasing the supply. This move highlights just how severe the shortage has become, as even political figures recognize the necessity of securing affordable food sources from abroad.

ROSHAN: That's right! The idea of turning to foreign markets for something as simple as eggs shows just how deeply inflation and supply

shocks are impacting everyday goods. But would importing eggs truly fix the problem? Or would it create new challenges, such as increased dependence on global markets and potential trade disputes?

JAMIE: One thing's for sure, egg prices have cracked open a broader conversation about supply chains, inflation, and economic policy. Whether through tariffs, trade deals, or production incentives, the decisions made in the coming months will shape how we approach the scramble for food security.

YASHESH: And with that, we wrap up today's episode. Thanks for joining us as we peeled back the many layers of this issue. Stay tuned for our next episode, where we'll dive into another economic challenge shaping our world. Until then, keep an eye on those grocery prices, and maybe start raising your own chickens!

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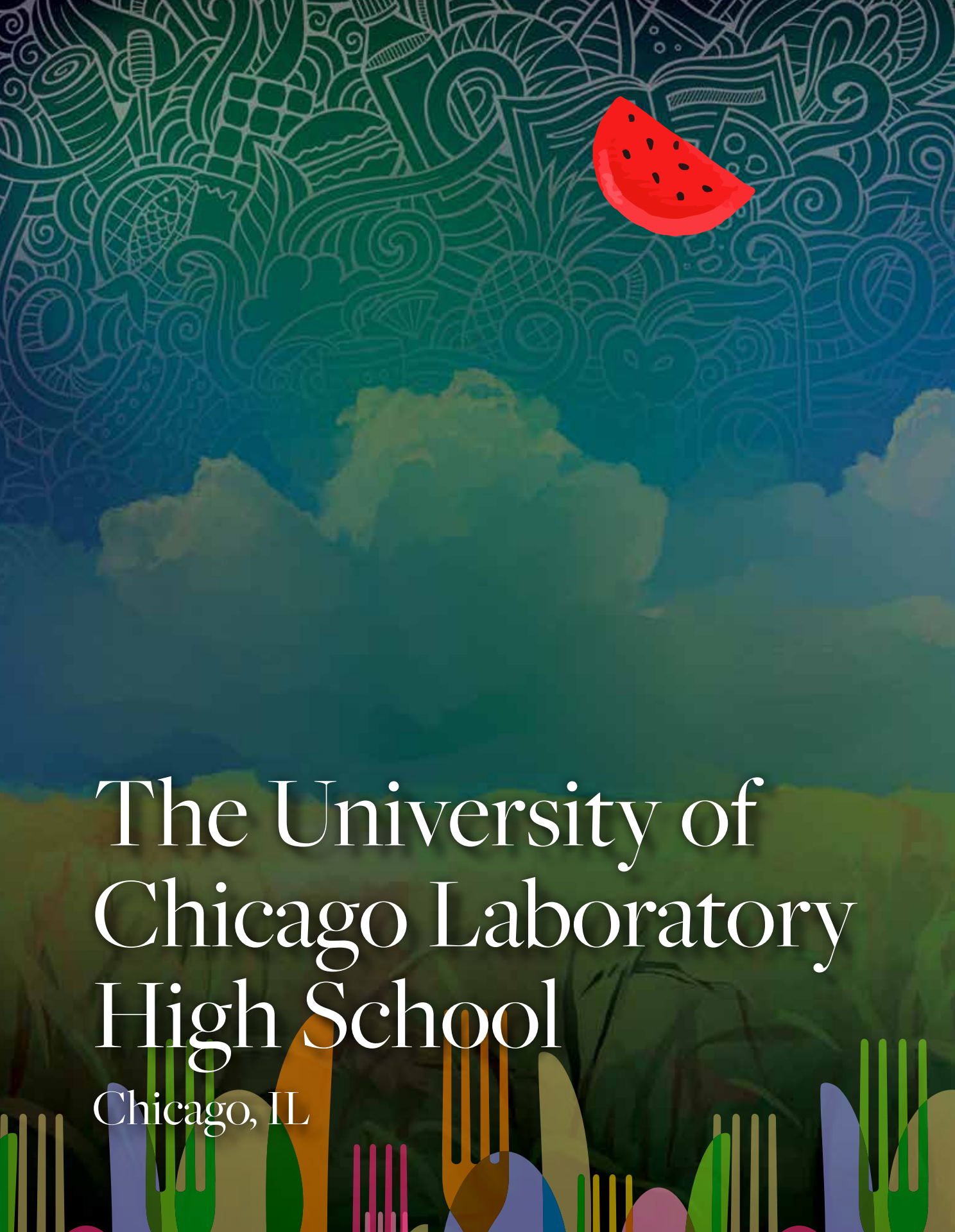

