

# **Impact of COVID19 on Food Consumers and U.S. Agriculture**

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# Timeline of disruptive events

## Early March

Start of “stocking up”  
for food at home



HEALTH »

Hospitals

Hospital Heroes

Doctors

Senior Care

Wellness

Diets

Conditions

Medicare

Drugs & Treatments

HOME / HEALTH / CONDITIONS

## Stocking Up for the Coronavirus: What You Need

You don't have to empty pharmacy and store shelves in order to stay home if COVID-19 threatens.



By Michael O. Schroeder, Staff Writer March 12, 2020, at 3:20 p.m.



### Early March

Start of “stocking up” for food at home



### Mid to Late March

Two big demand shocks near destruction of demand for FAFH and spike in grocery demand

**CNN BUSINESS** Markets Tech Media Success Perspectives Videos LIVE TV Edition

## Panic buying is forcing supermarkets to ration food and other supplies

By [Hanna Ziady](#), [CNN Business](#)

Updated 1:52 PM ET, Wed March 18, 2020



## California Governor Gavin Newsom Calls for Statewide Closure of Dine-In Restaurants

Delivery and takeout will still be available, as will food trucks

by [Farley Elliott](#) | Mar 17, 2020, 9:41am PDT


**Early March**  
Start of “stocking up” for food at home




**Mid to Late March**  
Two big demand shocks  
near destruction of demand for FAFH and spike in grocery demand



**Early to Mid April**  
A return to normalcy in grocery and the calm before the storm



**Grocery store officials say supply chain slowly returning to normal, shelves being stocked**

 **Joe Mazan**  
*Updated: March 29, 2020 06:02 PM*  
*Created: March 29, 2020 05:18 PM*

**Early March**  
 Start of “stocking up” for food at home



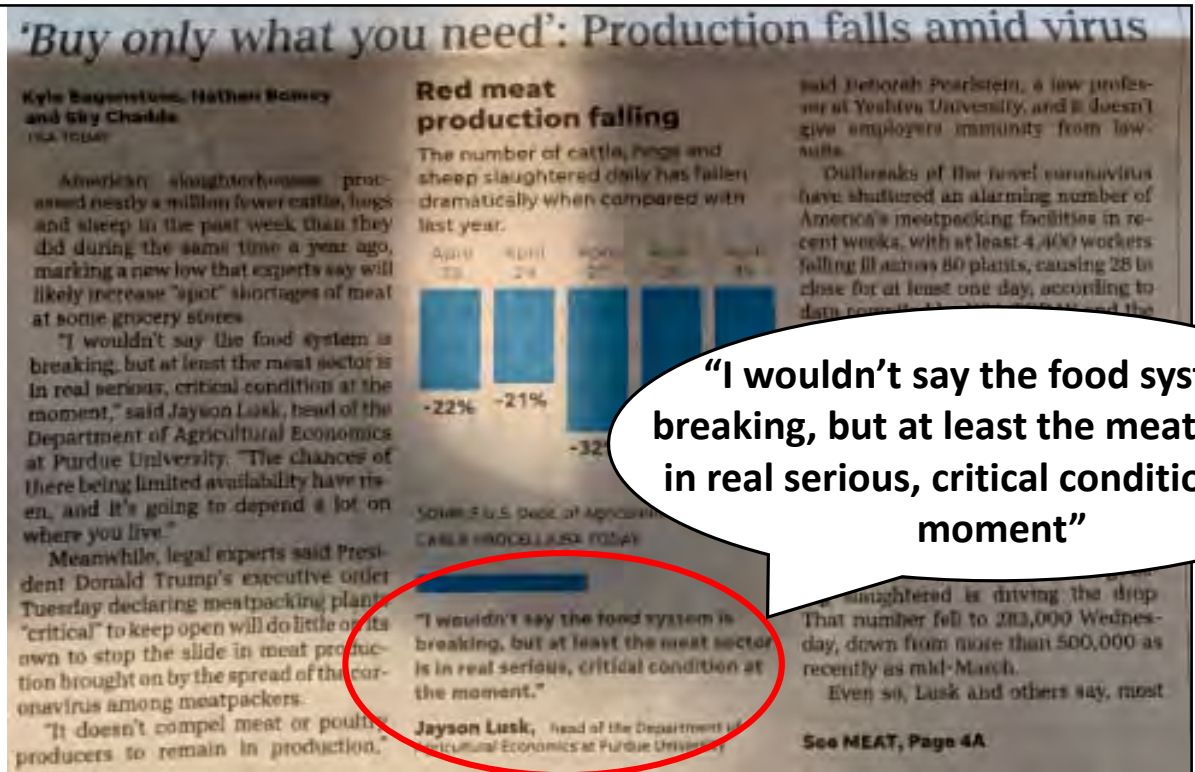
**Mid to Late March**  
 Two big demand shocks  
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**Late April to mid May**  
 Large negative supply shocks to beef and pork packing



"I wouldn't say the food system is breaking, but at least the meat sector is in real serious, critical condition at the moment"

**Early March**  
Start of “stocking up” for food at home



**Mid to Late March**  
Two big demand shocks  
near destruction of demand for FAFH and spike in grocery demand



**Early to Mid April**  
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**Late April to mid May**  
Large negative supply shocks to beef and pork packing



**June**  
Recovery in meat packing  
Return of FAFH



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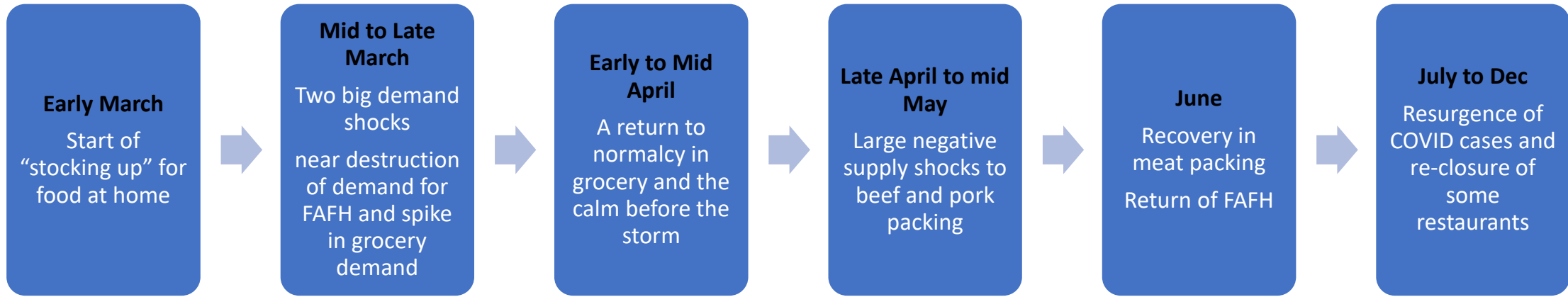
By **Cortney Moore** | FOXBusiness |

CORONAVIRUS · Published June 15

# Grocery shelves restocked after coronavirus pandemic panic buys

Nearly 70% of consumers were able to find high-demand sundries at the end of May





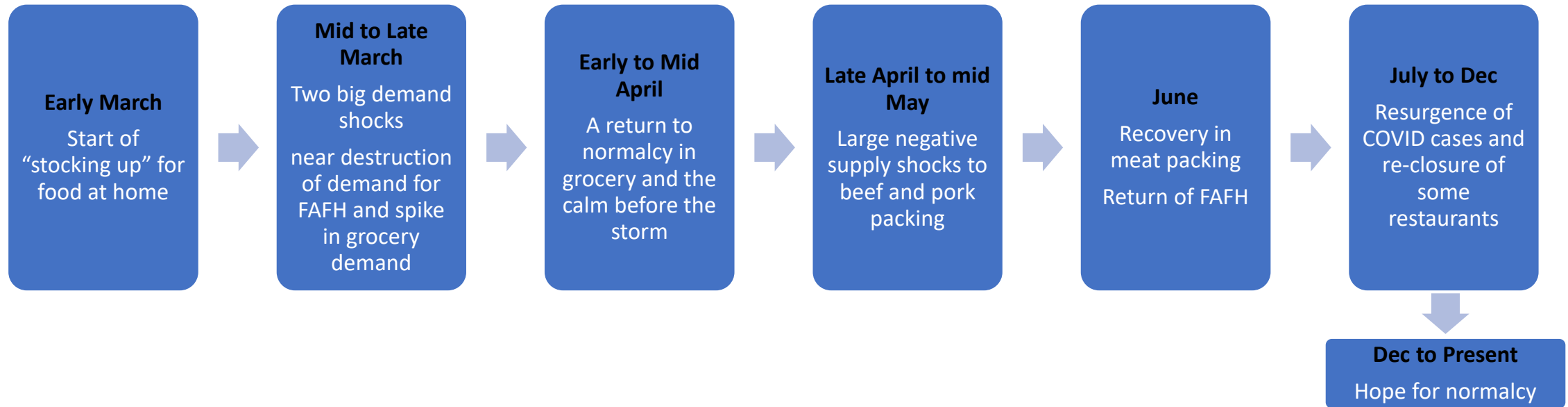
## Los Angeles Times

By MICHAEL R. BLOOD | ASSOCIATED PRESS

JULY 3, 2020 | 2:38 PM

# Coronavirus closures rock California restaurants, again





**The Washington Post**

National

# ‘The weapon that will end the war’: First coronavirus vaccine shots given outside trials in U.S.

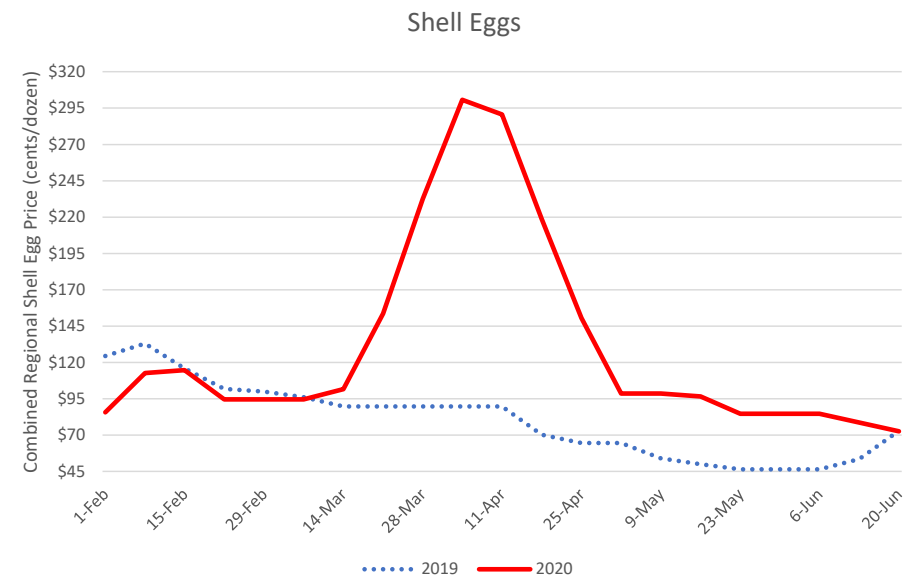
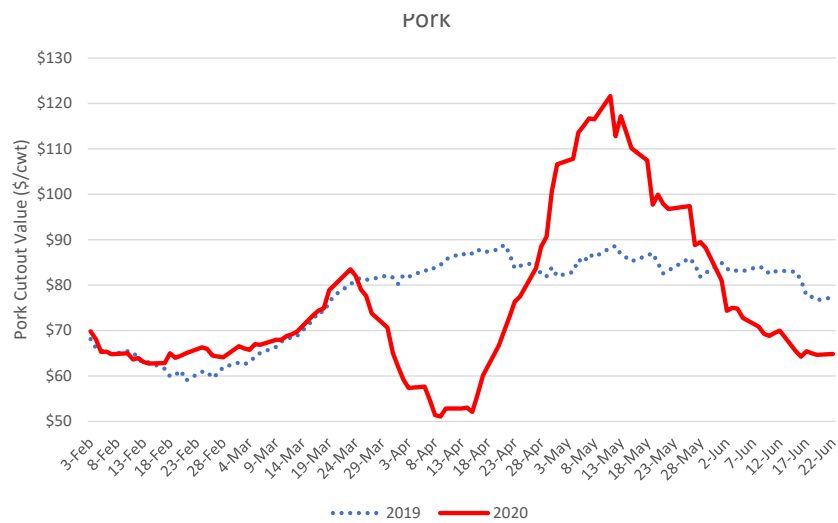
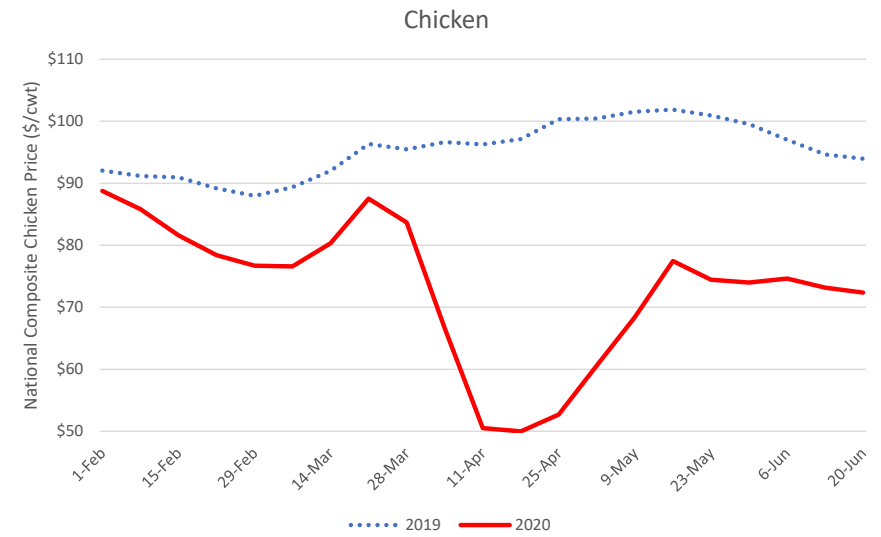
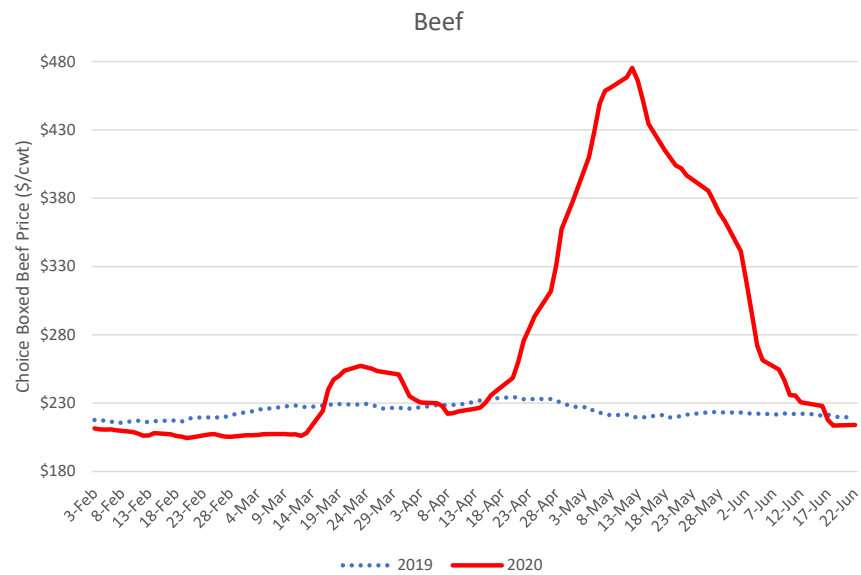
By [Ben Guarino](#), [Ariana Eunjung Cha](#), [Josh Wood](#) and [Griff Witte](#)

