

# Discussing the U.S. Meat-Livestock Supply Chain

2022 LOCKTON FOOD & BEVERAGE CONFERENCE

KANSAS CITY, MO

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# Questions to discuss today...

- ❖ What to-date are main pandemic impacts?
- ❖ Is meat demand per capita meat consumption?
- ❖ What do we know about meat demand?
- ❖ How does Glynn encourage folks to think & manage for the future?

# 3 LARGE COVID-19 SHOCKS

**Each Had/Have Demand  
Impacts...**

# Monthly Meat Demand Monitor [Survey Data]

<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>

The Meat Demand Monitor (MDM) project is funded in-part by the beef checkoff and the pork checkoff. Monthly reports and supporting documentation are available here.



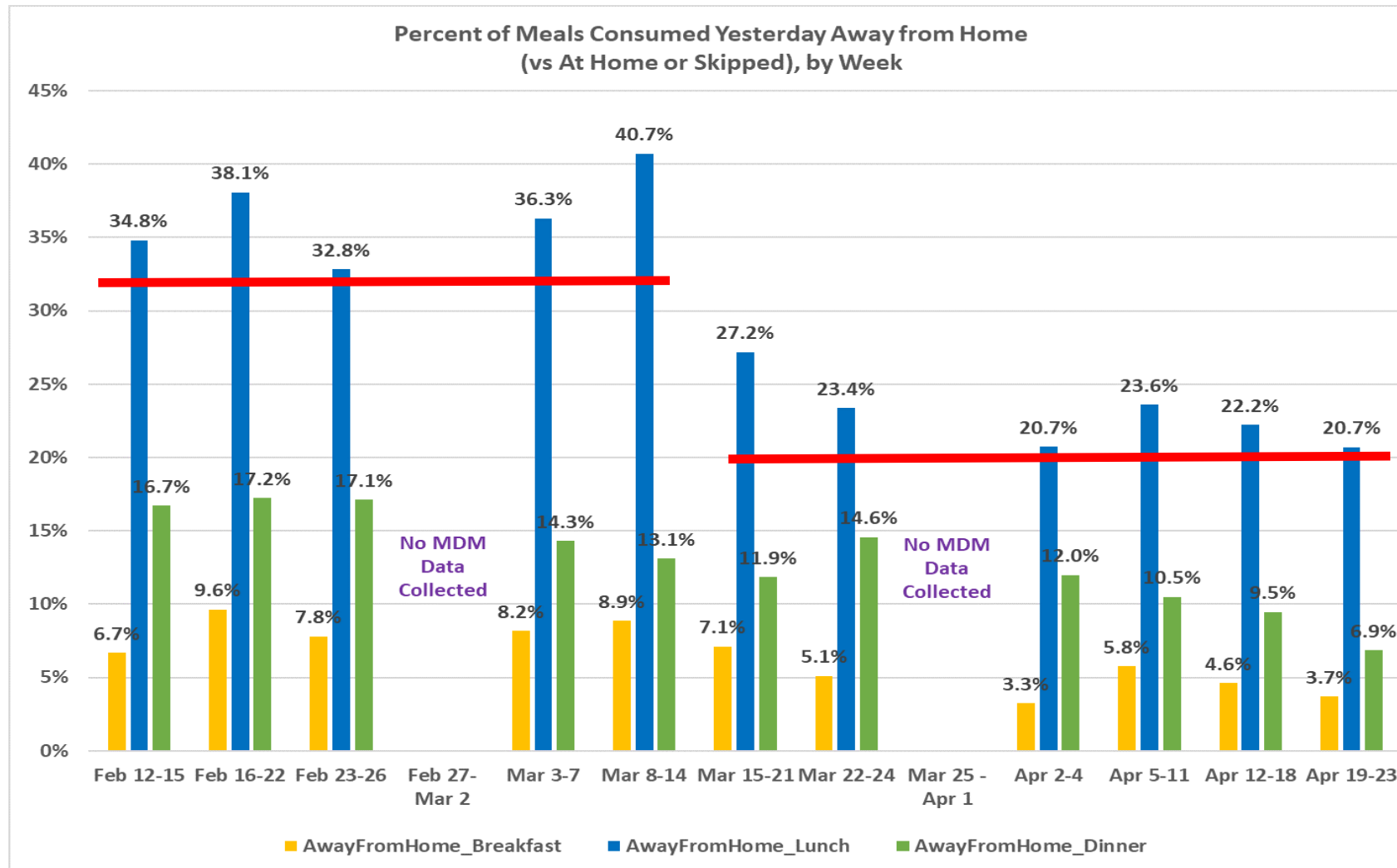
Funded in part by  
the Beef Checkoff.