The University of Chicago Laboratory High School

Chicago, IL

When Healthy Just Isn't An Option: Food Insecurity Fueling Rising Obesity Rates

DANIEL: Food—a constant in our everyday lives, so much so that we consider it a fundamental right. It is often thought of as something quite simple: everyday fuel for our bodies. But food is much more than that. It's a true reflection of wealth disparities and inequalities within our current society.

AUSTEN: Welcome to *When Healthy Just Isn't an Option*. Today's episode is titled: "Food Insecurity Fueling Rising Obesity Rates." Here we'll learn, discuss, and measure the impacts of food on different socioeconomic classes.

CONRAD: During this podcast, we'll also be covering the impact of socioeconomic status on food choices and obesity rates, as well as the pros and cons of previous government intervention methods and what should be done to alleviate this issue.

KRISH: To get a clearer understanding of this issue, we welcome Dr. Carl Smith to the podcast, an expert epidemiologist who focuses on the connection between wealth inequalities and food.

DR. SMITH: Great to be here today.

DANIEL: Great to have you here, Dr. Smith. We wanted to start off by getting a greater understanding of the connection between socioeconomic status and food. What would you say are the main factors influencing these concepts?

DR. SMITH: Great question! First, we need to address the fact that 40.3% of adults in the United States struggle with obesity. 44.6% of adults over 20 struggles with obesity if they have a high school diploma

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or less, whereas obesity is only prevalent among 31.6% of adults over 20 with a bachelor's degree or more.[1] Considering there is a high association between low-income communities and inability to access higher education, we see the numbers are staggering.[2] When we think about the connection between lower socioeconomic classes and food, it's important to consider two concepts: the distinction between calorie intake versus calorie expenditure, as well as the behavioral economics theory of embeddedness, a term introduced by Karl Polanyi.[3]

DANIEL: Hmm... So, what makes caloric intake different from caloric expenditure?

Typically, in low socioeconomic regions, we see caloric intake is much higher due to processed and calorie-dense foods as well as high levels of embeddedness as citizens do not have the financial means to choose healthy food options that are often more expensive.

DR. SMITH: Great question! The distinction between calorie intake and calorie expenditure is incredibly important. Essentially, calorie intake refers to an individual's consumption of calories, typically through food and drink, giving them energy for the day.[4] Calorie expenditure refers to the body's burning of calories throughout the day due to daily activities.[5] Being healthy means that there needs to be a balance between intake and expenditure; too much intake leads to obesity while too much expenditure typically leads to malnutrition.[6]

DANIEL: What an interesting way to think about that. It's cool to see how our body operates and self-regulates.

DR. SMITH: Exactly! This issue of balance, however, arises when we start to include other factors, some outside of our control. What I'm trying to get at here is the idea of embeddedness, an economic concept that essentially states that an individual's choices are constrained by their surroundings.[7] In this case, it's important to note that we consider

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[1] "CDC: Obesity and Severe Obesity Prevalence in Adults: United States, August 2021–August 2023," Center for Disease Control National Center for Health Statistics, September 2024, accessed March 17, 2025. https://www.cdc.gov/nchs/products/databriefs/db508.htm.

[2] "The Relationship Between Socioeconomic Status and Literacy: How Literacy Is Influenced by and Influences SES," *Michigan Journal of Economics*, January 5, 2023, https://sites.lsa.umich.edu/mje/2023/01/05/the- relationship-between-socioeconomic-status-and-literacy-how-literacy-is-influenced-by-and-influences-ses/.