Dec. 14, 2020 at 5:50 p.m. EST

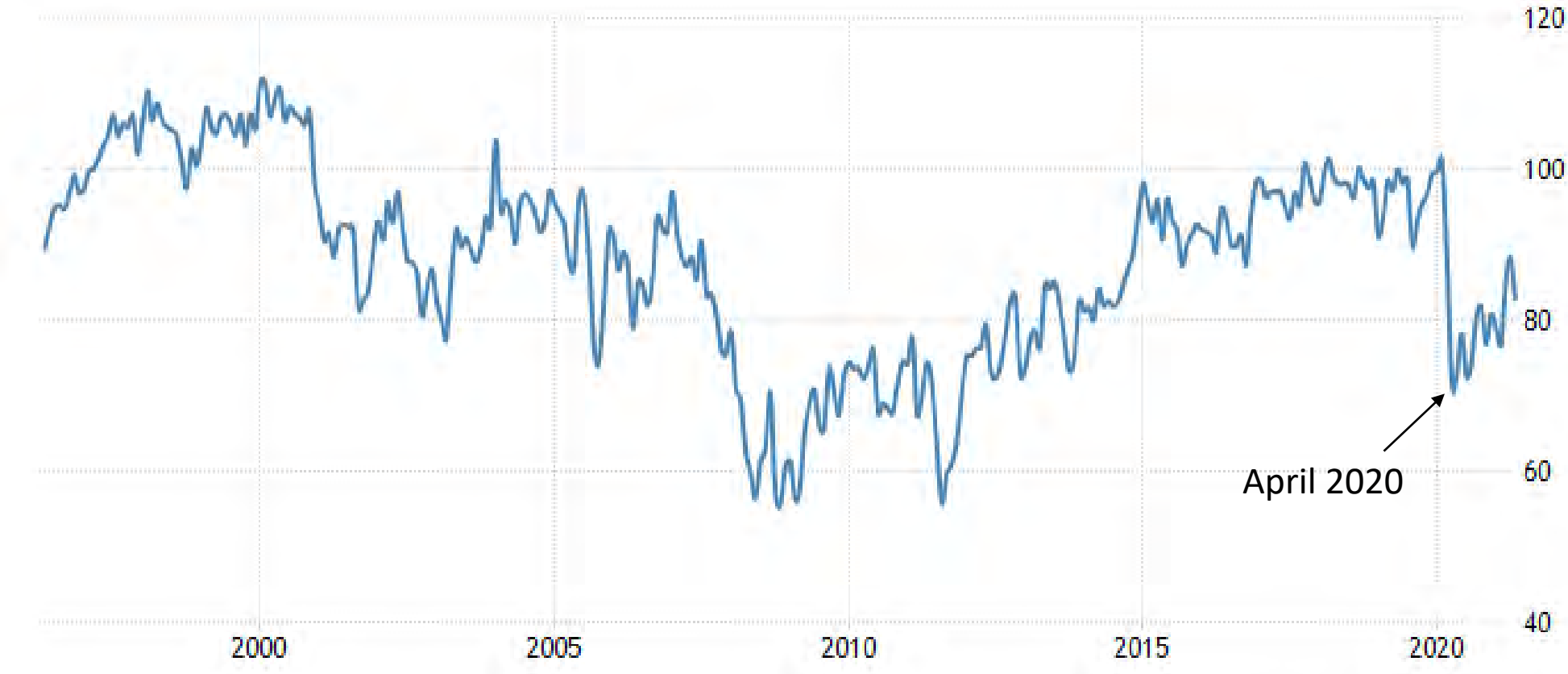




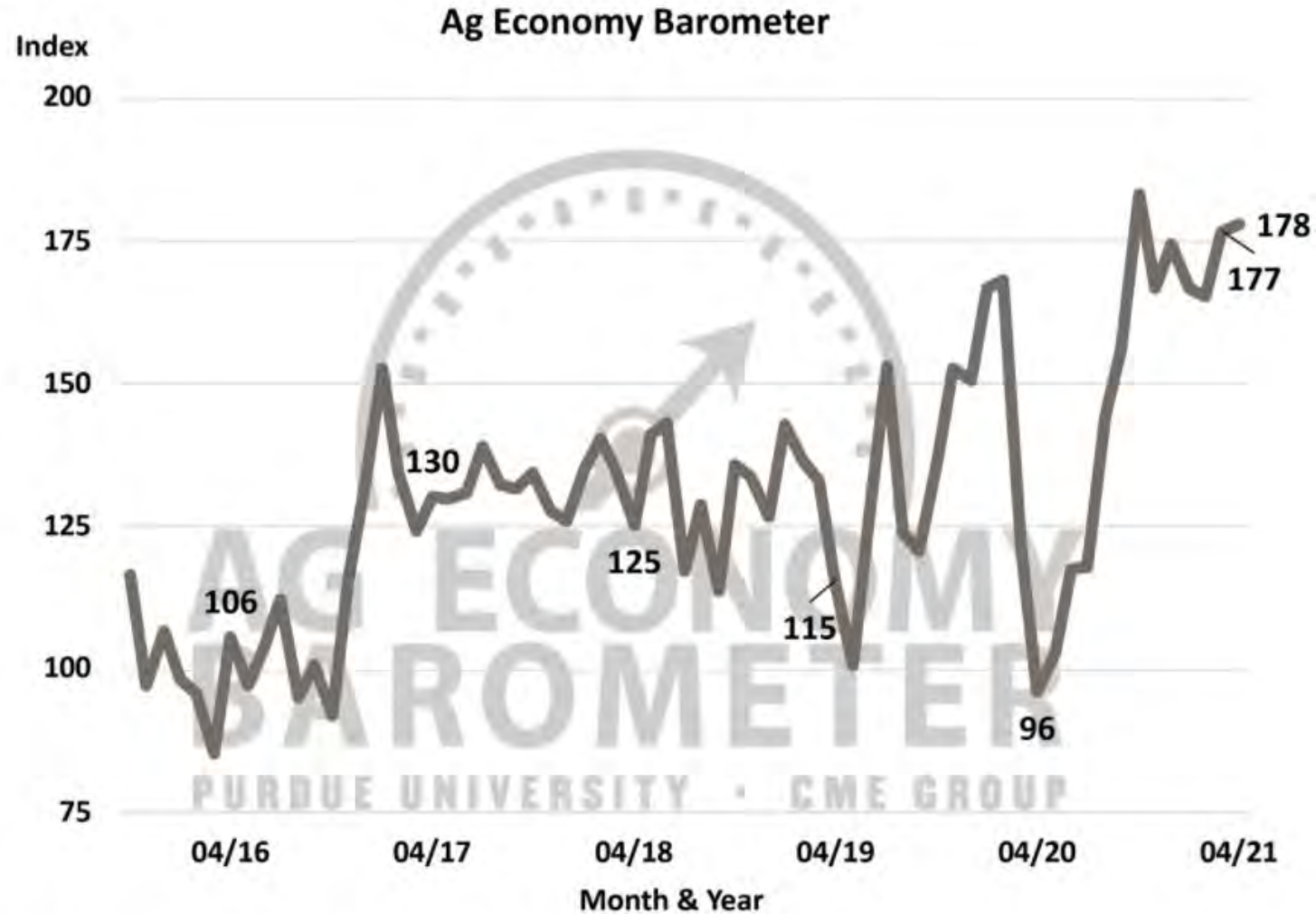
# Shocks as seen through wholesale prices



# Index of Consumer Sentiment



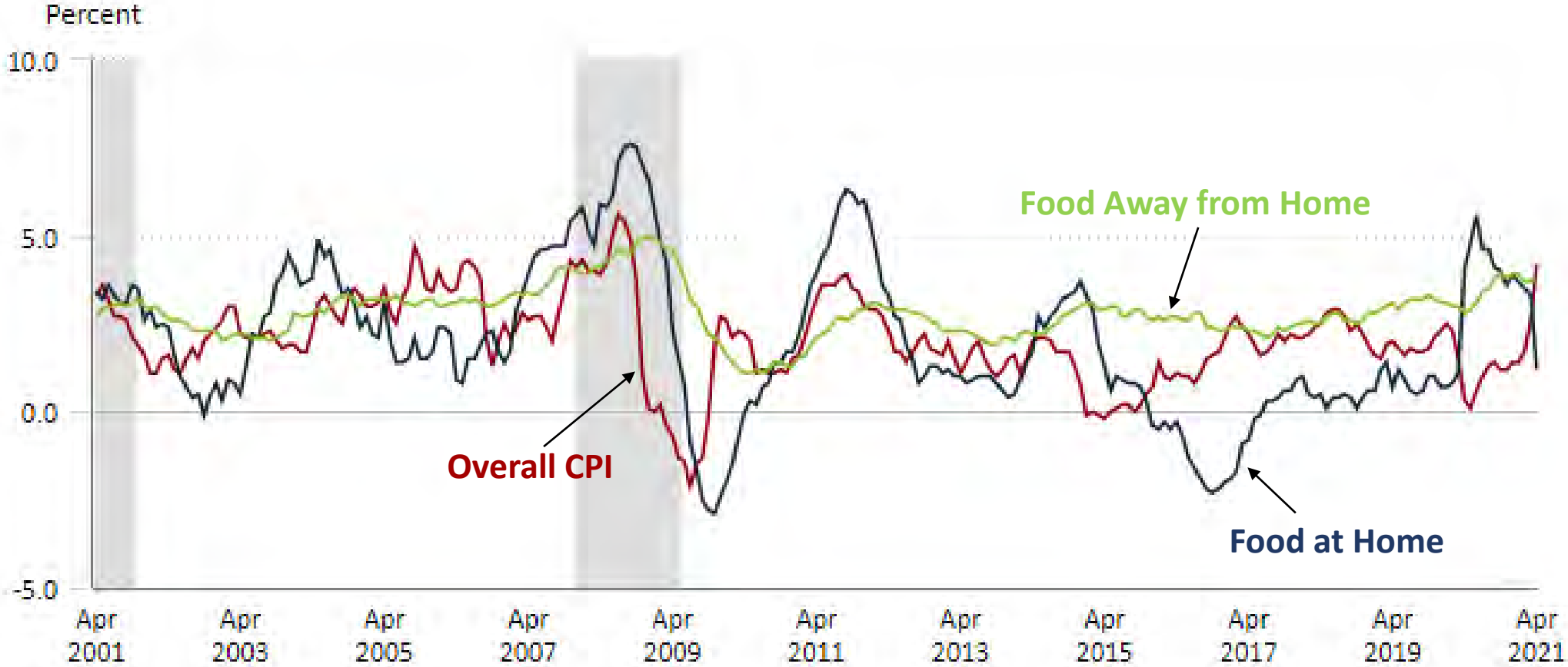
# Index of Farmer Sentiment



Source: Purdue University Center for Commercial Agriculture, Producer Survey, April 2021

Source: Purdue University, <https://ag.purdue.edu/commercialag/ageconomybarometer/>