## Monthly Meat Demand Monitor

Title	Author	Date	Downloads
<a href="/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-covid19">Meat Demand Monitor - COVID19 Impact Special Report (/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-covid19)</a>	Tonsor (/contributors/tonson)	March 26, 2020	<a href="#">Downloads ▾</a>
<a href="/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-march-2020">Meat Demand Monitor - March 2020 (/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-march-2020)</a>	Tonsor (/contributors/tonson)	March 26, 2020	<a href="#">Downloads ▾</a>

# SHOCK #1: Shift to At-Home, Spring 2020



# Implications

## SHOCK #1: Shift to At-Home: Mid-March thru April

- “Not all meat is equal”
  - Weeks of ham=bacon wholesale price anomalies
    - Market-channel prevalence variation = diverse product level pricing
- Growing discussion around benefit-costs of retail, food service, and export channels being firmly distinct
  - ✓ GT #1: Need to balance added flexibility with efficiency drivers



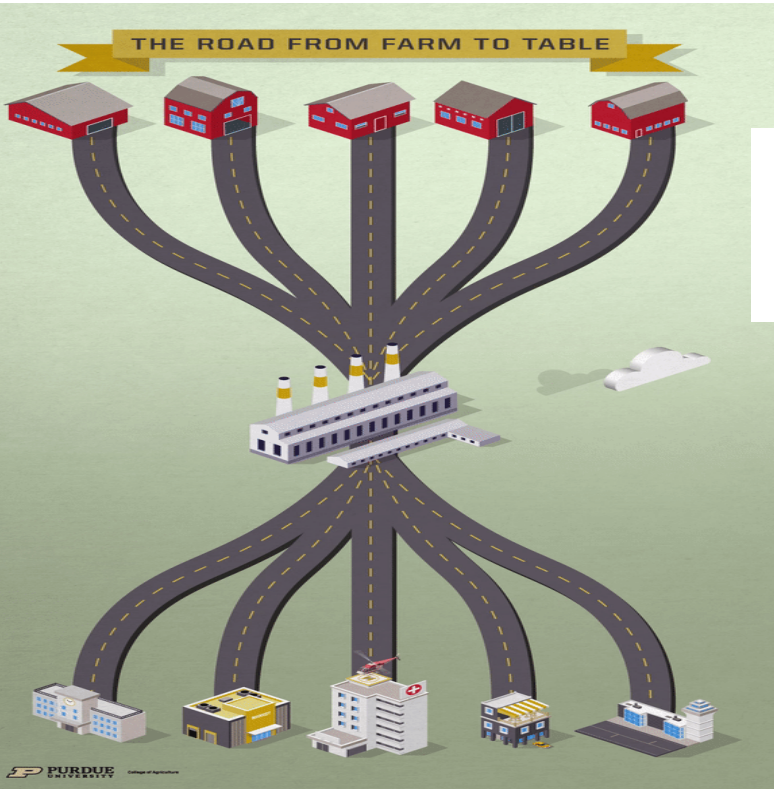
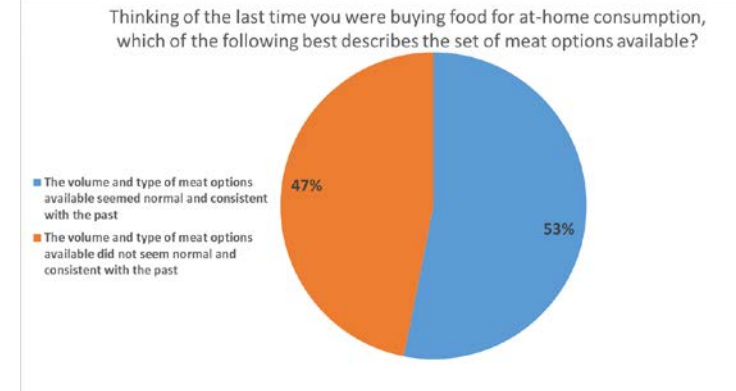
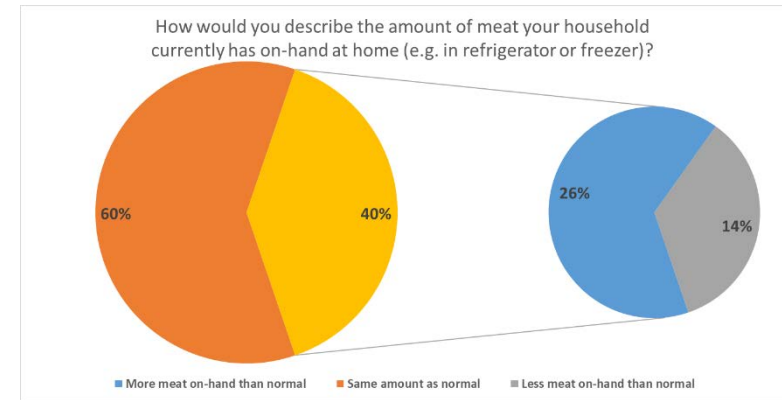
# SHOCK #2:

## Animal-to-Meat Bottleneck in April-May 2020 Societal Calls: *Where's my Meat?*

### TIME

COVID-19 Meat Shortages Could Last for Months. Here's What to Know Before Your Next Grocery Shopping Trip

<https://time.com/5830178/meat-shortages-coronavirus/>



Meat shortages as virus forces plants to close

The effects of the coronavirus pandemic continue to ripple through the food industry. Dean Reynolds reports.

MAY 5, 2020

<https://www.cbsnews.com/video/meat-shortages-as-virus-forces-plants-to-close/>

<https://www.purdue.edu/newsroom/releases/2020/Q2/questions-and-answers-about-the-road-from-farm-to-table.html>

<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-coronavirus>

# Implications

## SHOCK #2: Animal-to-Meat Bottleneck

- System was full going into pandemic – timing & relative capacity matters!
- Surplus of animals & “shortage” of meat
  - Elevated societal interest
- Bottleneck = lower livestock prices & higher meat prices
  - THIS IS WHAT ECONOMISTS EXPECT!
- Multiple, growing pushes on myriad of policies
  - ✓ GT #1: Need to CAREFULLY balance possible gains in system robustness with peace-time efficiency
  - ✓ GT #2: Assessment needed and any action based on data/info, not emotion



## Featured Article

### **Beef and Pork Marketing Margins and Price Spreads during COVID-19**

Jayson L. Lusk\*, Glynn T. Tonsor, and Lee L. Schulz

#### **Example findings:**

- “We explore how such a massive supply shock would be expected to affect marketing margins even in the absence of anti-competitive behavior.
- Moreover, we document how margin measurements are critically sensitive to the selection of data and information utilized.
- Finally, we conclude with some discussion around policy proposals that would pit industry concentration against industry coordination and economies of scale.”



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Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Food Policy

journal homepage: [www.elsevier.com/locate/foodpol](http://www.elsevier.com/locate/foodpol)

<https://www.sciencedirect.com/science/article/pii/S0306919222000306#>



## Regional and plant-size impacts of COVID-19 on beef processing

Justin D. Bina<sup>a,\*</sup>, Glynn T. Tonsor<sup>a</sup>, Lee L. Schulz<sup>b</sup>, William F. Hahn<sup>c</sup>

<sup>a</sup> Department of Agricultural Economics at Kansas State University, United States

<sup>b</sup> Department of Economics at Iowa State University, United States

<sup>c</sup> USDA Economic Research Service, United States

### Example findings:

- Timing and magnitude of slaughter declines varied by region.
- **Limited evidence of plant-size impacts on COVID-19-related slaughter declines.**

“If additional physical capacity is added to the industry, it may not provide the widely-stated benefit of increased “resiliency.” It is often presumed there is a trade-off between efficiency and resiliency when considering industry structure. However, limited evidence of plant-size COVID-19 impacts for most of 2020 suggests caution in presuming this tradeoff. If this trade-off exists, our work suggests it is short-lived.”