[3] Nuno Miguel Cardoso Machado, "Karl Polanyi and the New Economic Sociology: Notes on the Concept of (Dis)Embeddedness*," R*CCS Annual Review*, no. 3 (October 1, 2011), https://doi.org/10.4000/rccsar.309.

[4] NHS Website, "Understanding Calories," nhs.uk, January 16, 2025, https://www.nhs.uk/live-well/healthy-weight/managing-your-weight/understanding-calories/.

[5] Website, "Understanding Calories."

[6] Ibid.

[7] Colin Marx, "The System Made Me Do It: Strategies of Survival," *The Global Encyclopaedia of Informality*, Volume 2: *Understanding Social and Cultural Complexity*, UCL Press, 2018: 7–180.

food options an individual choice, but this choice is heavily impacted by their financial ability to buy food, government interventions, and fluctuations in food pricing.

CONRAD: Hmm. So how does this play out in regions that may not have adequate support systems?

DR. SMITH: Typically, in low socioeconomic regions, we see caloric intake is much higher due to processed and calorie-dense foods as well as high levels of embeddedness as citizens do not have the financial means to choose healthy food options that are often more expensive.

DANIEL: That is quite interesting! Can you touch on the factors that influence both the high caloric consumption and the high level of embeddedness in these communities?

DR. SMITH: So, in recent years we have seen significant increase in the price disparity between healthy and unhealthy foods, which has been the primary reason for increasing obesity rates. According to a study done by Brown University, healthy food options are proven to be more expensive per serving—especially when it comes to protein.[8] Of course, higher income families have more disposable income to spend on food, which makes the financial burden of healthier food options much more bearable. More than that, food expenditures are disproportionate between social classes.[9]

AUSTEN: What happens between social classes that makes food expenditure disproportionate?

DR. SMITH: Good question. Engel's law states that as the household

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[8] Mayuree Rao et al., "Do Healthier Foods and Diet Patterns Cost More Than Less Healthy Options? A Systematic Review and Meta-analysis," *BMJ Open* vol. 3, no. 12 (December 1, 2013): e004277, https://doi.org/10.1136/bmjopen-2013-004277.

[9] Helen Millar, "What to Know About Obesity and Poverty," *Medical News Today*, April 25, 2023, https://www.medicalnewstoday.com/articles/obesity-and-poverty#statistics.

income increases, the relative proportion of income spent on food decreases.[10] Thus, lower income classes feel a larger financial strain on account of food, being pressured into purchasing cheaper food options which are typically calorie-dense but nutrient deficient.[11] This leads to a high caloric intake, which is the driver for obesity and gaining weight.

KRISH: Thanks for that, Dr. Smith. Let's switch gears and now talk about food options and scarcity.

AUSTEN: Recently, the term "food deserts," has frequently been used to categorize low-income communities in places where there is a lack of accessible healthy food options. Instead, calorie-heightened, fatty, sugary food—like fast food—seems to be the only plausible mode by which members of these communities can get food. What roles do food deserts play in the obesity issue in low-income communities?

DR. SMITH: Yes, that is exactly right. Food deserts are areas with a lack of access to affordable, nutritious food due to the absence of local grocery stores.[12] When we add this factor into the equation, we truly start to realize how large the disparity between social classes really is. There's a high association between food deserts and lower-income communities, and we constantly see the cycle of poverty playing a role in lower income communities and their dietary choices.[13] Another factor that exacerbates this issue is the time spent eating. These food deserts often only have fast-food restaurants or "ready-made" foods. Not only are these foods high in sugar and calories, the main proponents of weight gain, but they also encourage fast eating habits. When we think of lower income communities, there are often people working long hours

[10] Andreas Chai and Alessio Moneta, "Retrospectives: Engel Curves," *The Journal of Economic Perspectives* 24, no. 1 (February 1, 2010): 225–40, https://doi.org/10.1257/jep.24.1.225.

[11] Chai and Moneta, "Retrospectives: Engel Curves."

[12] M. Nathaniel Mead, "Urban Issues: The Sprawl of Food Deserts," *Environmental Health Perspectives* 116, no. 8 (August 1, 2008), https://doi.org/10.1289/ehp.116-a335a.