# Annual Change in Retail Food Prices



Source: Bureau of Labor Statistics

# Money Supply



# Personal Savings Rate



# Inflation Expectations

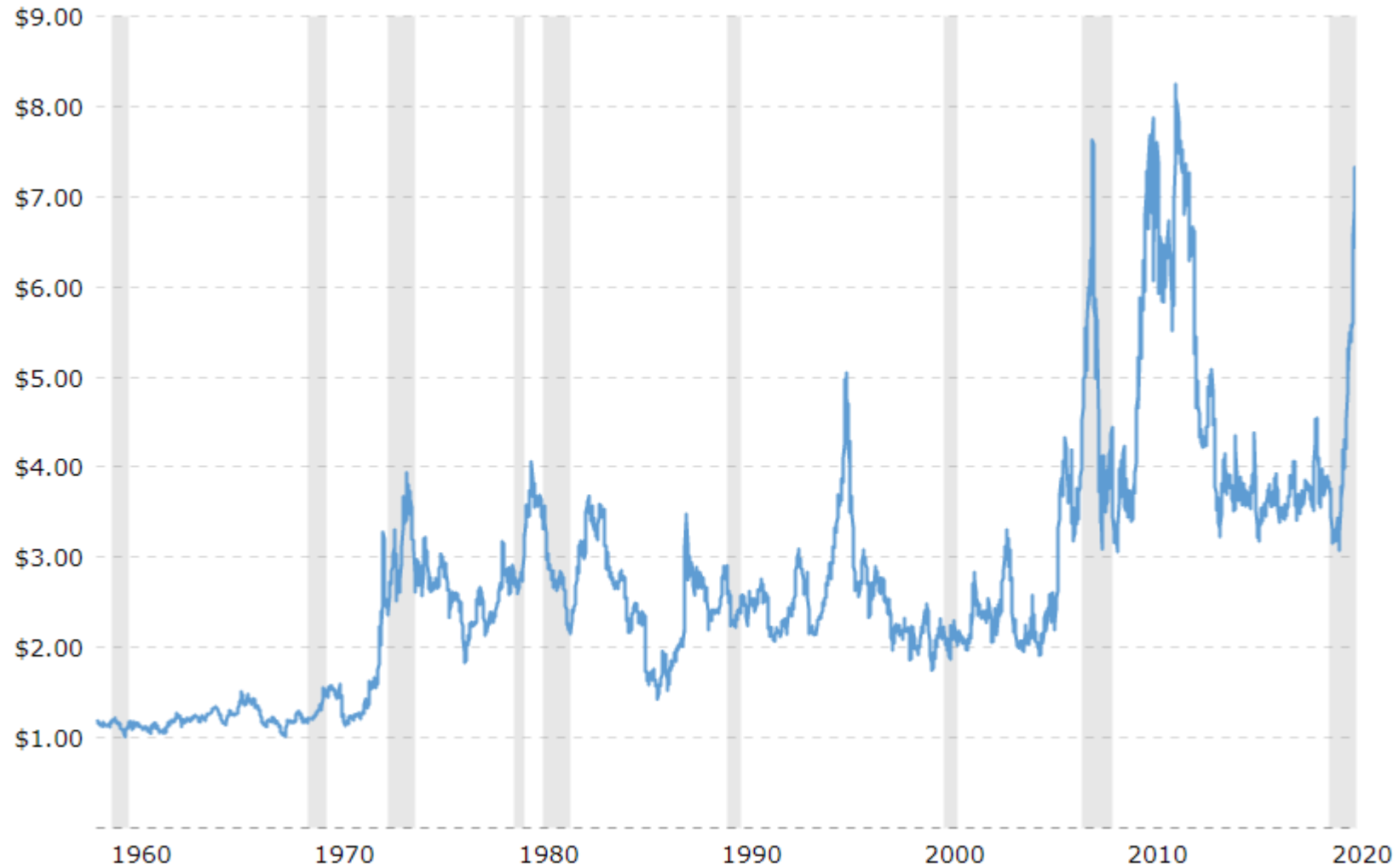


# Global Commodity Prices



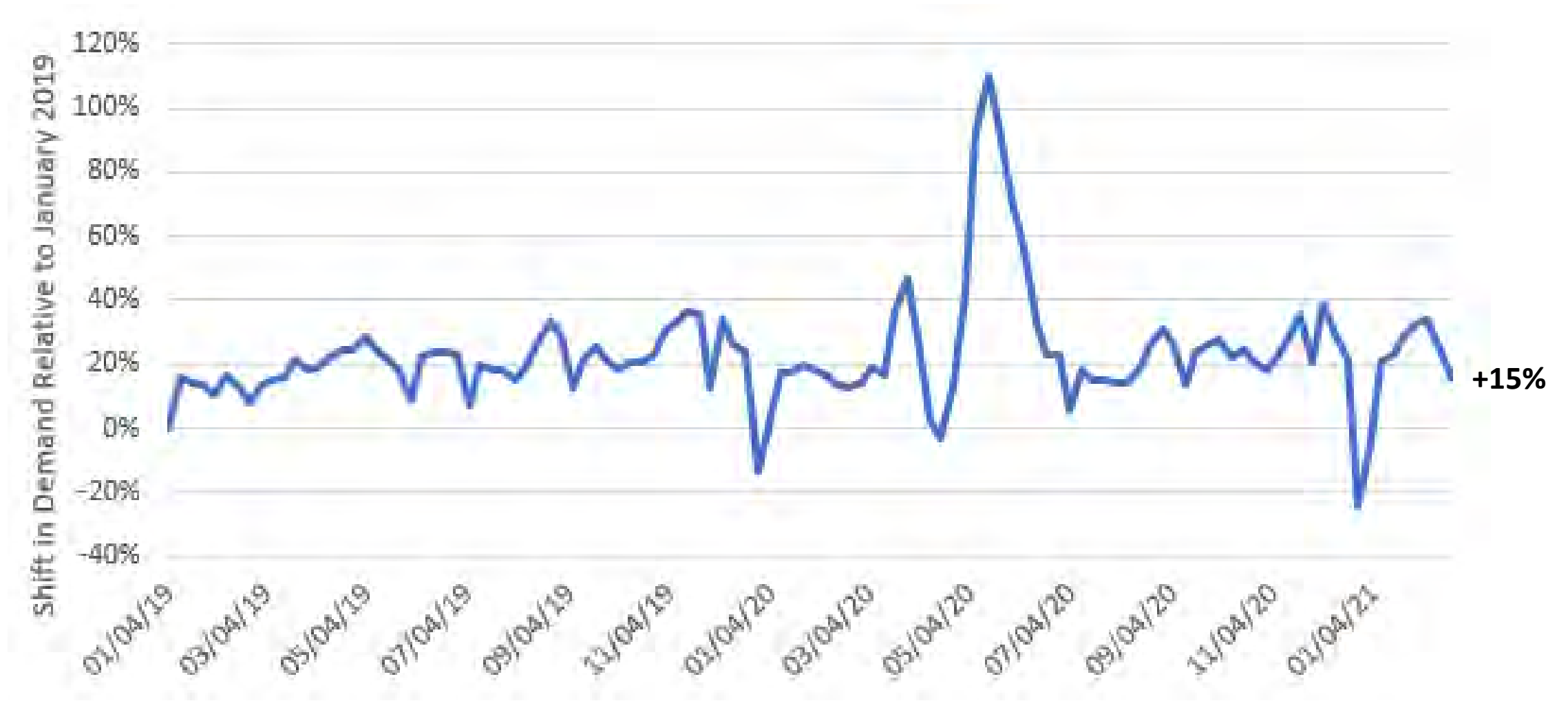


# Corn Prices



**Is Consumer Demand Changing?**

# Change in Wholesale Beef Demand



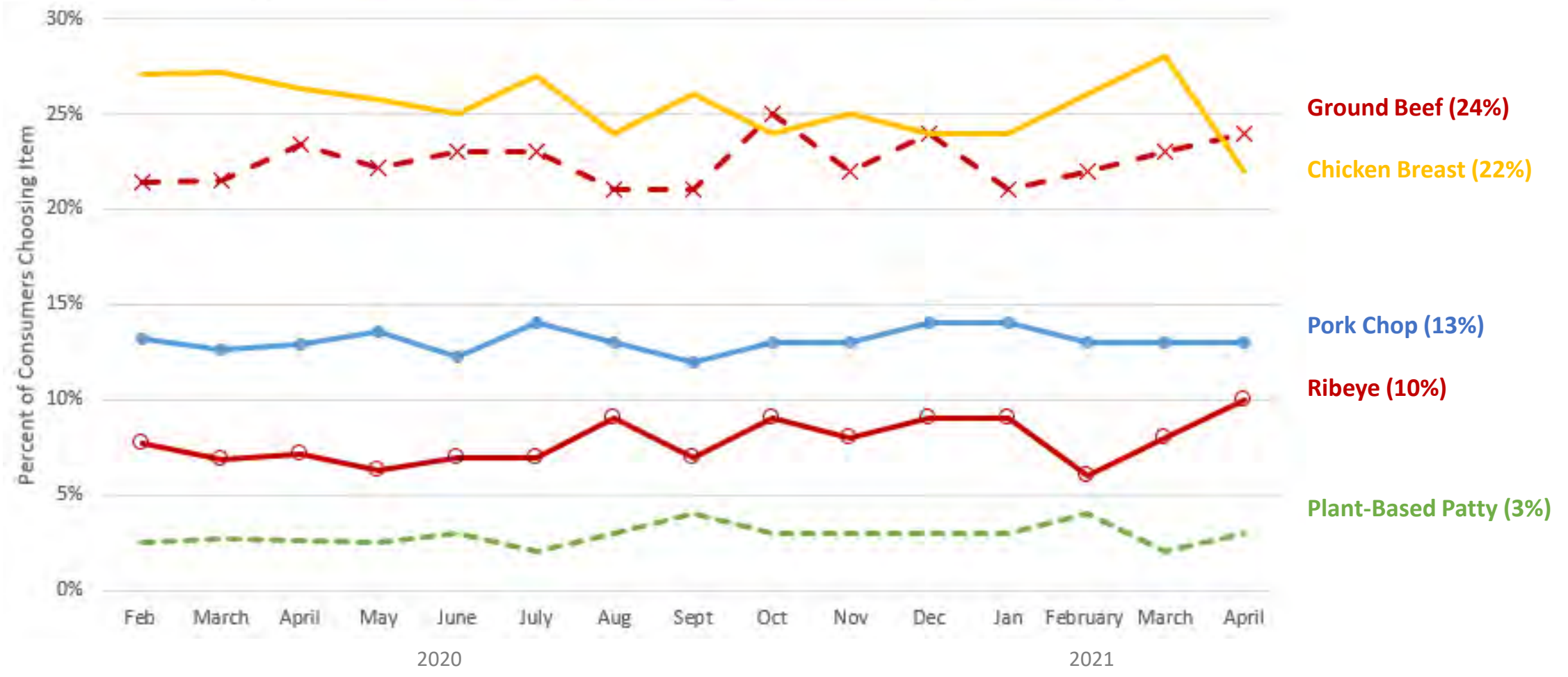
# Change in Wholesale Pork Supply and Demand



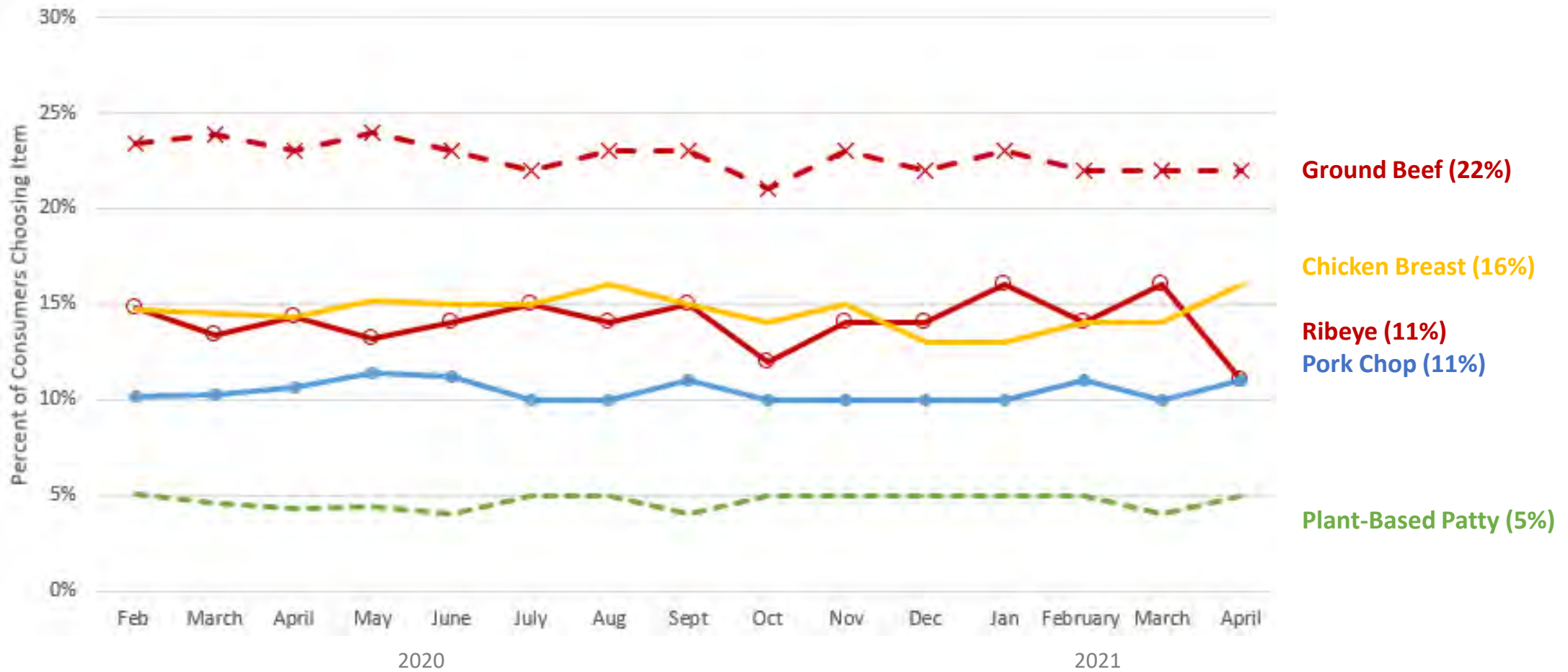
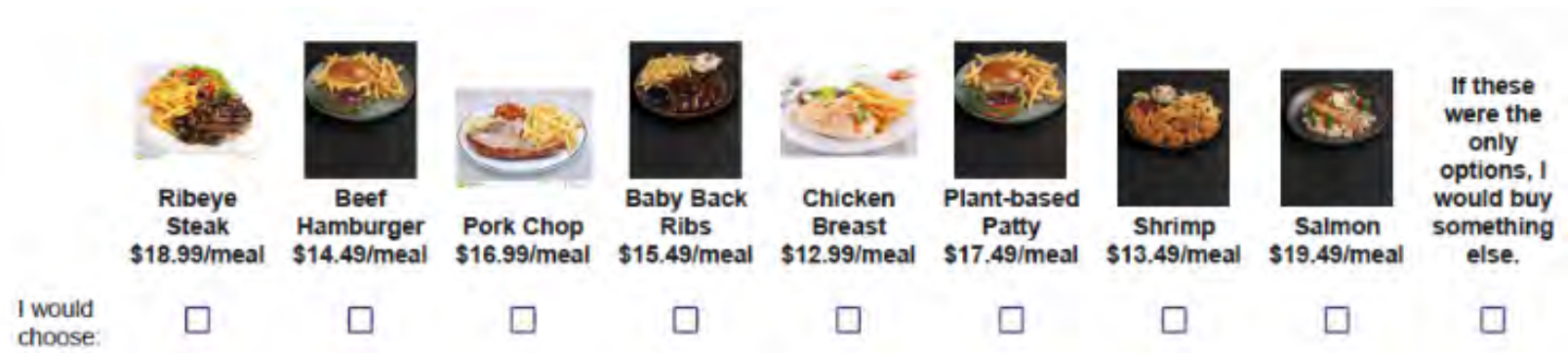


If these were the only options, I would buy something else.

