

COVID-19, Consumers, and the Food Supply Chain

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Timeline of disruptive events

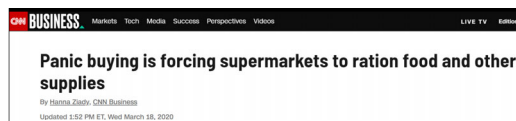
Early March
Start of "stocking up"
for food at home



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



EATER LOS ANGELES

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 Elnett | Mar 17, 2020, 9:41am PDT

Early March
Start of "stocking up" for
food at home

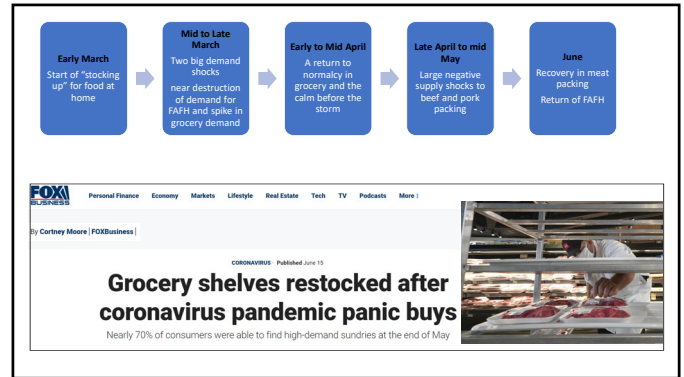
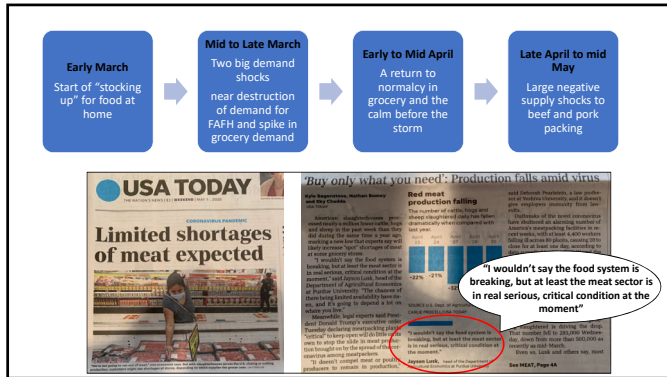


Mid to Late March
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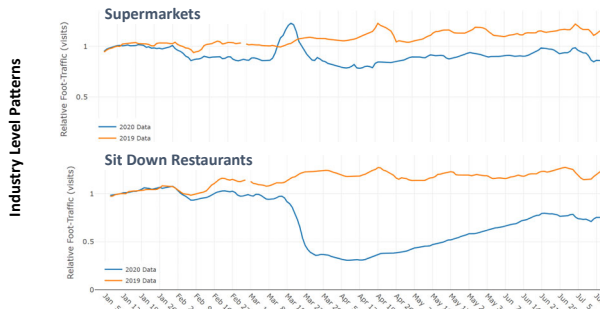


Early to Mid April
A return to normalcy in
grocery and the calm
before the storm

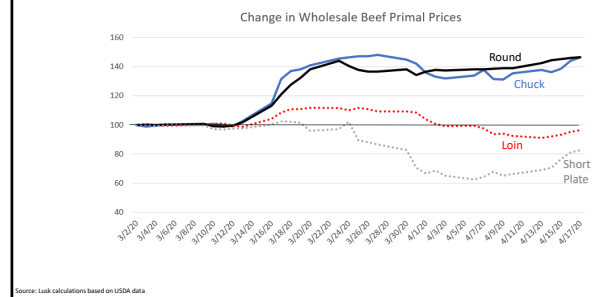




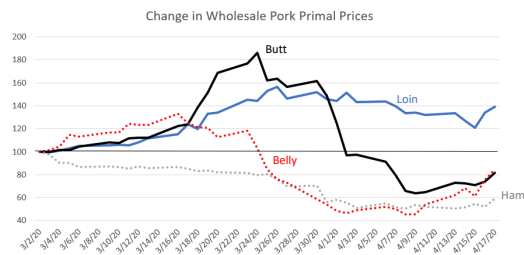
Foot Traffic



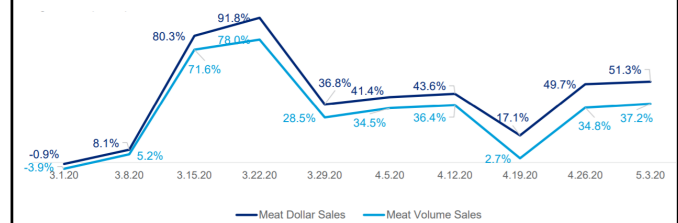
Price changes depend on exposure to FAFH