# SHOCK #3 Consumer Meat Demand

- Recession

- Weaker Meat Demand (**typically** at least)

January 18, 2018



# Macroeconomic Decline = Meat Demand Decline

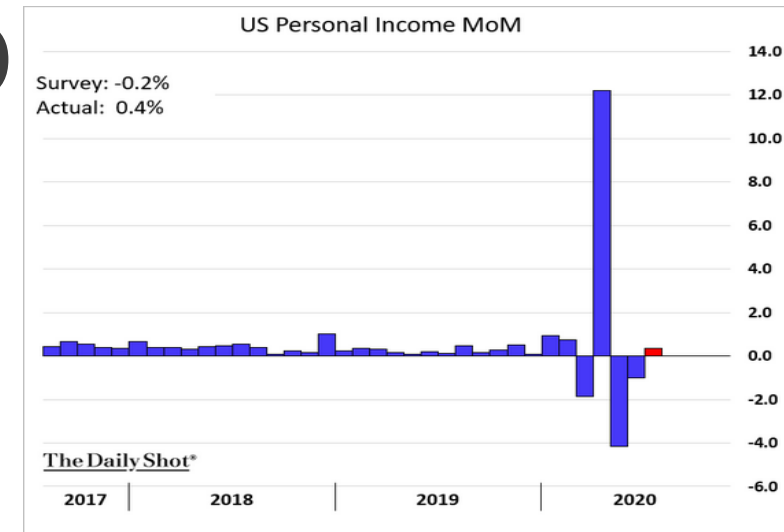
Table 2.1. Aggregate Meat Demand Elasticities Summary

Period	Beef Price Used	Beef Demand				Pork Demand		Chicken Demand	
		Own-Price	Pork Cross-Price	Chicken Cross-Price	Exp.	Own-Price	Exp.	Own-Price	Exp.
1988-2017	All-Fresh	-0.479	0.087	0.023	0.803	-0.307	0.141	-0.339	0.425
1988-2007	All-Fresh	-0.645	0.145	0.026	0.790	-0.229	-0.262	-0.345	0.371
2008-2017	All-Fresh	-0.450	-0.032	0.083	0.959	-0.089	1.231	-0.378	0.856
1970-2017	Choice	-0.593	0.120	0.041	0.118	-0.973	-0.170	-0.133	0.218
1988-2017	Choice	-0.490	0.085	0.021	0.781	-0.313	0.146	-0.345	0.430
1970-1994	Choice	-0.594	0.138	0.039	0.118	-0.924	-0.004	-0.159	0.003
1995-2017	Choice	-0.468	0.049	-0.044	0.867	-0.287	0.634	-0.469	0.960

Note: "Exp." is Expenditure abbreviated. All Rotterdam models were estimated using iterative three-stage least squares.

# SHOCK #3 Consumer Meat Demand

- Recession
  - Weaker Meat Demand (**typically** at least)
- Stimulus & Spending
  - Supports Demand (April 20' incomes were up!)



# Implications

## SHOCK #3: Meat Demand

- Weaker demand = less \$ for industry and ultimately smaller livestock and meat production
  - ✓ GT #1: Ongoing mis-understanding of demand is problematic
  - ✓ GT #2: Recognition of US comparative advantages, growing role of exports, and “fit” with policy and industry strategy must improve
    - ❖ Homework Assignment: Google “Smoot-Hawley Tariff Act of 1930”

# Let's Pause

**Demand = Consumption?**



Demand is **NOT** Per Capita Consumption

# *2013 Beef Demand Determinants Study*



[http://www.beefboard.org/evaluation/  
130612demanddeterminantstudy.asp](http://www.beefboard.org/evaluation/130612demanddeterminantstudy.asp)