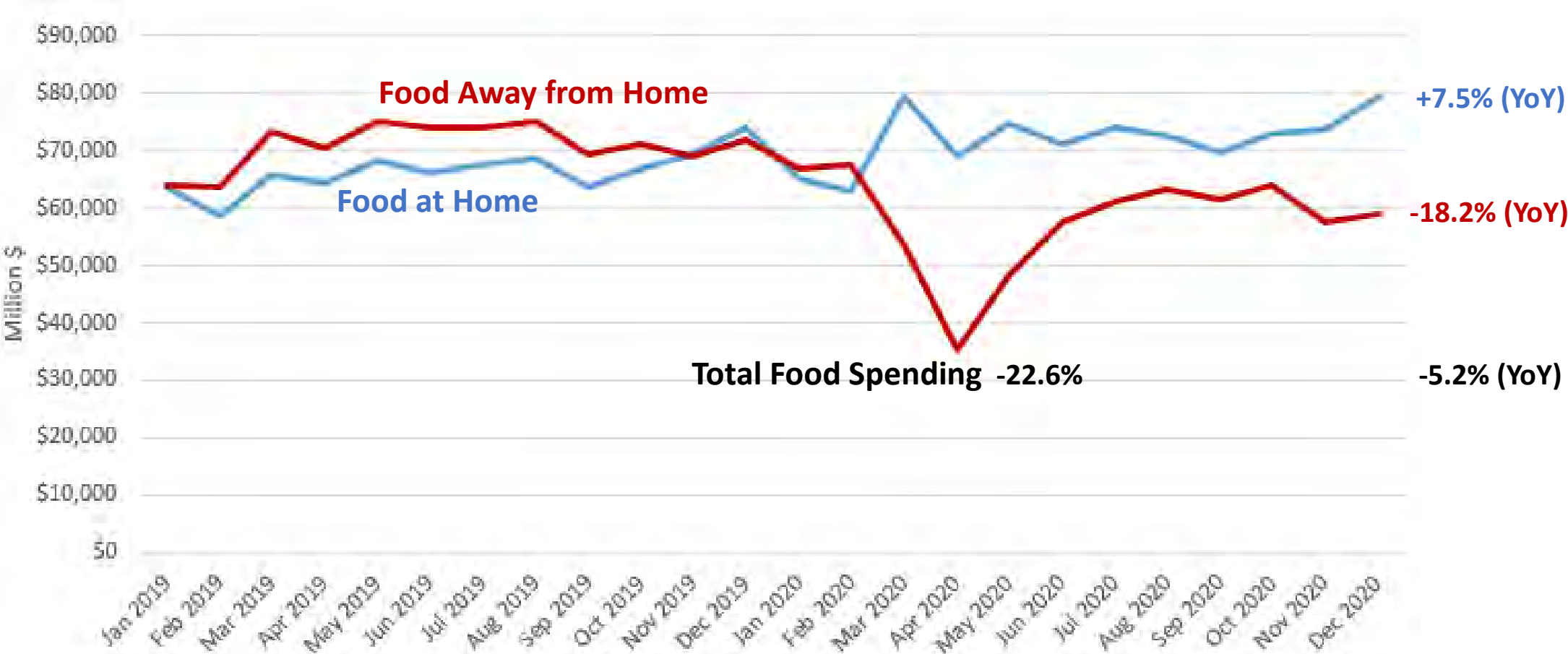
I would choose:



Source: Tonsor and Lusk, Meat Demand Monitor: <https://agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>



# Aggregate Consumer Food Spending

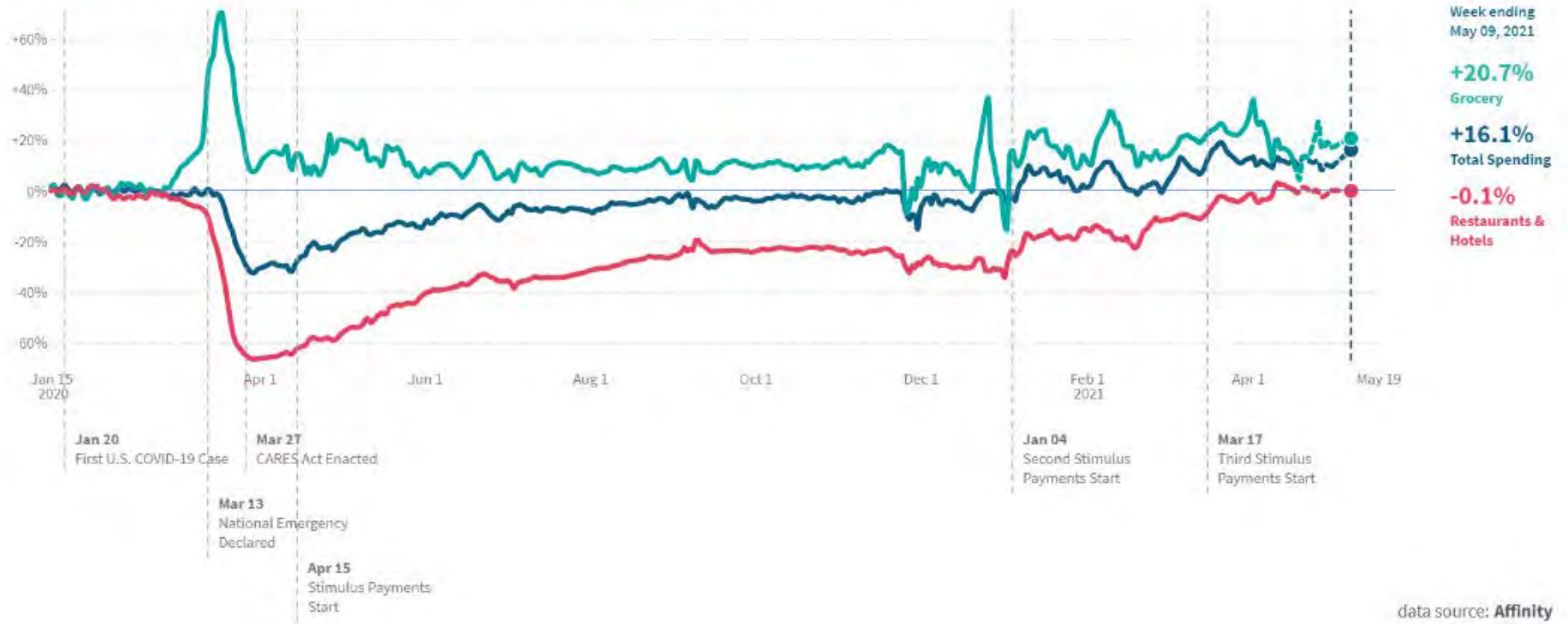


Source: USDA Economic Research Service

# Consumer Spending – Debit and Credit Cards

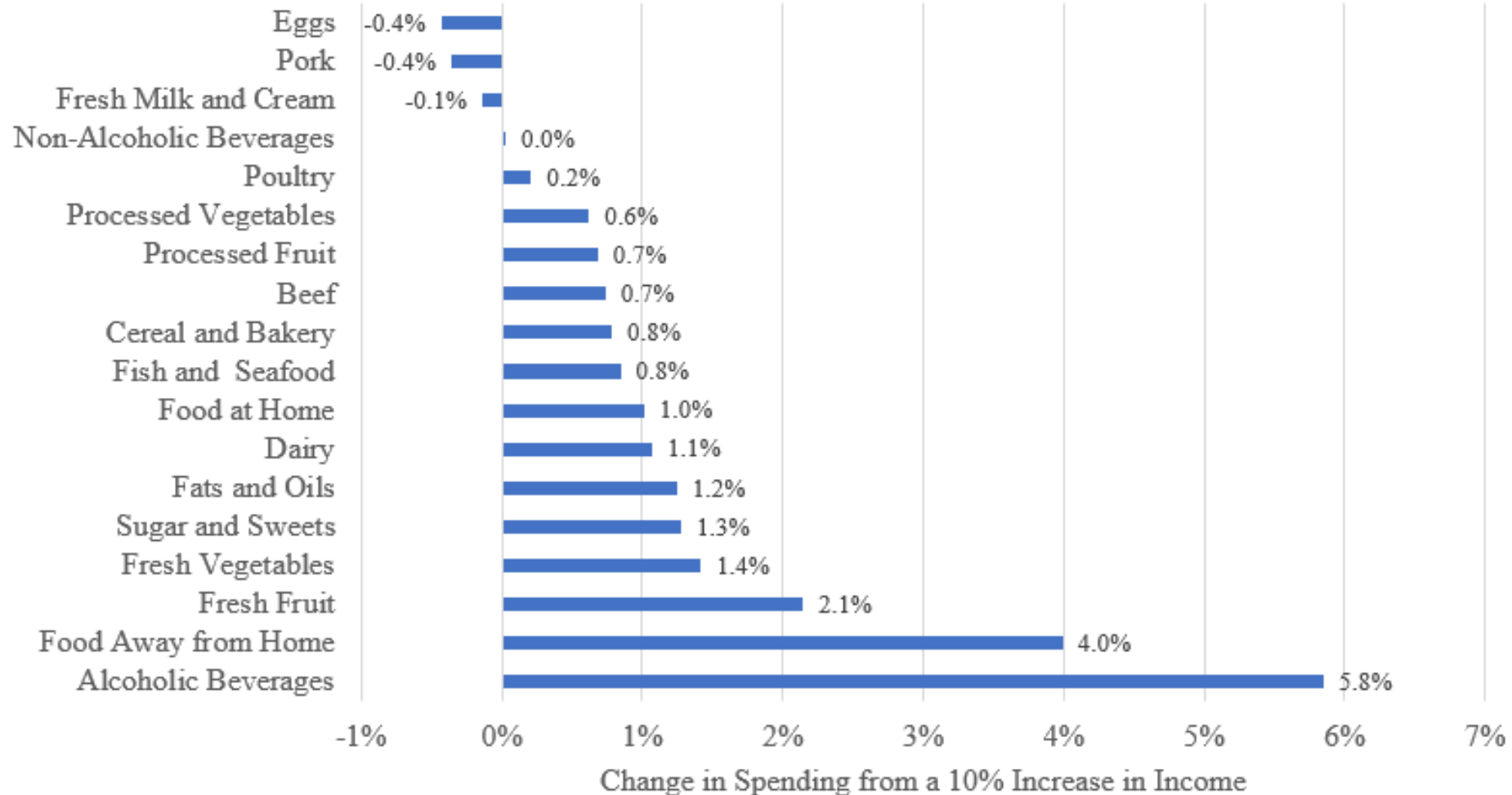
## Percent Change in All Consumer Spending\*

In the United States, as of May 09, 2021, total spending by all consumers increased by 16.1% compared to January 2020.





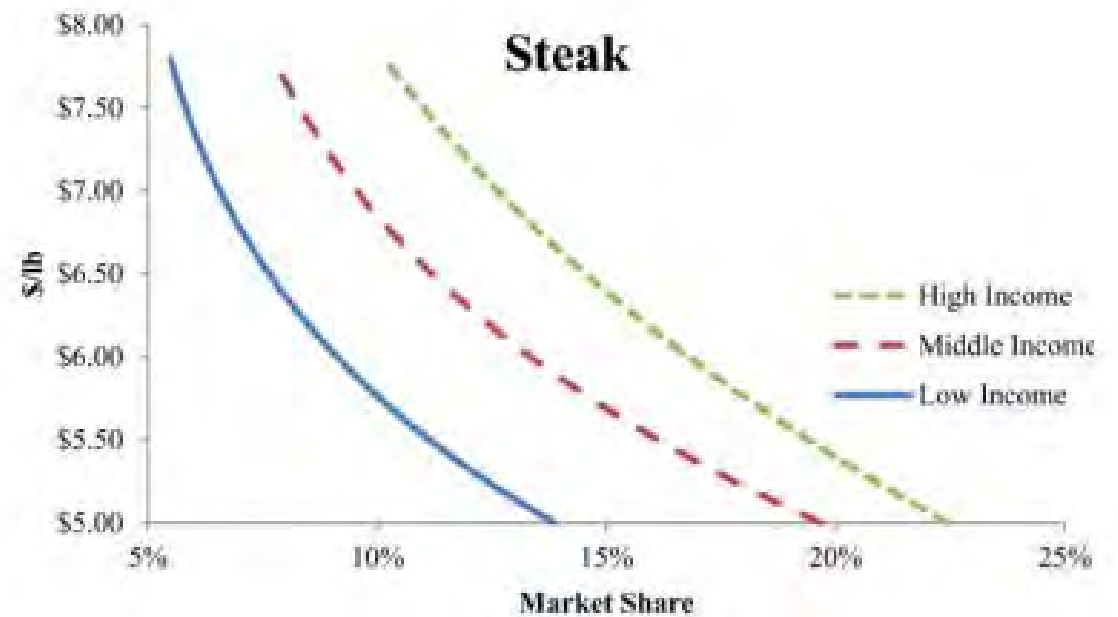
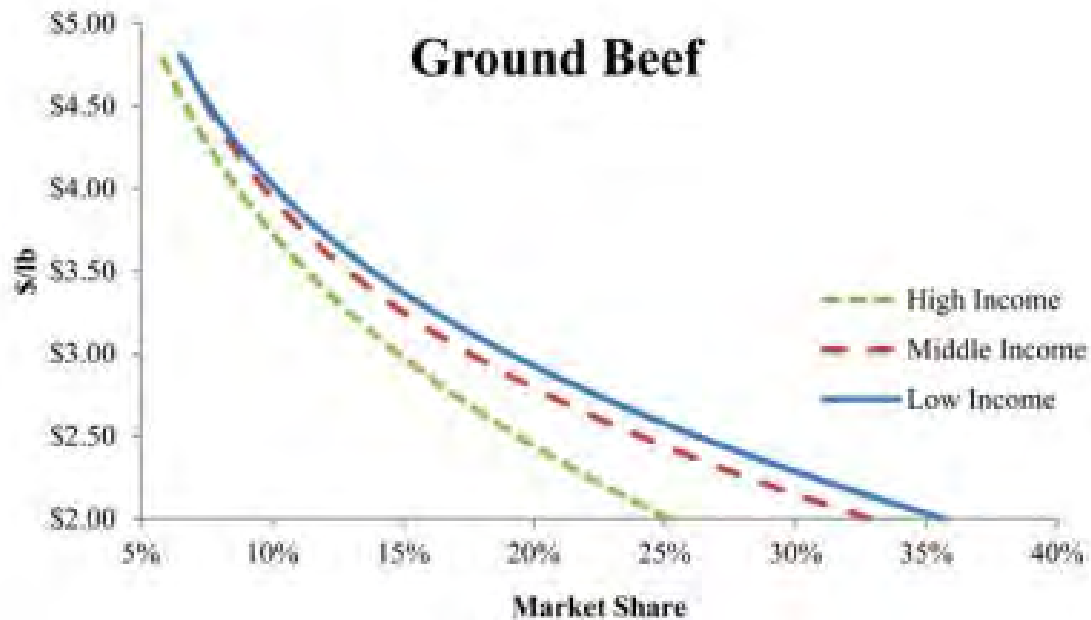
# Expected spending changes from 10%↑ in income



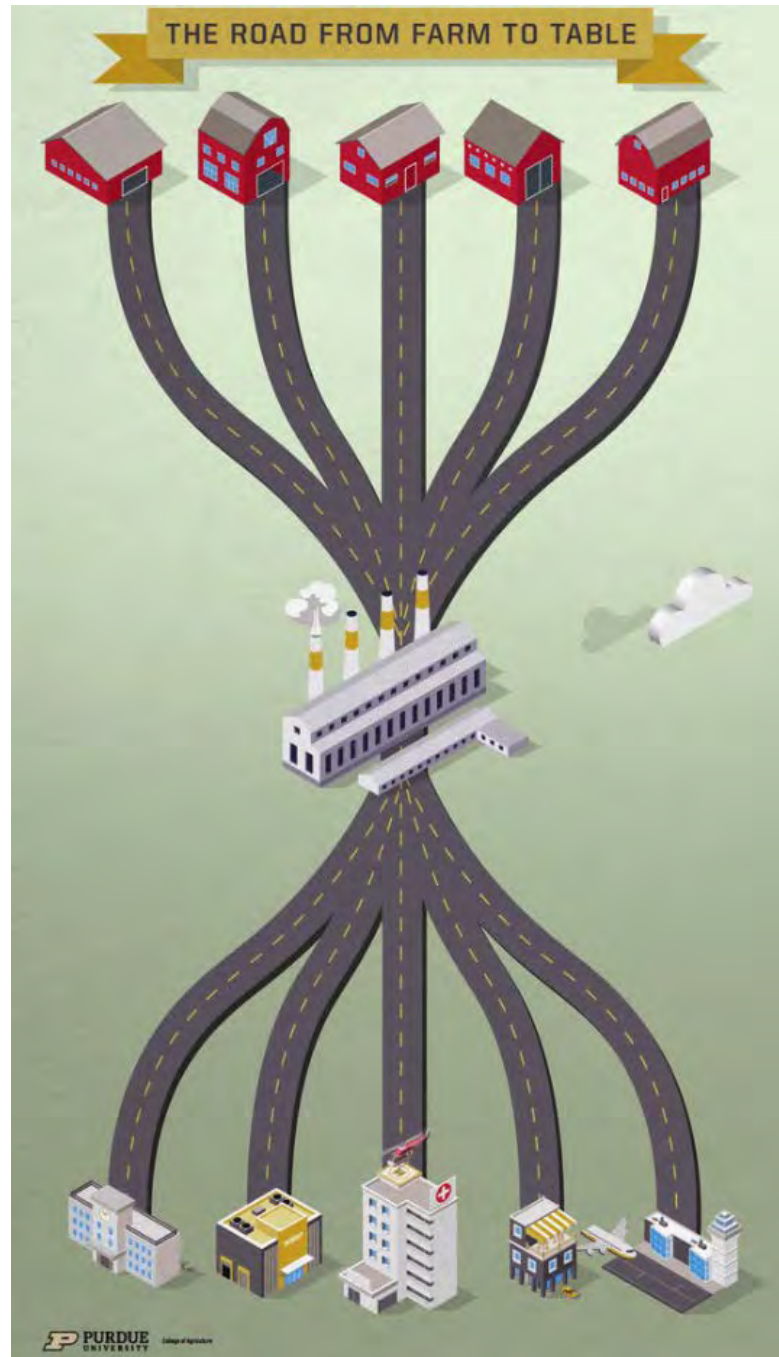
# Income and Demand for Beef Cuts

Which of the following would you choose?