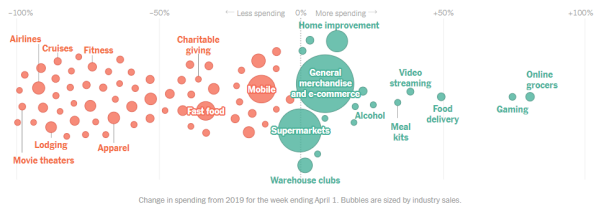
Price changes depend on exposure to FAFH



Annual Change in Retail Fresh Meat Sales



Heterogeneous spending impacts



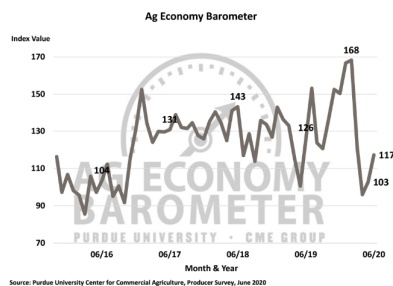
Source: <https://www.nytimes.com/interactive/2020/04/11/business/economy/coronavirus-us-economy-spending.html>

Index of Consumer Sentiment



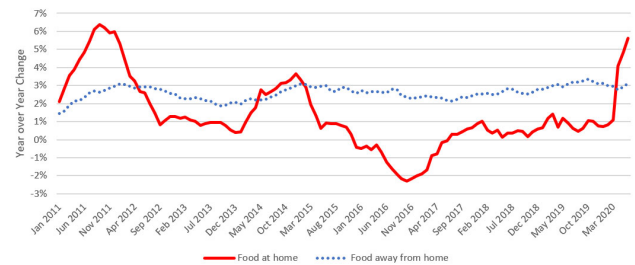
Source: University of Michigan, <http://www.sca.isr.umich.edu/>

Index of Farmer Sentiment



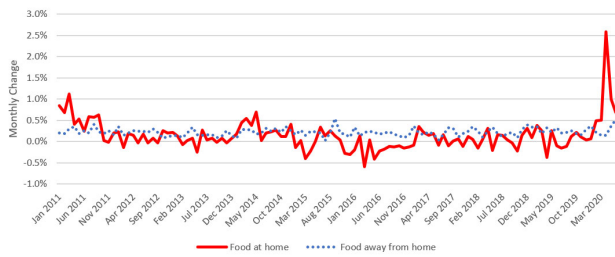
Source: Purdue University, <https://ag.purdue.edu/commercialag/ageconomybarometer/>