[13] Mead, "Urban Issues: The Sprawl of Food Deserts."

who stop by these fast-food places to grab a quick bite.[14] In contrast, high-income families often enjoy leisurely meals, based around having family time together.[15] They spend much more time preparing and consuming the food. Studies done by the University of Chicago have shown that slow eaters are 42% less likely to be overweight than fast eaters due to metabolism rates.[16] They also found that consuming food within two hours of sleeping encouraged weight gain.[17] If we consider these factors, we can clearly see why lower-income communities have a greater chance of obesity. Of course, there are so many other factors that come into play when we consider this topic, such as education, but one thing is clear: there is a distinct link between poverty and obesity. In states with over 35% of the population in poverty, there was a 145% increase in obesity cases compared to richer states.[18]

CONRAD: Thank you so much for your time, Dr. Smith. We learned so much, and we hope our listeners did too!

DR. SMITH: Of course! To all the listeners, I encourage you all to do further research on this topic. Thank you all for having me.

KRISH: Let's now move to the second segment of our podcast: focusing on what preventative measures we can take to prevent these disparities between socioeconomic classes. We introduce Dr. Aaron Jones, an expert in the field of government policy. Welcome to the podcast, Dr. Jones!

DR. JONES: Thank you for having me. It is a pleasure to be here.

CONRAD: In the past, we've seen government intervention measures to combat the issue of obesity in low-income communities. What specifically has been done and, at the end of the day, have they been successful?

There's a high association between food deserts and lower-income communities, and we constantly see the cycle of poverty playing a role in lower income communities and their dietary choices.

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[14] C. Hupkens, "Social Class Differences in Food Consumption. The Explanatory Value of Permissiveness and Health and Cost Considerations," *European Journal of Public Health* 10, no. 2 (June 1, 2000): 108–13, https://doi.org/10.1093/eurpub/10.2.108.

[15] Hupkens, "Social Class Differences in Food Consumption. The Explanatory Value of Permissiveness and Health and Cost Considerations."

[16] Edwin McDonald MD, "Eating Slower May Help With Weight Loss," UChicago Medicine, n.d., https://www.uchicagomedicine.org/forefront/weight-management-articles/eating-slower-may-help-with-weight-loss.

[17] Ibid.

[18] Helen Millar, "What to Know About Obesity and Poverty," April 25, 2023, https://www.medicalnewstoday.com/articles/obesity-and-poverty#statistics

Historically, the United States Federal Government has split its intervention into two main categories: regulation-based intervention and aid-based programs.

DR. JONES: When we think about the government's role in combating this "epidemic," we really must consider that the government's job is to limit the embeddedness in communities and control the caloric intake within these communities. Historically, the United States Federal Government has split its intervention into two main categories: regulation-based intervention and aid-based programs. However, most of these methods have fallen short. In terms of the regulatory measures, the government has concentrated its efforts in two main ways. First, select states throughout the U.S. implemented a "sugary drink tax" during the mid-2010s, which placed taxes on sodas and other sugary drinks.[19] Its goal was to discourage the purchase and consumption of any sodas or sugary drinks by heightening their prices.[20] In theory, this policy attempted to control the supply/demand curve of sodas by controlling the price. This policy failed, playing a regressive role, and negatively impacting low-income communities. Because low-income individuals spend a larger percentage of their income on essential food and drink, increasing the price of sugary drinks disproportionately affected these populations.[21] In addition, because of food deserts and inaccessibility of healthier options, low-income populations came to rely on and heavily consume sodas and other unhealthy, sugary drinks. This means that a sugary drink tax will again disproportionately affect lower income populations.[22]

CONRAD: Hmm. Seems like lawmakers need to find strategies that can address all members of the community.

DANIEL: In the past, I know there have been regulations on portion sizes as well, especially in New York. What have these regulations looked like and how effective were they?