	Chicken Breast \$1.75 lb	Chicken Wing \$1.75 lb	Pork Chop \$2.25 lb	Deli Ham \$4.15 lb	Hamburger \$5.00 lb	Beef Steak \$8.00 lb	Beans and Rice \$0.50 lb	Tomato-Pasta \$4.00 lb	If these were the only options, I would buy something else.
I would choose...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Vulnerabilities



# Asset fixity leads to farm surplus amidst retail stockouts



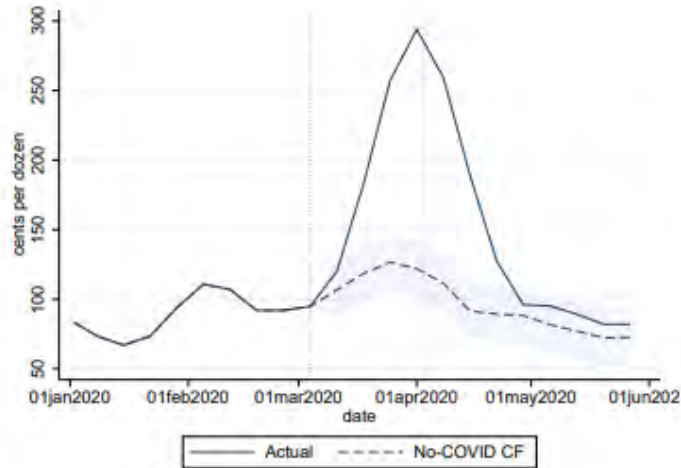
VS.



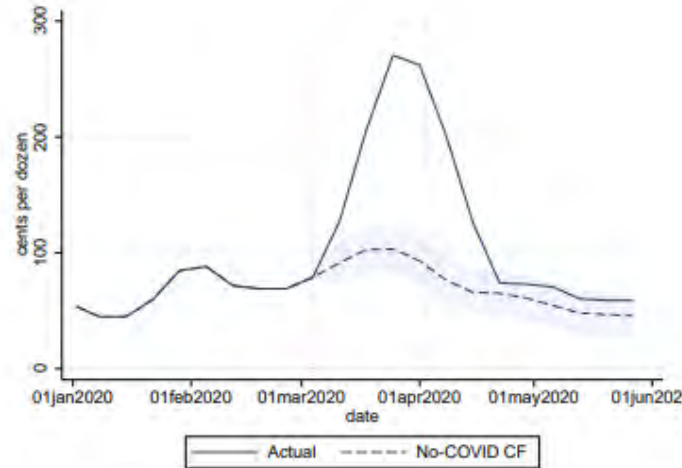
VS.



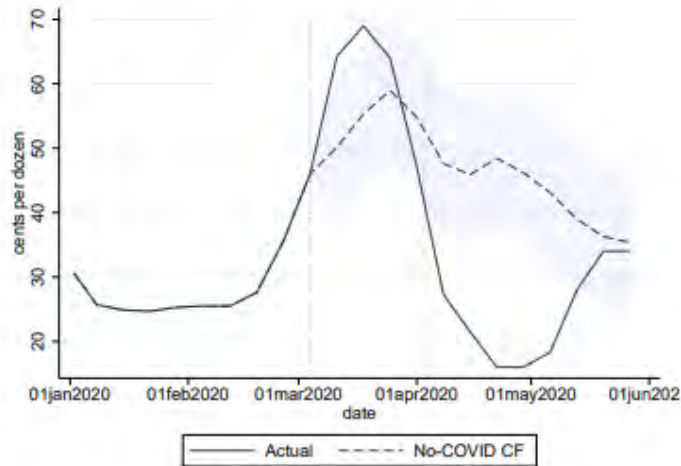
# Food is not easily fungible across different markets



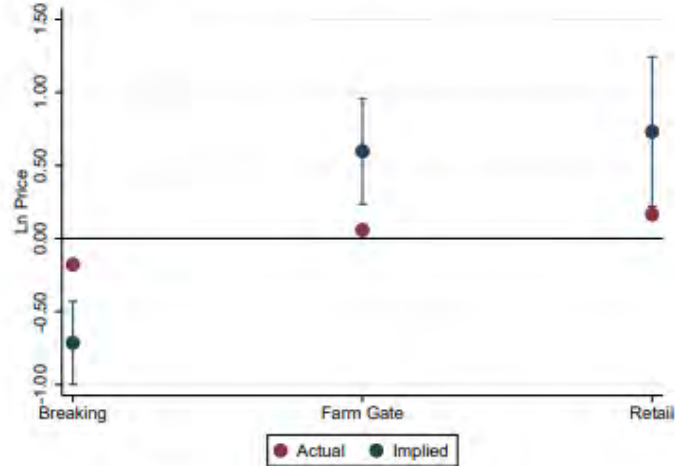
(a) Retail Price Impact



(b) Farm-Gate Price Impact



(c) Breaking Price Impact



(d) Impact of Relaxed Regulation



VS.

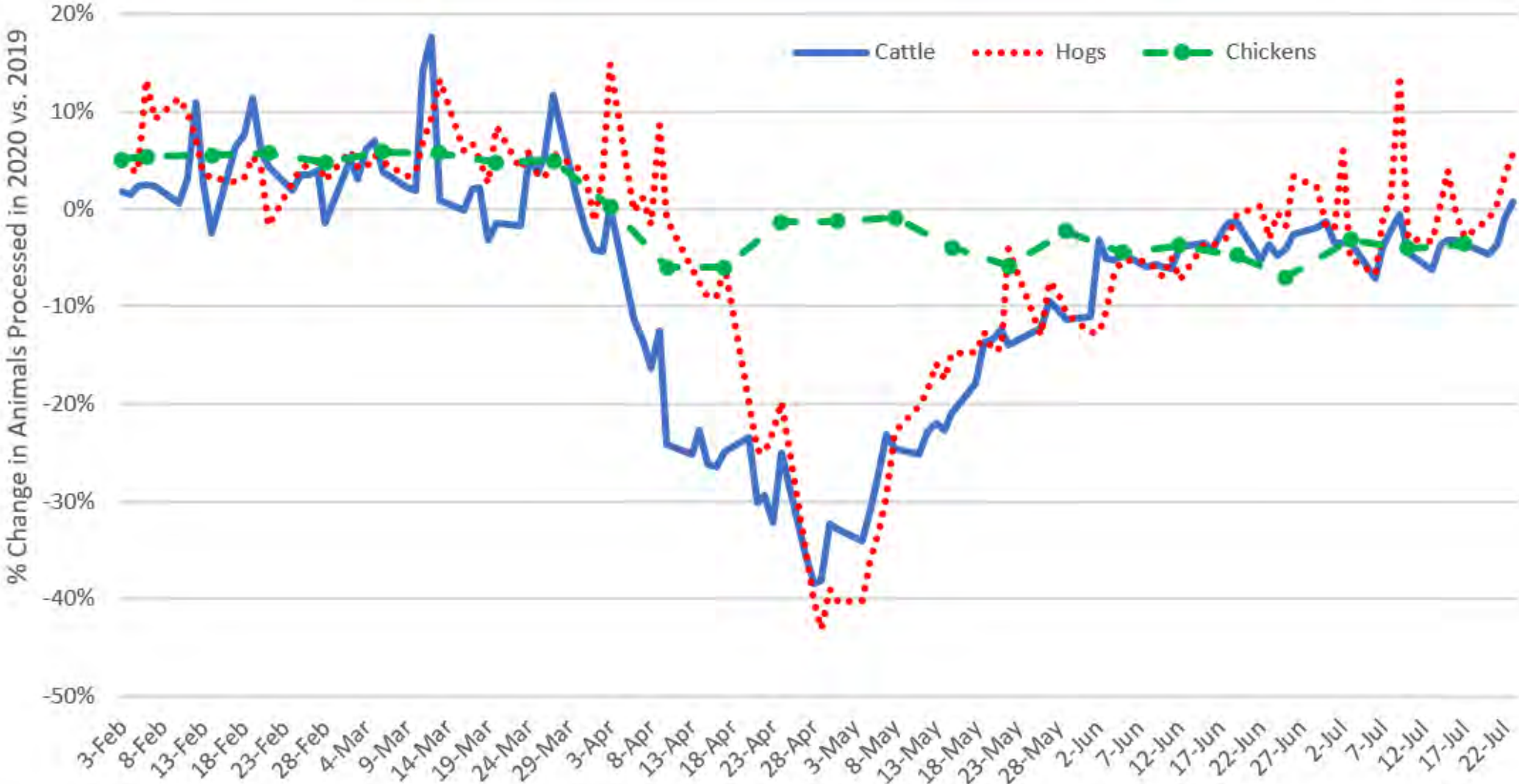


# Meat packing is concentrated

- 10 plants slaughter **63% of all cattle**
- 15 plants slaughter **59% of all hogs**



# Weekday Processing Volumes



Source: Lusk calculations based on USDA data

# What Does it Mean to be Resilient?



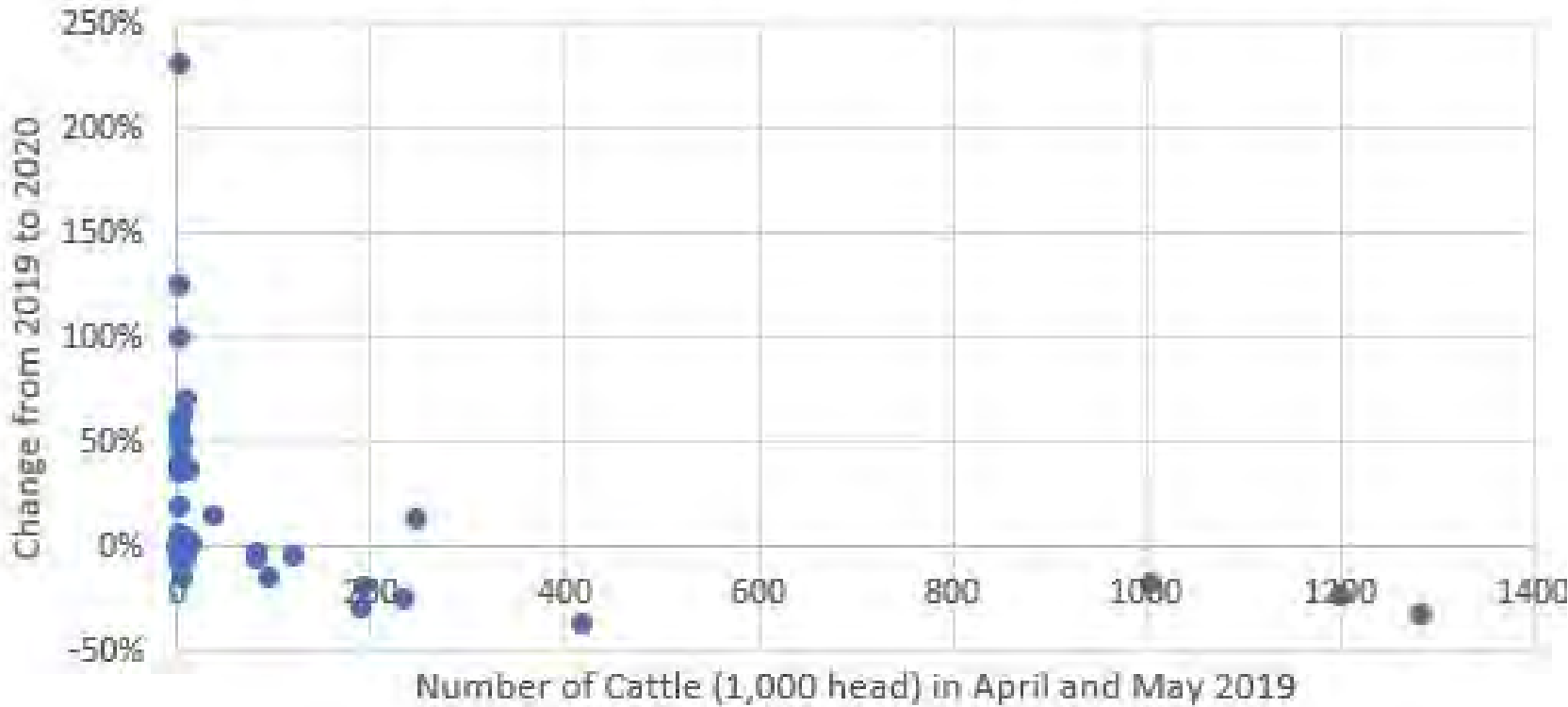


# Increased resiliency – no easy answers

- More small and medium processors?
- More local/regional?
- Automation
- Excess capacity
- Increased redundancy