MARKETING > OUTLOOK

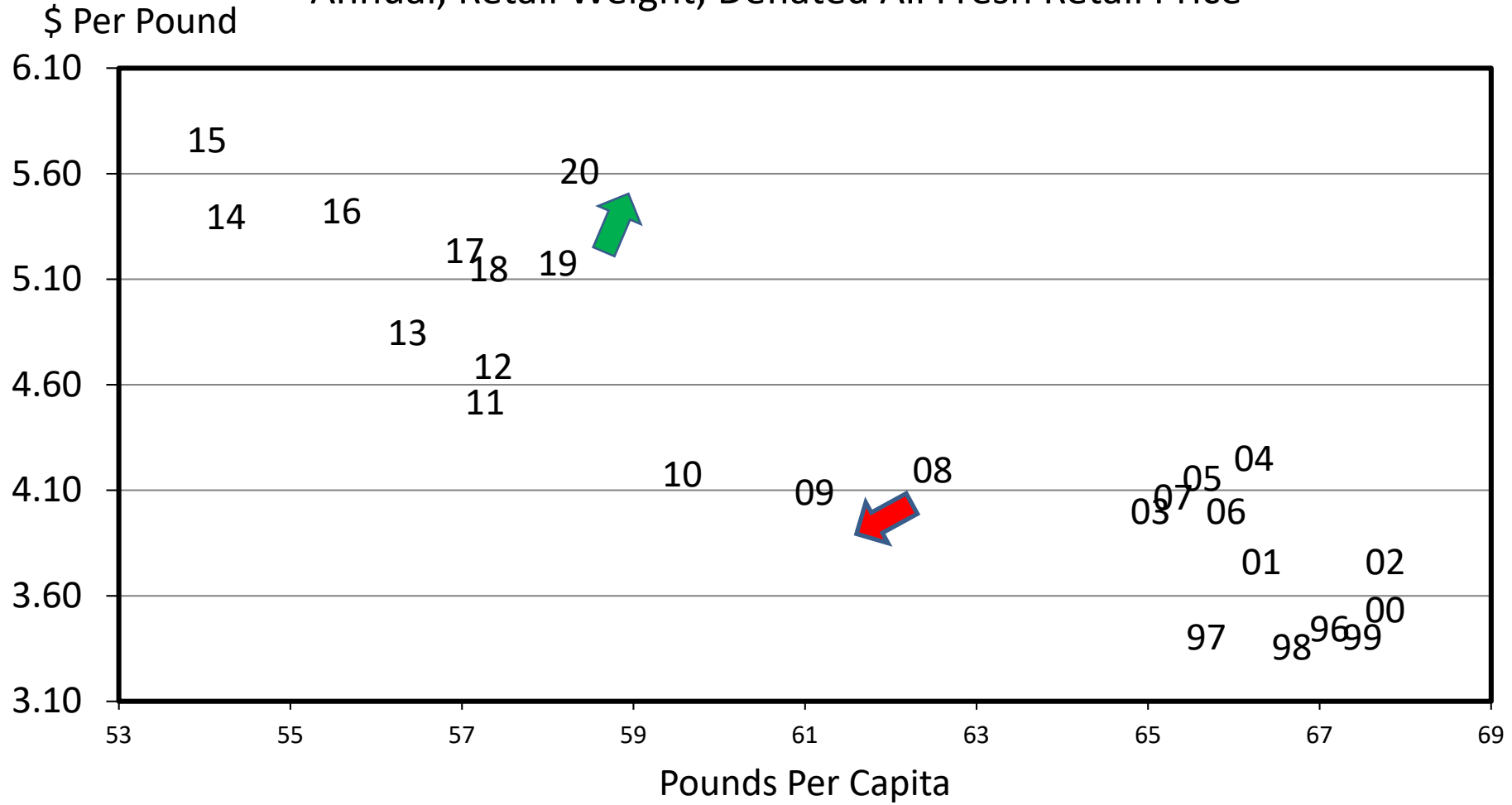
## What's The Similarity Between Blue Jeans and Beef Demand?

Beef consumption and beef demand isn't the same thing. Here's an explanation.