Annual Change in Retail Food Prices

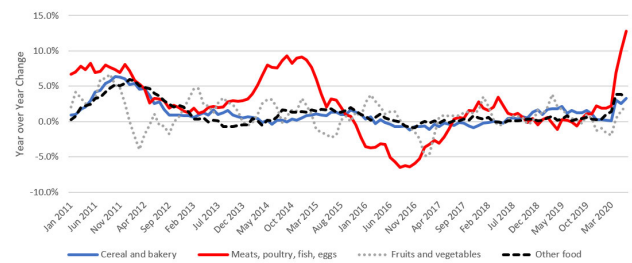


Source: Bureau of Labor Statistics

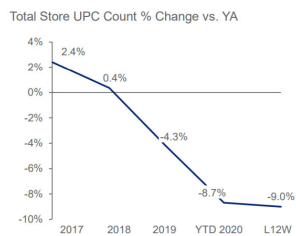
Monthly Change in Retail Food Prices



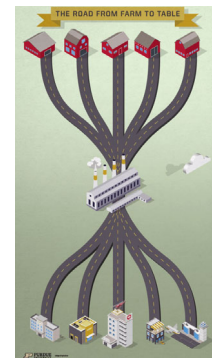
Annual Change in At Home Food Prices



Retail Variety is Down



Vulnerabilities

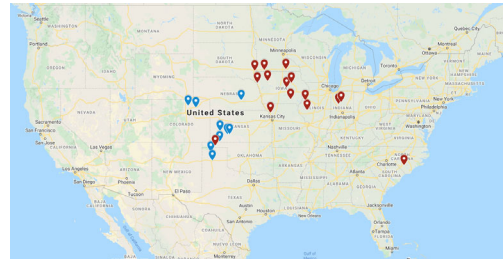


Asset fixity leads to farm surplus amidst retail stockouts

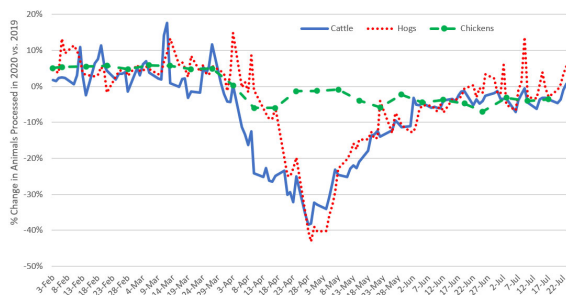


Meat packing is concentrated

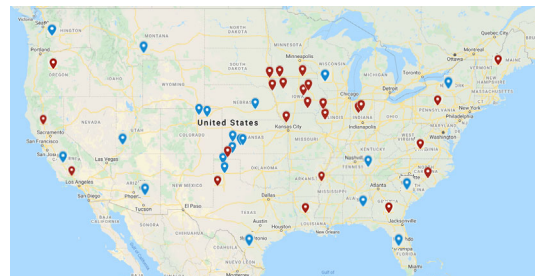
- 10 plants slaughter 63% of all cattle
- 15 plants slaughter 59% of all hogs



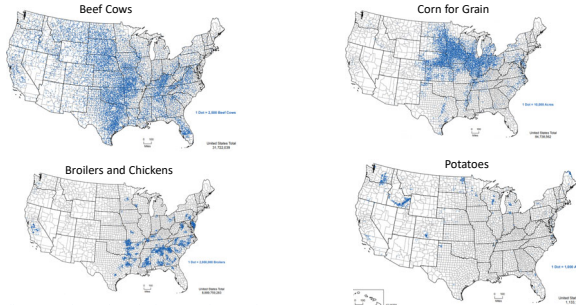
Weekday Processing Volumes



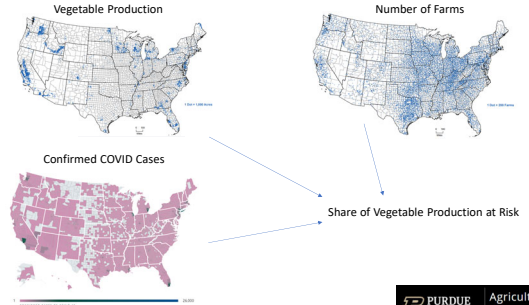
What Does it Mean to be Resilient?



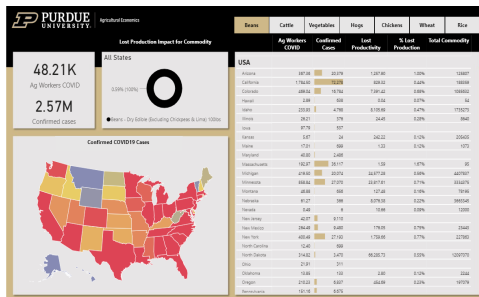
Food production is location- and time-specific



Food and farm vulnerability index



Food and farm vulnerability index

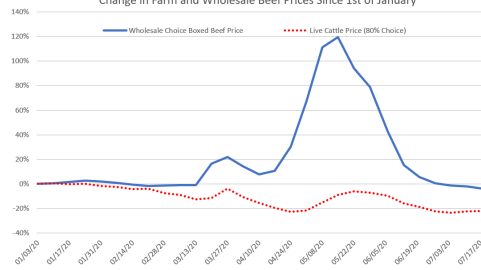


Price Spreads and Marketing Margins



Price Spread

Change in Farm and Wholesale Beef Prices Since 1st of January



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Price Spread



PURDUE UNIVERSITY Agricultural Economics College of Agriculture

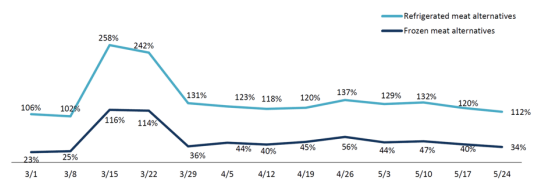
Stock Prices of Meat Packing Firms



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Plant-based meat discussion hasn't gone away