# Size and Resiliency

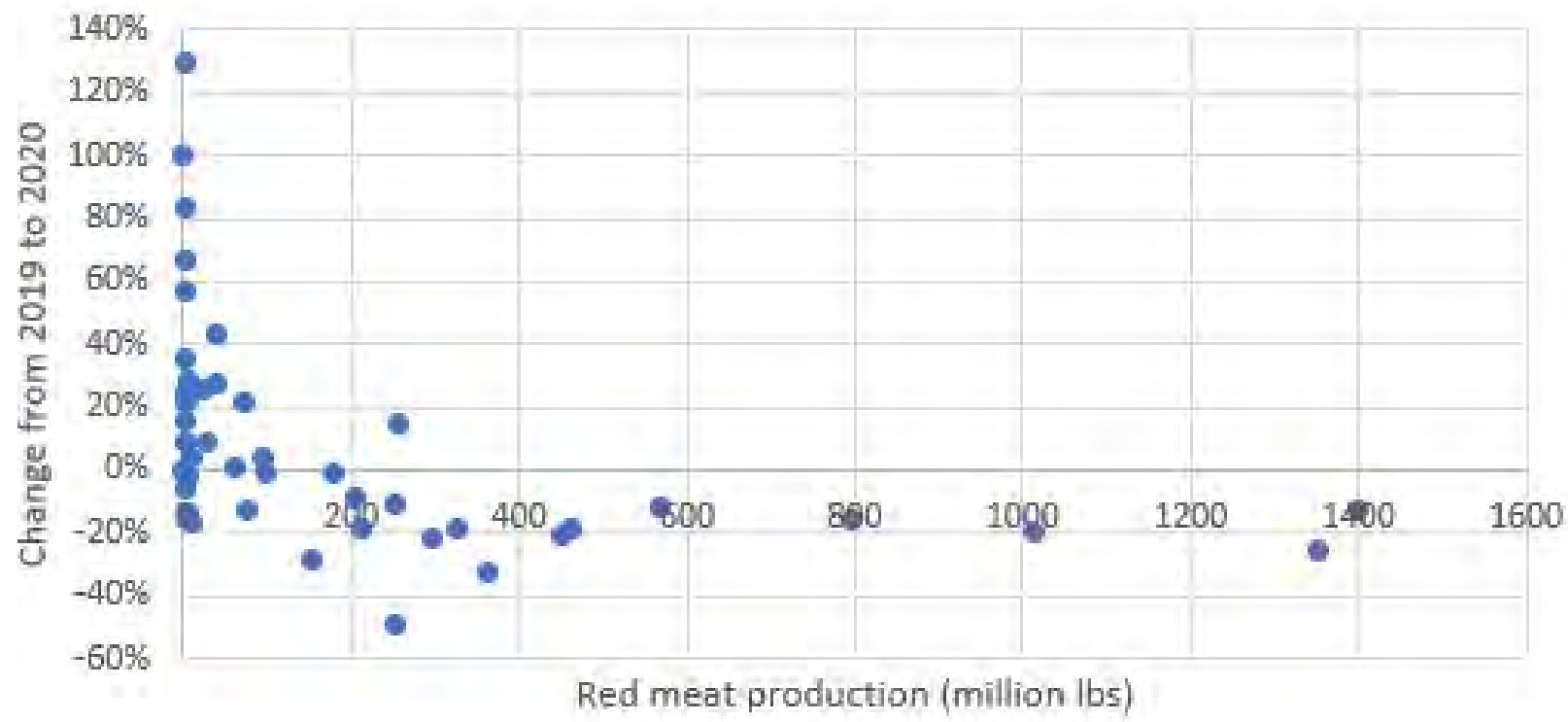
Comparison of State Cattle Slaughter in April and May



Source: Lusk calculations based on USDA data

# Size and Resiliency

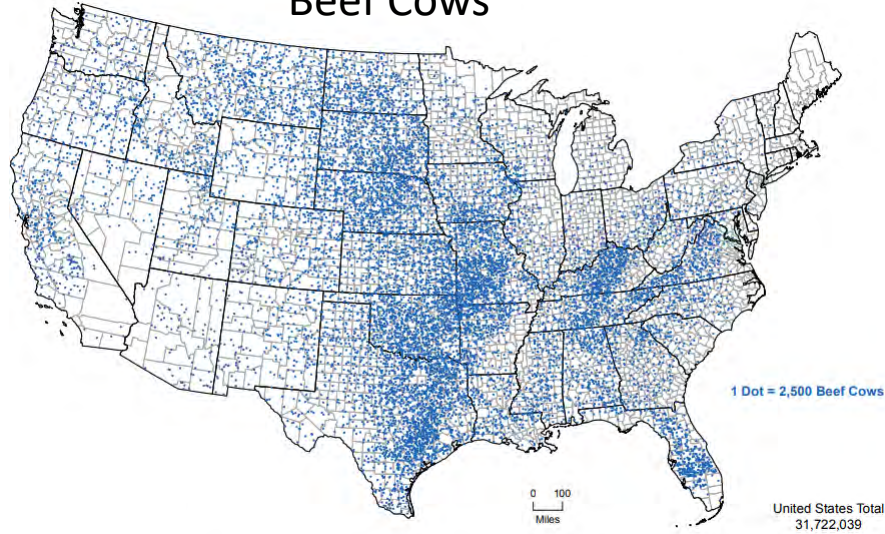
Comparison of Red Meat Production in April and May



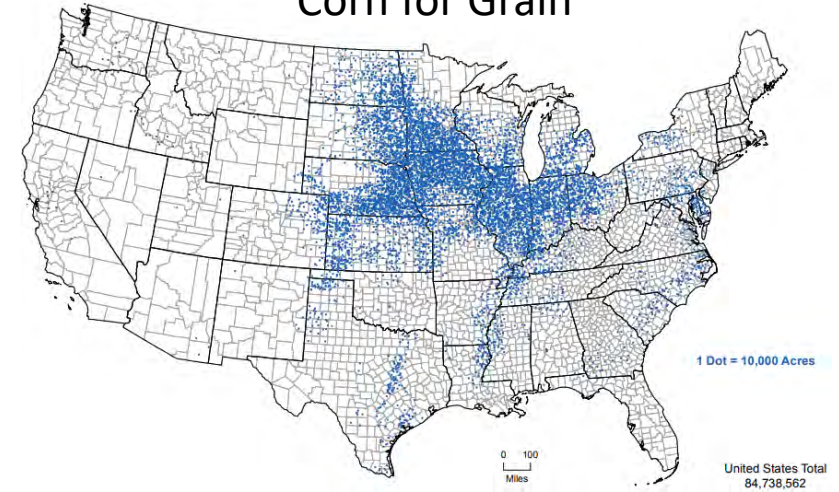
Source: Lusk calculations based on USDA data