DR. JONES: The New York case is definitely an interesting one. The government attempted to limit the intake of sugary drinks by placing a limit on the portion size in lieu of a sugary-drink tax. In 2012, New York City implemented the "Portion Cap Rule," limiting the size of sugary

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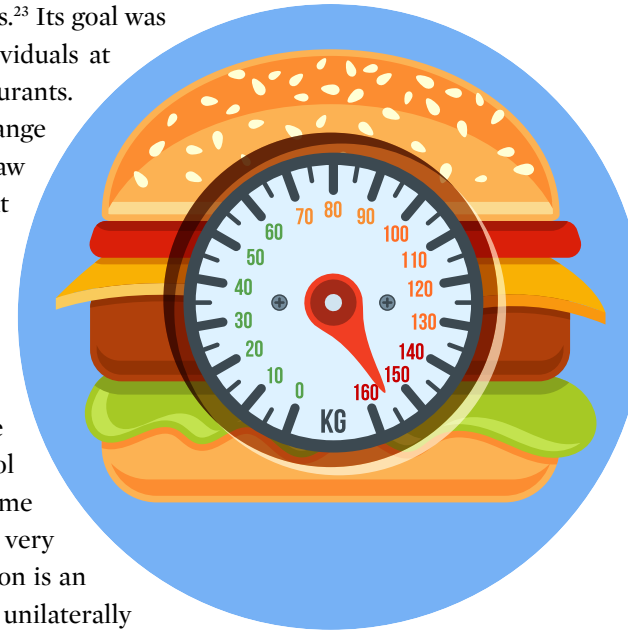
[19] Elise Proulx, "Taxes on Sugar-Sweetened Drinks Drive Decline in Consumption," *UC Berkeley Public Health*, January 16, 2024, https://publichealth.berkeley.edu/news-media/research-highlights/taxes-on-sugar-sweetened- drinks-drive-decline-in-consumption.

[20] Ibid.

[21] Institute of Economic Affairs, "Sugar Taxes: A Briefing," Institute of Economic Affairs, January 16, 2017, https://iea.org.uk/publications/research/sugar-taxes-a-briefing.

[22] Ibid.

drinks sold to a maximum of 16 fluid ounces.[23] Its goal was to reduce the caloric consumption of individuals at fast-food establishments and other restaurants. However, it really is hard to deem this change as successful or unsuccessful because the law lasted for such a short period of time that not much data was able to be collected on the soda ban.[24] The beverage industry and other retailers sued the city and called the ban "unconstitutional," overstepping its authority as a government.[25] Thus, the law was quickly rescinded. In these cases, we see that governments are unable to control the caloric consumption in these low-income communities. In policymaking, it is now very important to consider that food consumption is an individual freedom. Governments cannot unilaterally shape policy and regulations because these are considered restrictions of freedom. Since then, New York has established a new system focused on menu labeling to educate the population on their caloric consumption.[26]



AUSTEN: You mentioned more aid-based intervention before. What are these intervention methods?

DR. JONES: There have been a lot of aid-based methods of intervention that the government has taken in order to try to balance the caloric consumption and expenditure of low-income communities. Two such examples are the increase in public recreational areas, as well as generous agricultural subsidies, especially for corn, which contributed to over $151 billion in U.S economic output.[27] Increasing public recreational areas, such as parks and community centers, can

[23] Christina A. Roberto and Jennifer L. Pomeranz, "Public Health and Legal Arguments in Favor of a Policy to Cap the Portion Sizes of Sugar-Sweetened Beverages," *American Journal of Public Health* 105, no. 11 (September 18, 2015): 2183–90, https://doi.org/10.2105/ajph.2015.302862.

[24] Roberto and Pomeranz, "Public Health and Legal Arguments in Favor of a Policy to Cap the Portion Sizes of Sugar-Sweetened Beverages." American Journal of Public Health 105, no. 11 (September 18, 2015): 2183–90. https://doi.org/10.2105/ajph.2015.302862.

[25] Ibid.

[26] "NYC's Calorie Labeling Rule For Chain Retail Food Establishments: What You Need to Know," April 2018, accessed March 17, 2025, https://www.nyc.gov/assets/dca/downloads/pdf/businesses/FAQs-NYC-Calorie-Labeling-Rule.pdf.