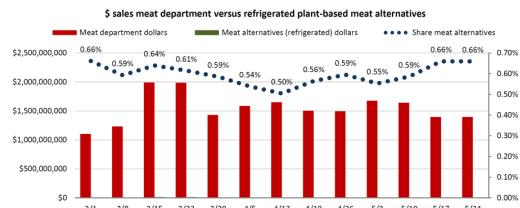
\$ growth meat alternatives refrigerated and frozen vs. comparable week in 2019



Source: IRI

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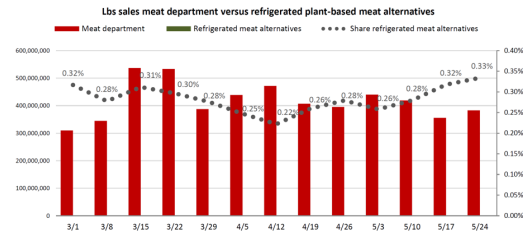
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Source: IRI

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Source: IRI

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A Pre-COVID Study

Which burger option would you buy?

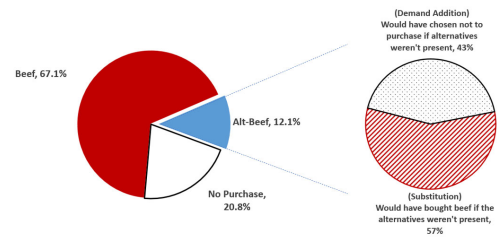


If these were the only options, I would not buy any

Source: Van Loon, Caputo, Lusk, Food Policy, 2020

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Demand Addition or Substitution?

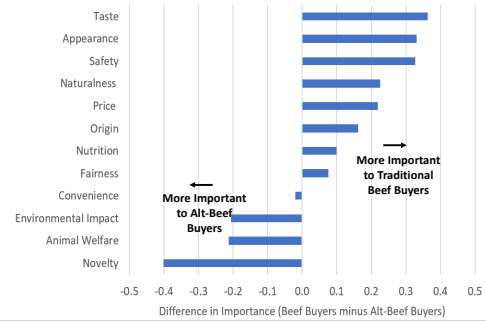

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Who wants alt-meat?

Characteristic	Beef Buyers (N=1360)	Alt-Beef Buyers (N=470)	Difference
% Vegetarian	1.9%	25.5%	-23.6%
% with Children under 12	25.8%	36.8%	-11.0%
% with BS degree or higher	33.4%	40.0%	-6.6%
% Female	47.1%	46.2%	0.9%
% with Household Income < \$40,000	19.5%	18.1%	1.4%
% with Household Income between \$40,000 and \$80,000	33.5%	31.9%	1.5%
% with Household Income between \$80,000 and \$120,000	13.5%	15.3%	-1.9%
% with Household Income > \$120,000	8.2%	12.3%	-4.1%
Average age in years	48.04	40.33	7.70
% younger than 30 years	18.6%	37.2%	-18.6%
# people in Household	2.49	2.57	-0.07
% residing in Northeast	17.7%	21.3%	-3.6%
% residing in Midwest	22.9%	17.4%	5.4%
% residing in South	38.6%	38.1%	0.5%
% residing in West	20.8%	23.2%	-2.4%

How important are the following items to you when purchasing food?

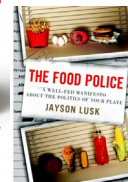
(1=very unimportant; 5 = very important)



What's ahead? (sheer speculation)

- Ambiguous retail price trends
- Recession will affect food purchases and food security
- Accelerated trend to e-grocery
- More food at home will by-pass the store
- Smaller groceries focused on fresh items
- Labor saving automation
- Increased scrutiny over concentration and anti-competitive behavior
- More ghost kitchens
- Rising interest in local food, direct farm delivery

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



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