# Food production is location- and time-specific

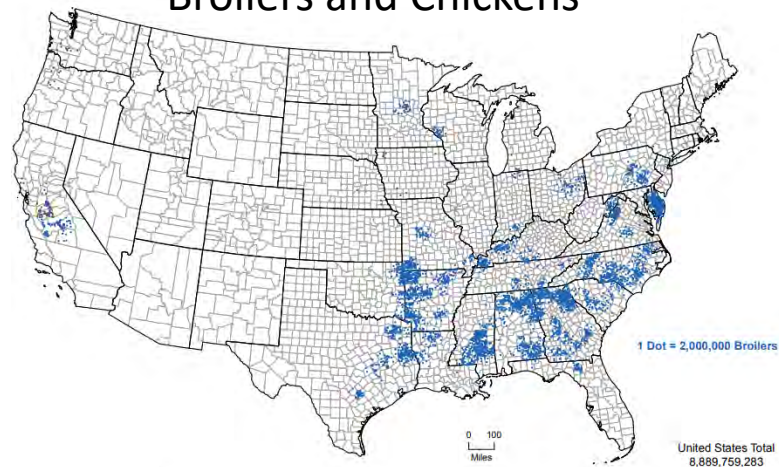
## Beef Cows



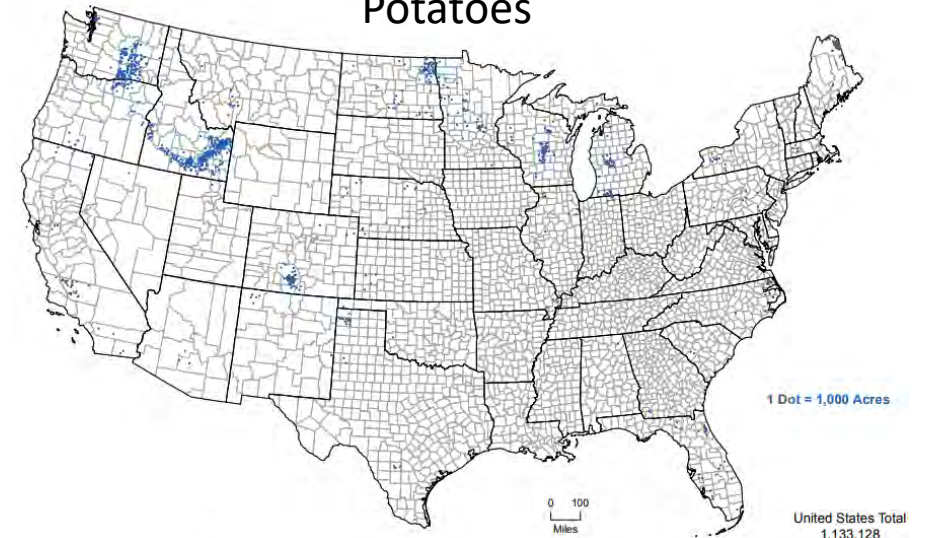
## Corn for Grain



## Broilers and Chickens

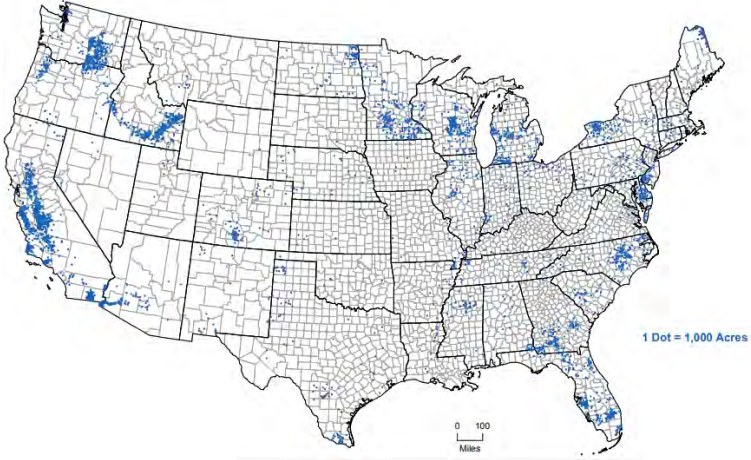


## Potatoes

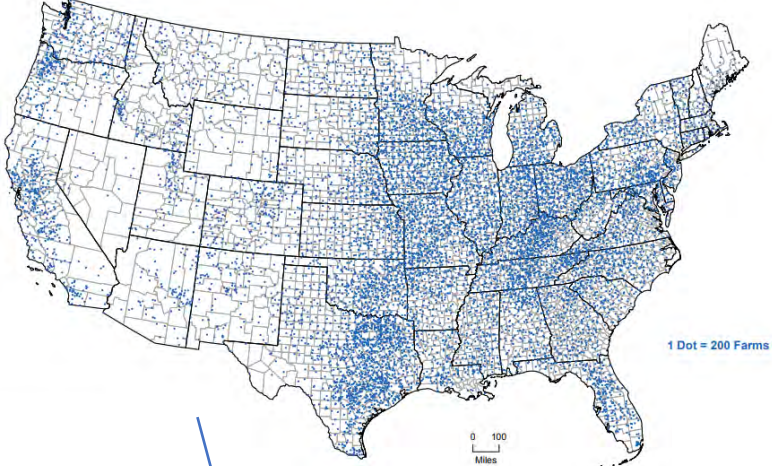


# Food and farm vulnerability index

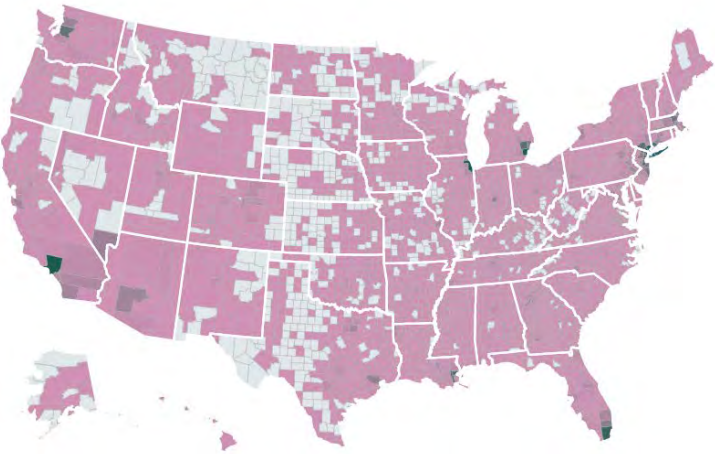
Vegetable Production



Number of Farms

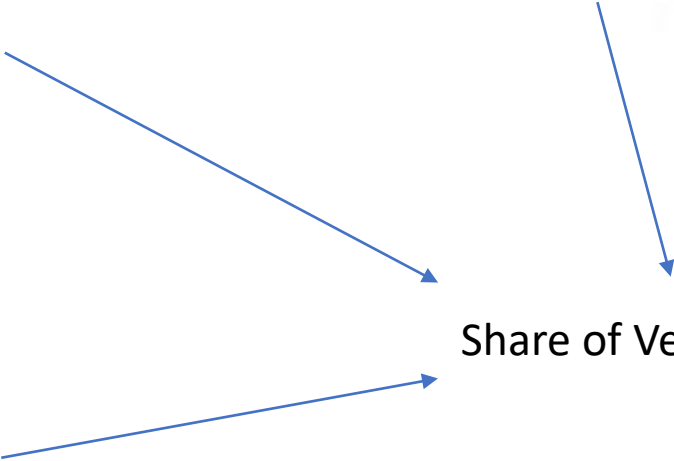


Confirmed COVID Cases

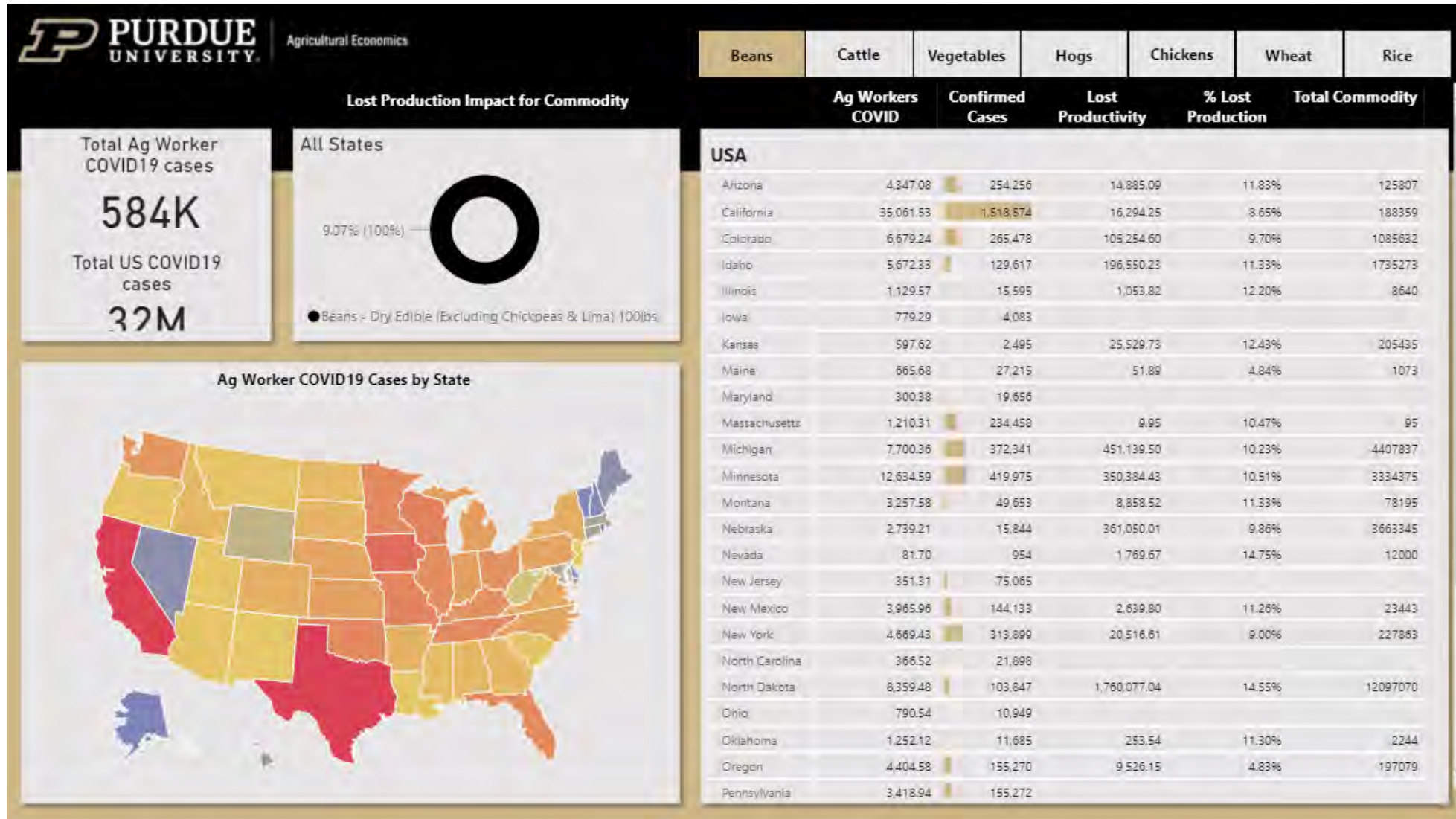


1 CONFIRMED CASES OF COVID-19 26,000

Share of Vegetable Production at Risk



# Food and farm vulnerability index



# Vulnerabilities to farm workers

as of March 31, 2021

Type	Cases	Case Incidence Rate		Deaths	Death Incidence Rate
<b>Producers</b>	329,031	9.55%		6,166	0.179%
<b>Hired Workers</b>	170,137	9.31%		2,969	0.160%
<b>Unpaid Workers</b>	202,902	9.39%		3,812	0.176%
<b>Migrant Workers</b>	27,223	9.01%		459	0.152%

- the incidence rate is higher among counties with more farm workers
- An estimated 0.069% reduction in annual labor supply
- A loss of \$309 million in agricultural output

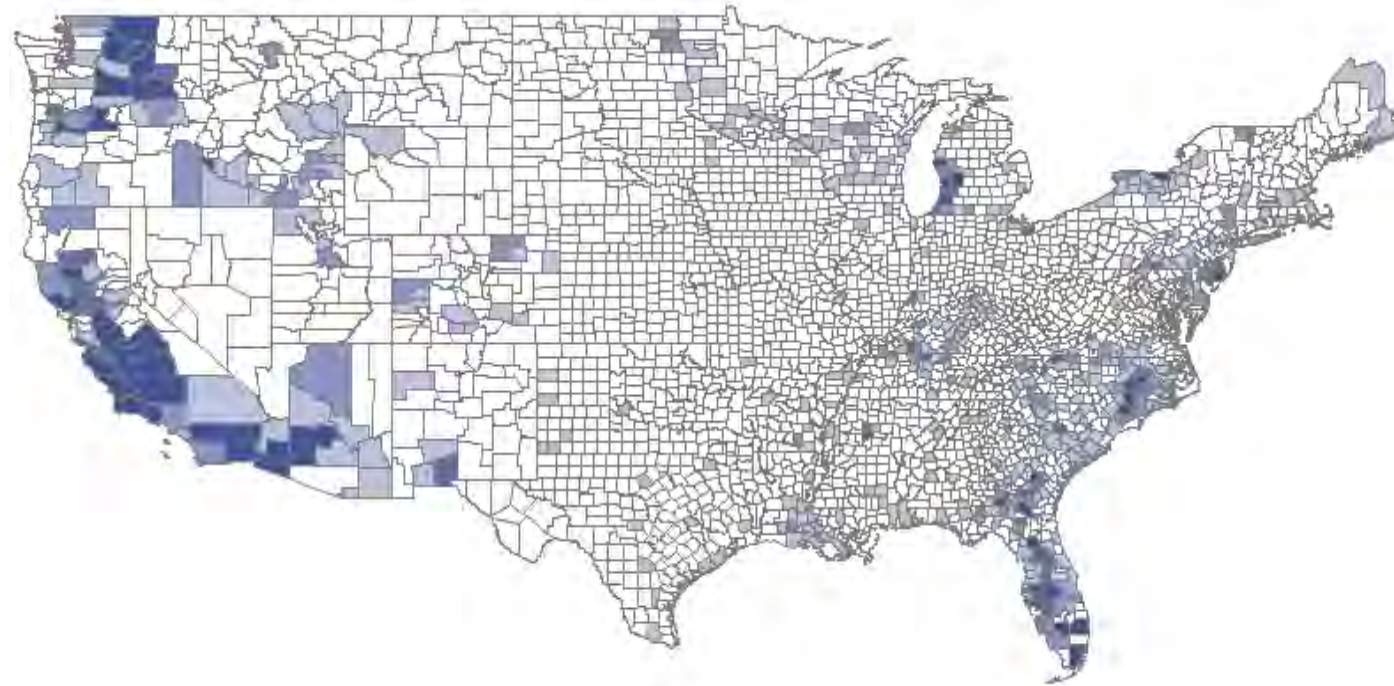
# Vulnerabilities to farm workers



Source: Lusk and Chandra <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0250621>



# Vulnerabilities to migrant farm workers



Number of Migrant Farm Worker Cases

□ <5    ■ 5-24    ■ 25-49    ■ 50-99    ■ 100+

as of March 31, 21

# Price Spreads and Marketing Margins



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USDA > MEDIA > PRESS RELEASES > USDA PROVIDES UPDATE ON INVESTIGATION FOLLOWING 2019 TYSON BEEF PLANT CLOSURE A...

## USDA Provides Update on Investigation Following 2019 Tyson Beef Plant Closure and COVID-19 Pandemic

**(Washington, D.C., July 22, 2020)** – As part of its commitment to ensuring fair and competitive markets for the livestock, meat and poultry industries, today the U.S. Department of Agriculture (USDA) released a [Boxed Beef and Fed Cattle Price Spread Investigation Report](#) on its ongoing boxed beef and fed cattle price spread investigation.

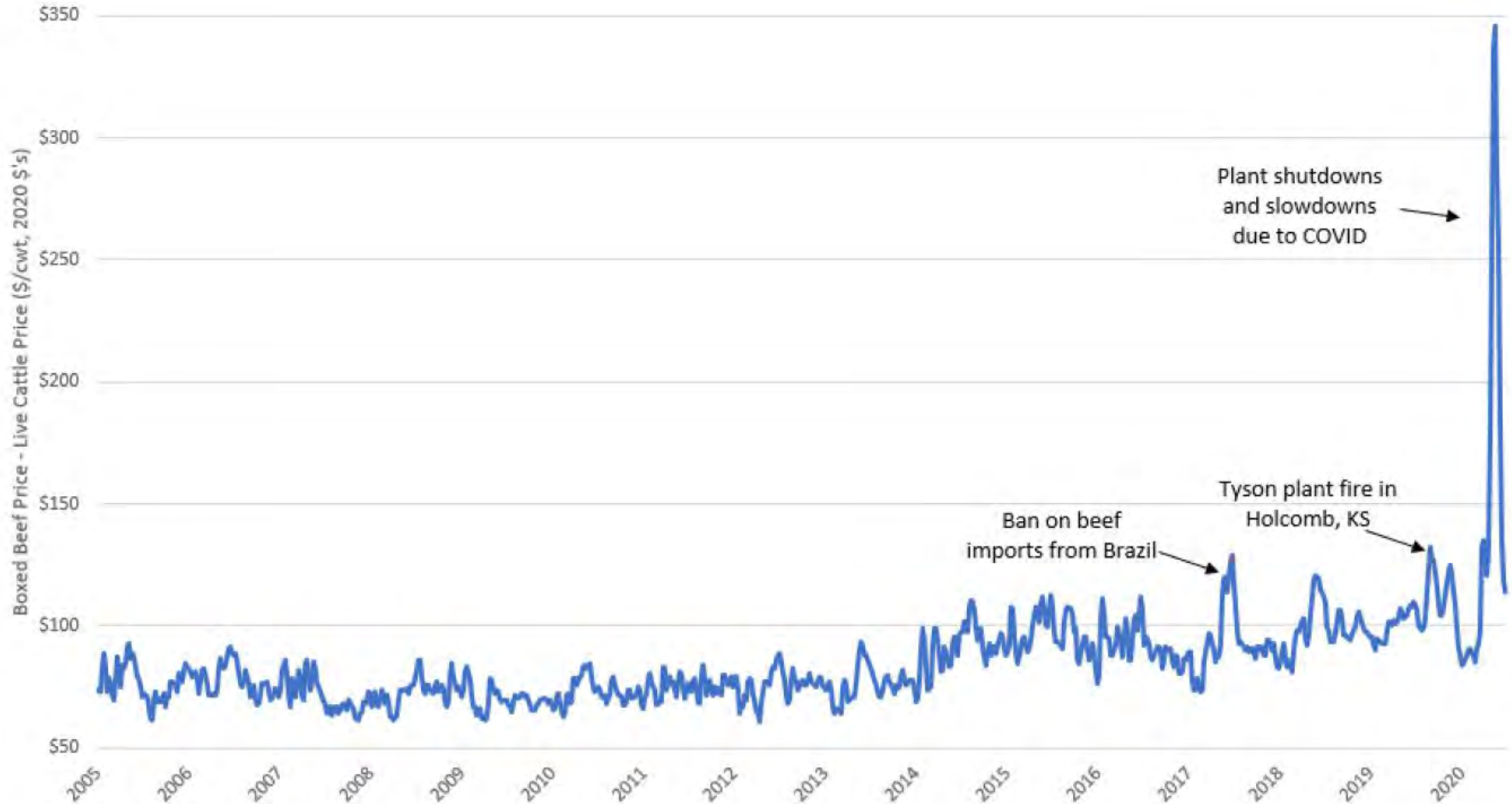
### Press Release

Release No. 0328.20

**Contact:** USDA Press

**Email:** [press@oc.usda.gov](mailto:press@oc.usda.gov)

# Beef Price Spread (the longer view)



# The fallout



## Grassley bill would mandate 50 percent cash trade, 14 day delivery for fed cattle

News [FOLLOW NEWS](#) | May 15, 2020

## Newsweek

### Elizabeth Warren and Cory Booker Join Forces on Bill to Ban Most Factory Farming by 2040

BY **AILA SLISCO** ON 5/7/20 AT 6:30 PM EDT

## Bloomberg

### DOJ Subpoenas Four Biggest Meatpackers in Antitrust Probe

By [David McLaughlin](#)

June 4, 2020, 5:33 PM EDT Updated on June 4, 2020, 7:19 PM EDT

## SF Successful Farming

### USDA RELEASES REPORT ON BOXED BEEF AND FED CATTLE PRICE INVESTIGATION

By [Natalina Sents](#)