[27] "Corn and Other Feed Grains - Feed Grains Sector at a Glance," Economic Research Service, n.d., https://www.ers.usda.gov/topics/crops/corn-and-other-feed-grains/feed-grains-sector-at-a-glance.

incentivize citizens in low-income communities to become more active. A more active lifestyle increases caloric expenditures and offsets caloric consumption. In addition, with a healthier city, there may be increased revenue, on account of other grocery stores and healthier restaurants being encouraged to set up locations in these communities.[28] Thus, one of the methods is increased funding to public recreational areas and facilities. This method has fallen short due to a lack of funding, but governments should move towards this method by reallocating tax funds. The other method is subsidizing agriculture. This approach focuses on subsidizing some of the costs for agriculture to cut costs for the average consumer.[29] The most prolific example of this is corn subsidies in the United States.

As a result of subsidies, abundant corn is turned into animal feed or sold in supermarkets, making the cost of food significantly less expensive, which may help alleviate the food desert issue.[30] If the cost of corn is high, then people will not buy, according to the supply-demand curve. That means that farmers will stop producing and providing corn, meaning that the government must regulate the price of corn. However, food subsidies are very volatile to change. For example, the Ukraine war and the COVID-19 pandemic both had significant impacts on agriculture and thus the government was forced to increase spending on subsidies.[31] In addition, corn subsidies especially may be abused and used for processed and unhealthy foods.[32] Cheaper corn prices have encouraged the production of cheap high-fructose corn syrup, which has been significantly linked to obesity and unhealthy populations. With proper oversight and regulations, both methods may be effective in combating obesity in these lower-income communities. But it is important to note that the most critical factor here is the redistribution of resources and tax revenue to establish these programs.

CONRAD: Are there solutions that stretch beyond just changing

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[28] Sandy J. Slater et al., "Would Increasing Access to Recreational Places Promote Healthier Weights and a Healthier Nation?," *Health & Place* 56 (February 10, 2019): 127–34, https://doi.org/10.1016/j.healthplace.2019.01.013.

[29] "Agricultural Subsidies," National Agricultural Library, n.d., https://www.nal.usda.gov/economics-business-and-trade/agricultural-subsidies.

[30] "Agricultural Subsidies | National Agricultural Library."

[31] David Amaglobeli, Todd Benson, and Tewodaj Mogues, "Agricultural Producer Subsidies: Navigating Challenges and Policy Considerations," IMF eLibrary, August 26, 2024, https://doi.org/10.5089/9798400285950.068.A001.

[32] Amaglobeli, Benson, and Mogues, "Agricultural Producer Subsidies: Navigating Challenges and Policy Considerations."

prices and giving more access to food?

DR. JONES: As you're aware, food deserts are defined as areas with little or no access to healthy, affordable food—but the problem really is systematic. Historical lack of government focus on these areas, as well as less investment from private companies, has led to an economic cycle which only makes the poor poorer, as they experience loss of access to healthy, affordable food options. A local community being denied access to supermarkets is frequently because of a perceived lower ability to get a return on investment in those communities by chain stores. When past legislation saw less money flowing into these communities (e.g., for maintaining government-owned buildings, jobs in the bureaucracy, infrastructure funds), local economies were weakened over time. In both urban and rural low-income areas, along with communities far from urban areas, stores aren't likely to make as much money as they would in more developed ones. This system, over time, hurts these communities purely because the situation offers less potential return on investment for companies. If not subsidized by the government, these places will continue to be less profitable for companies, which will lessen the likelihood of new stores opening. To really fix the problem of food deserts, we must help the economies in low-income areas.

DANIEL: Thank you for speaking with us today, Dr. B. On behalf of all our viewers, we really appreciate your insight into this issue through different lenses.

DR. JONES: Thanks for having me. To the listeners, I hope this discussion was meaningful to you in some way.

CONRAD: That's all for today's episode of *When Healthy Just Isn't an Option*.

AUSTEN: We all hoped you gathered something meaningful from today's discussion.

KRISH: I, for one, learned so much more about the struggle of low-income families on a day-to-day basis.

DANIEL: That's for sure. Next time I go to a grocery store, I will feel more grateful for having affordable, healthy food nearby.

AUSTEN: Definitely. Once again, thank you for tuning in, and see you next time on *When Healthy Just Isn't an Option*!

Cheaper corn prices have encouraged the production of cheap high-fructose corn syrup, which has been significantly linked to obesity and unhealthy populations.

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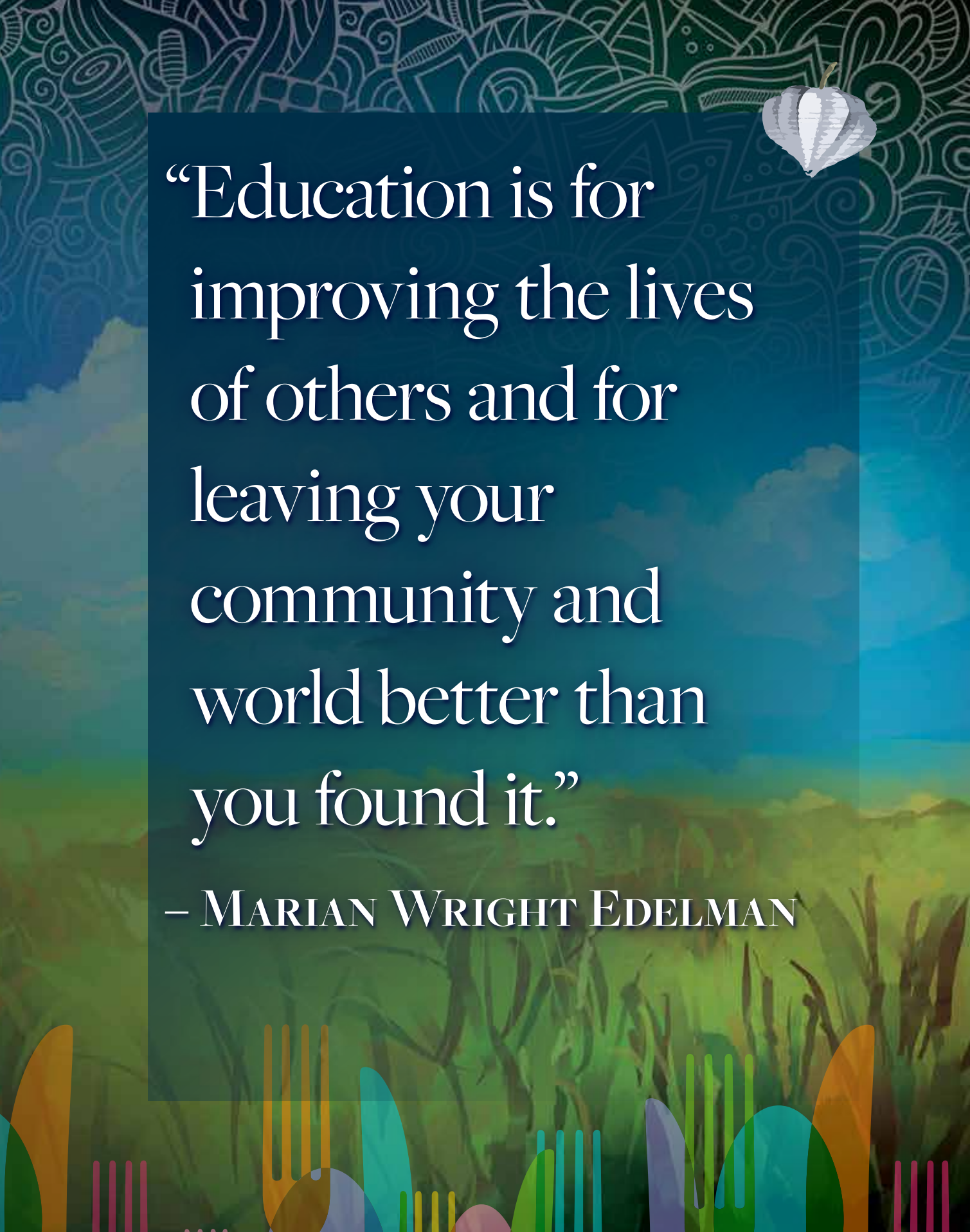
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