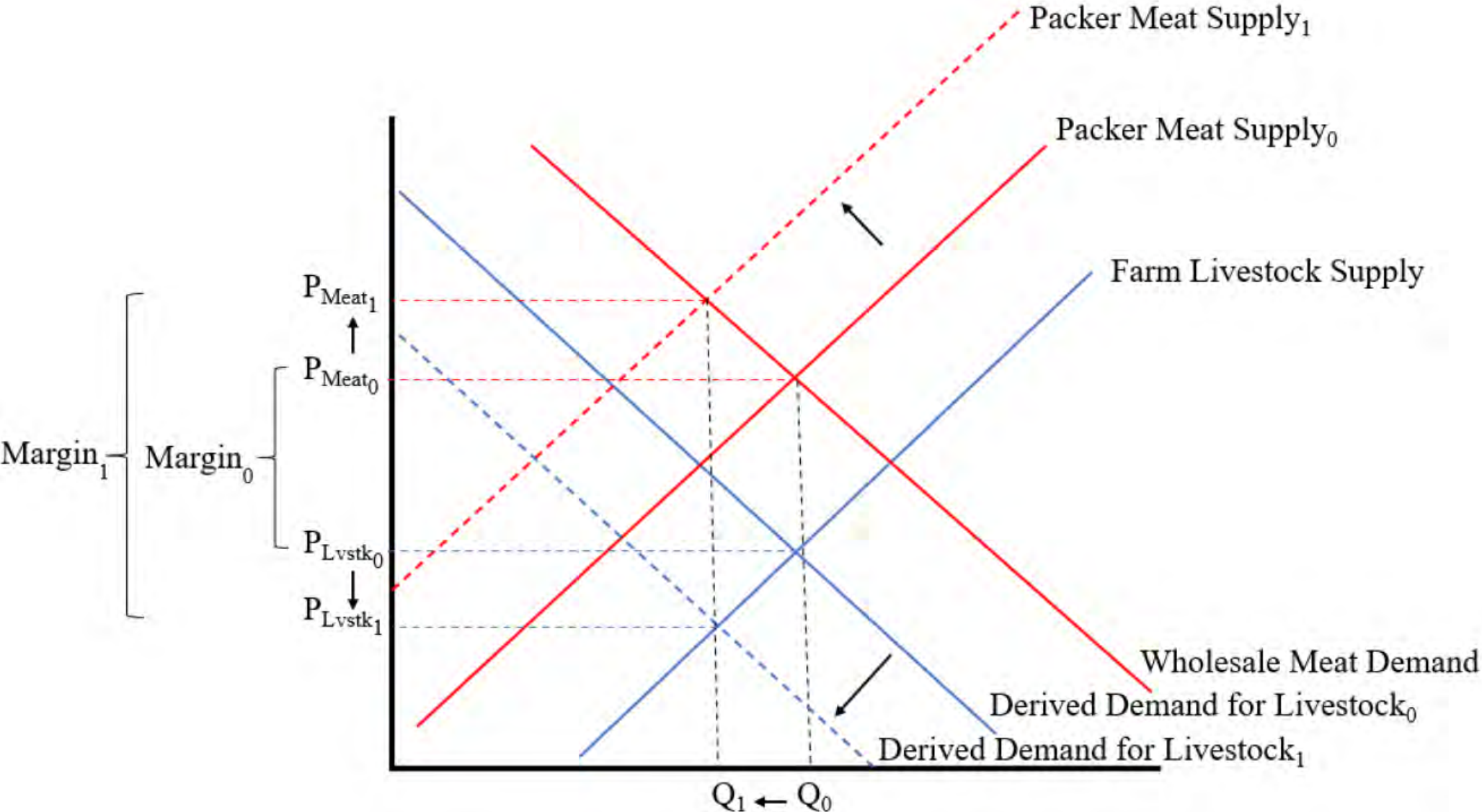
7/22/2020

## MEAT+POULTRY

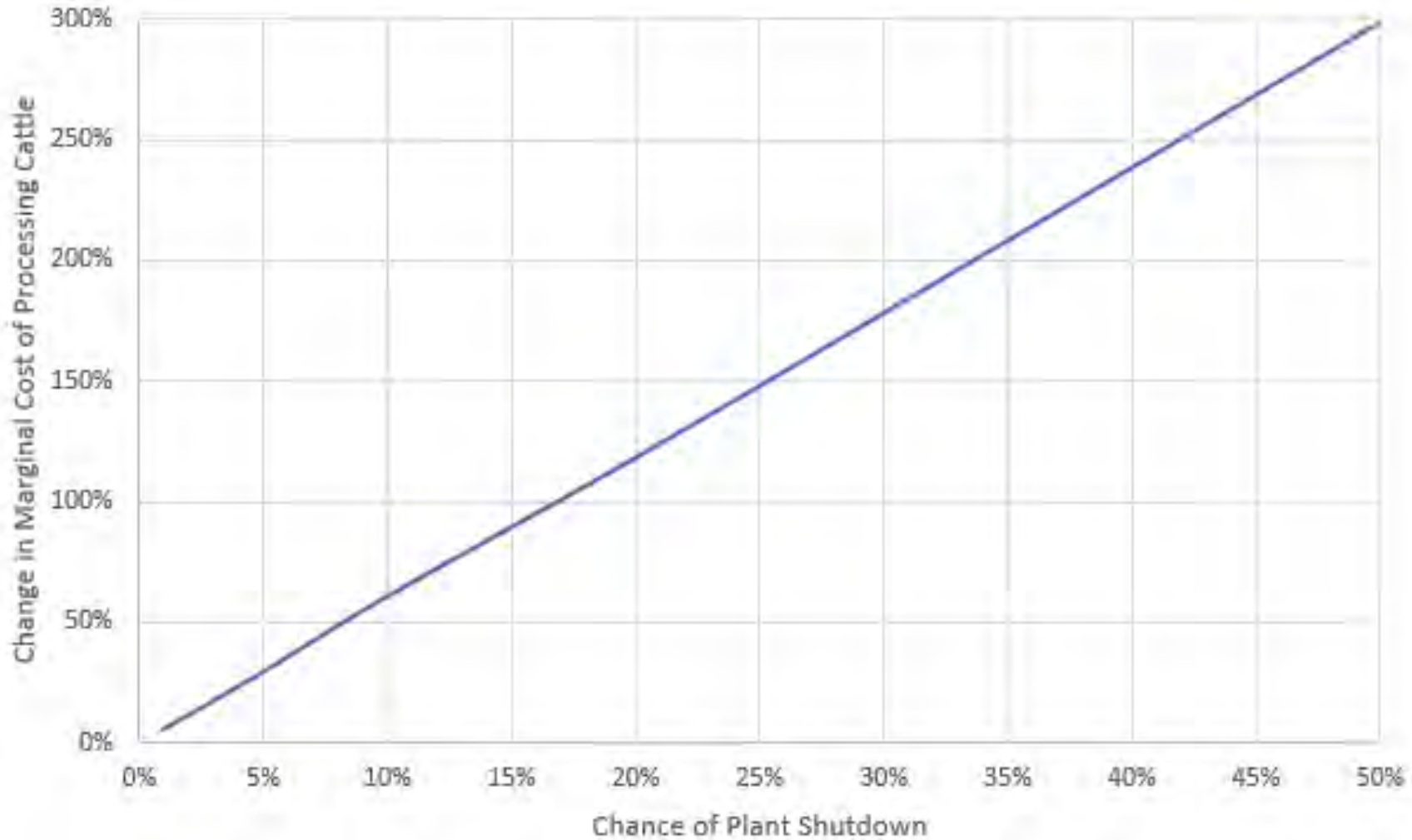
### Lawsuit accuses beef packers of rigging prices

06.09.2020 By [Erica Shaffer](#)

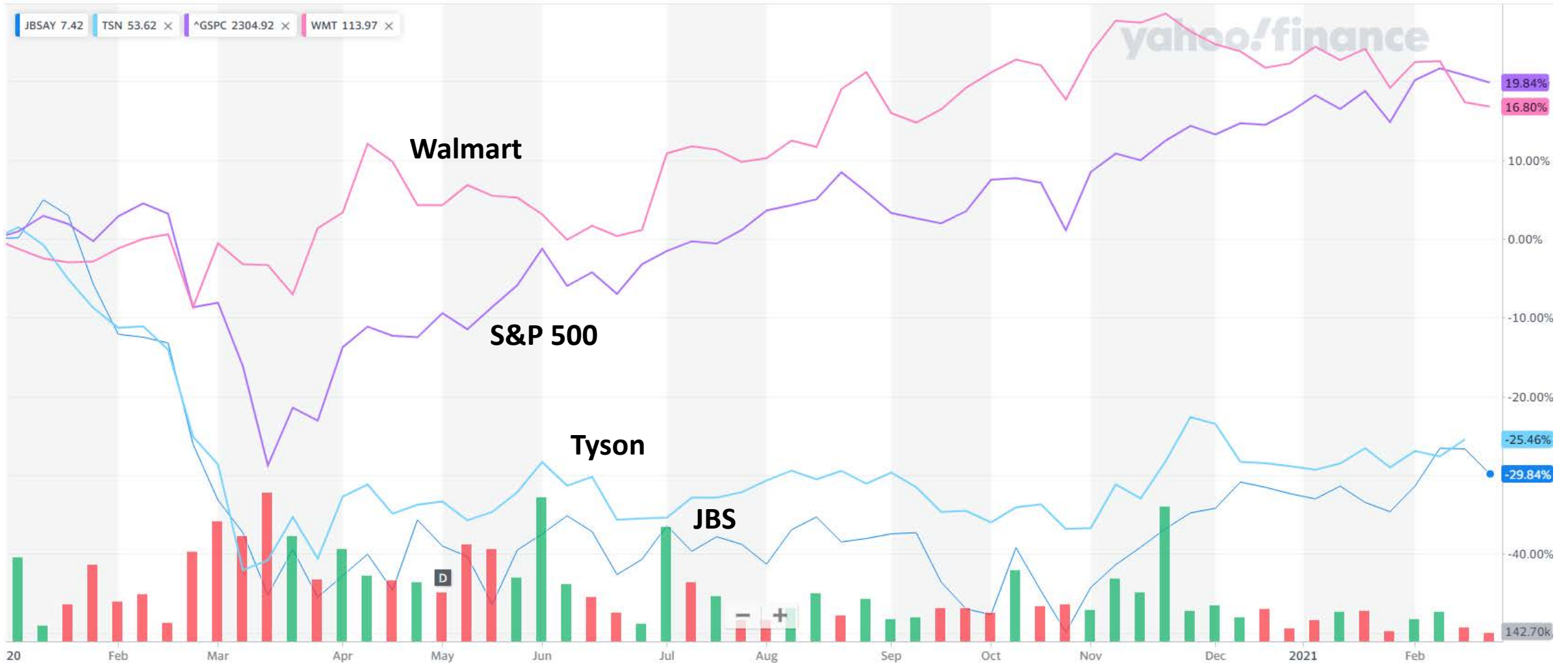
# Theory of Price Spreads



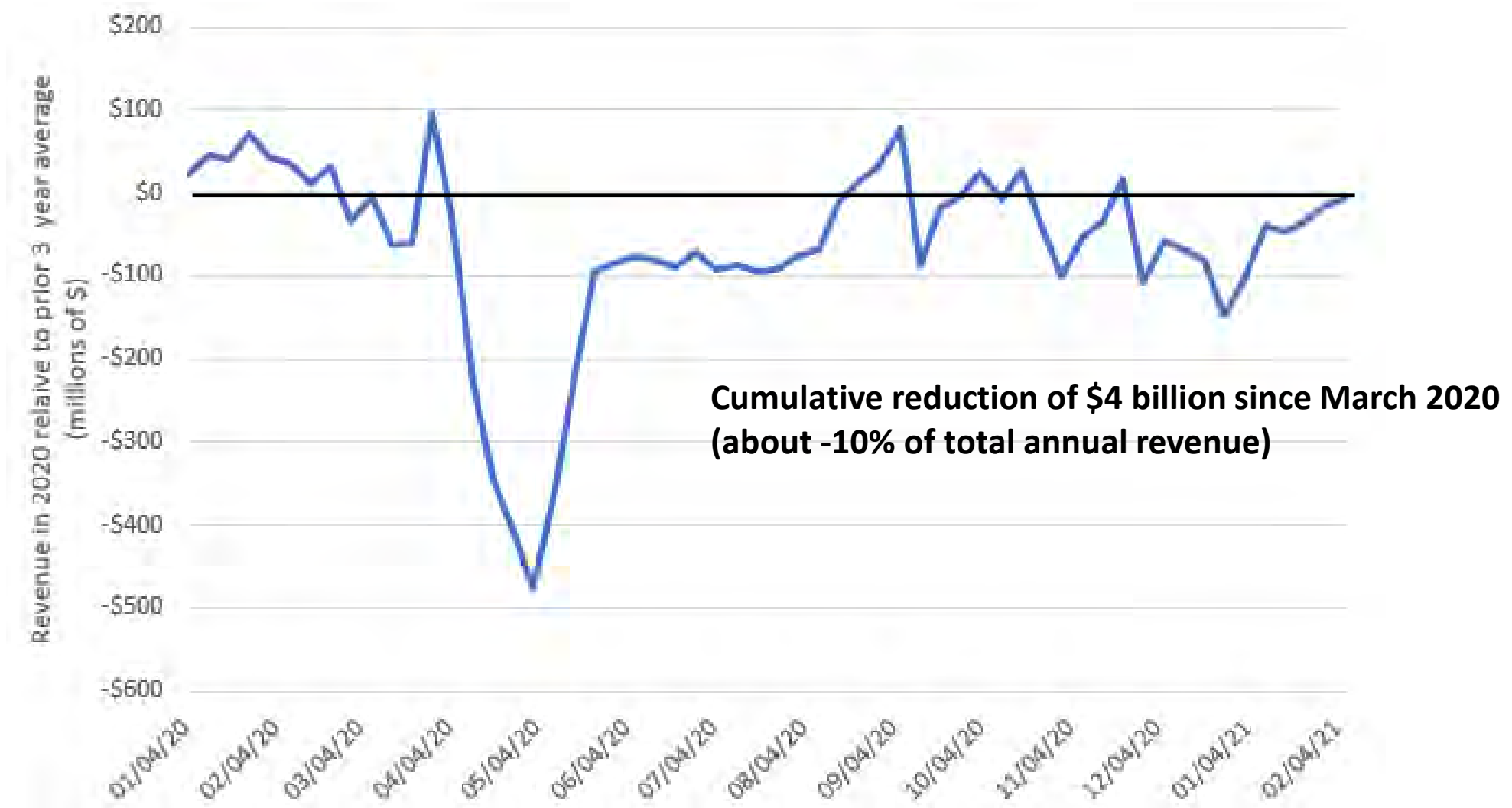
# It is Costly to Run at Reduced Capacity



# Stock Prices of Meat Packing Firms



# Change in Steer & Heifer Producer Revenue





# Keep an eye out ...

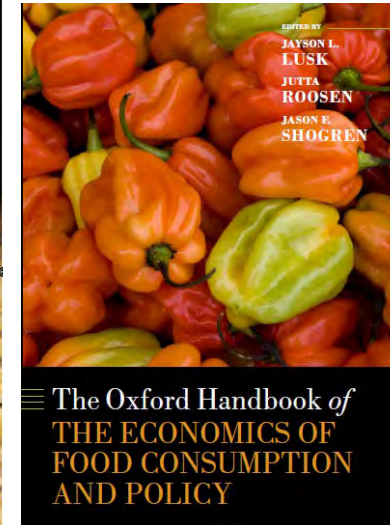
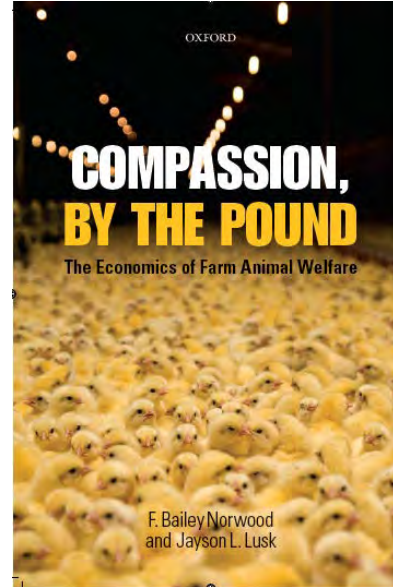
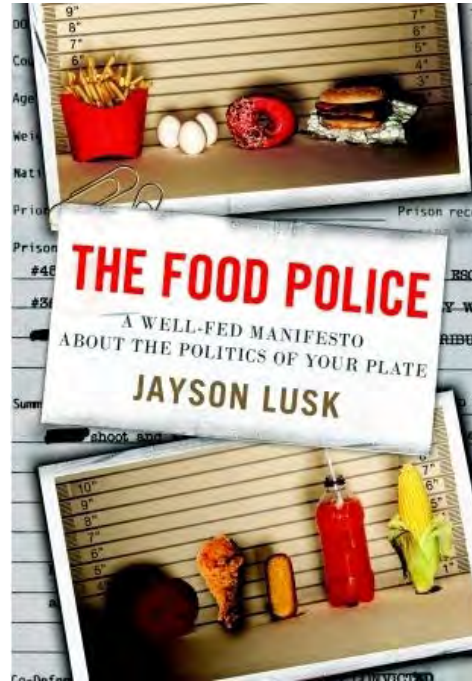
- **Animal disease issues**
- **Accelerated trend to e-grocery**
- **More food at home will by-pass the store (micro-fulfillment centers)**
- **Labor saving automation**
- **Smaller groceries focused on fresh items**
- **Increased scrutiny over concentration and anti-competitive behavior**
- **Shake-up in food service sector**
- **More ghost kitchens**
- **Rising interest among some segments in local, direct farm delivery**

HOW SCIENCE AND TECHNOLOGY  
ARE SERVING UP SUPER FOODS  
TO SAVE THE WORLD



# Unnaturally Delicious

JAYSON LUSK



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