Burt Rutherford | Sep 19, 2013

# BEEF PRICE-QUANTITY RELATIONSHIP

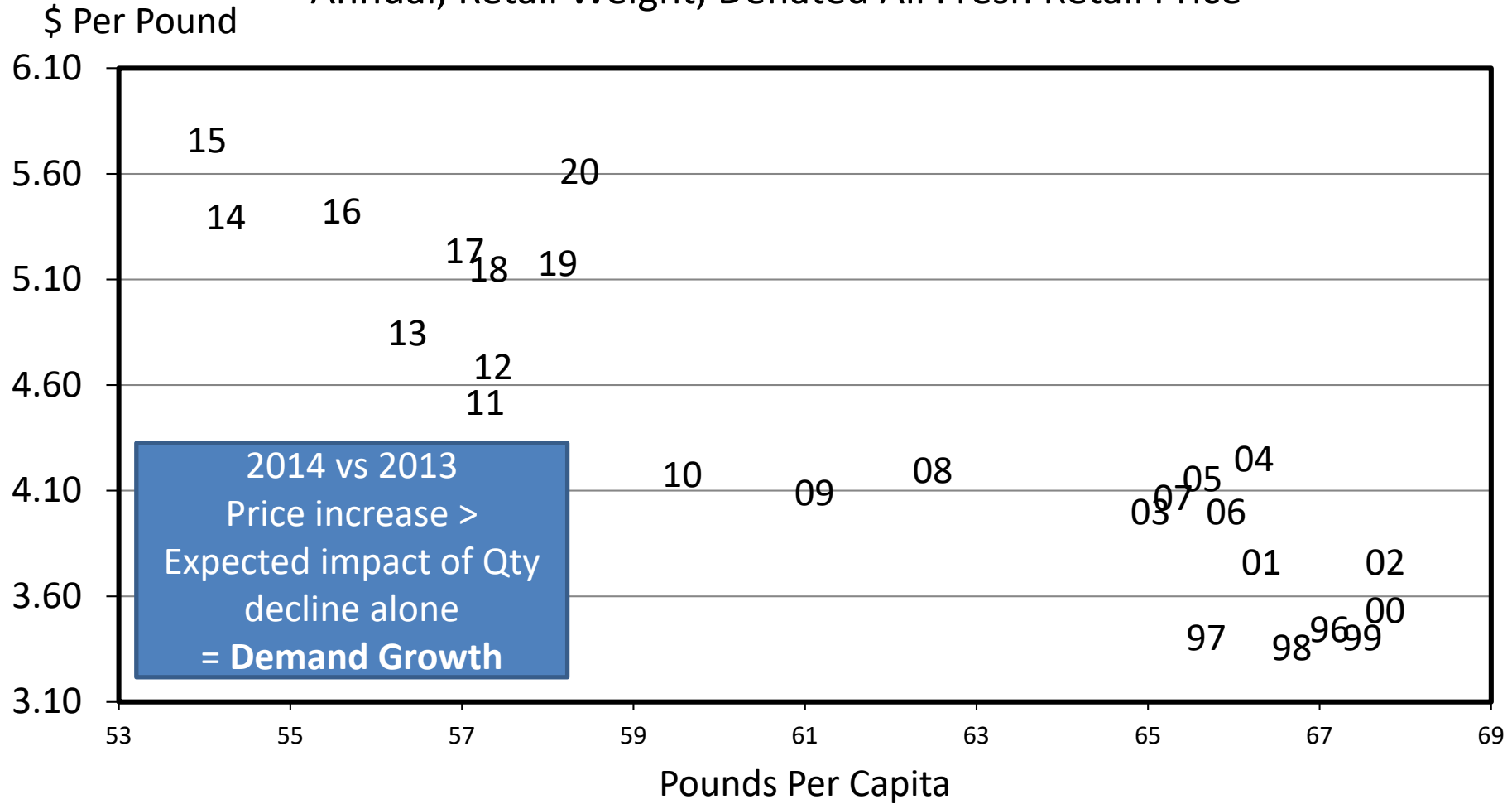
Annual, Retail Weight, Deflated All Fresh Retail Price



C-P-65A  
08/30/21

# BEEF PRICE-QUANTITY RELATIONSHIP

Annual, Retail Weight, Deflated All Fresh Retail Price



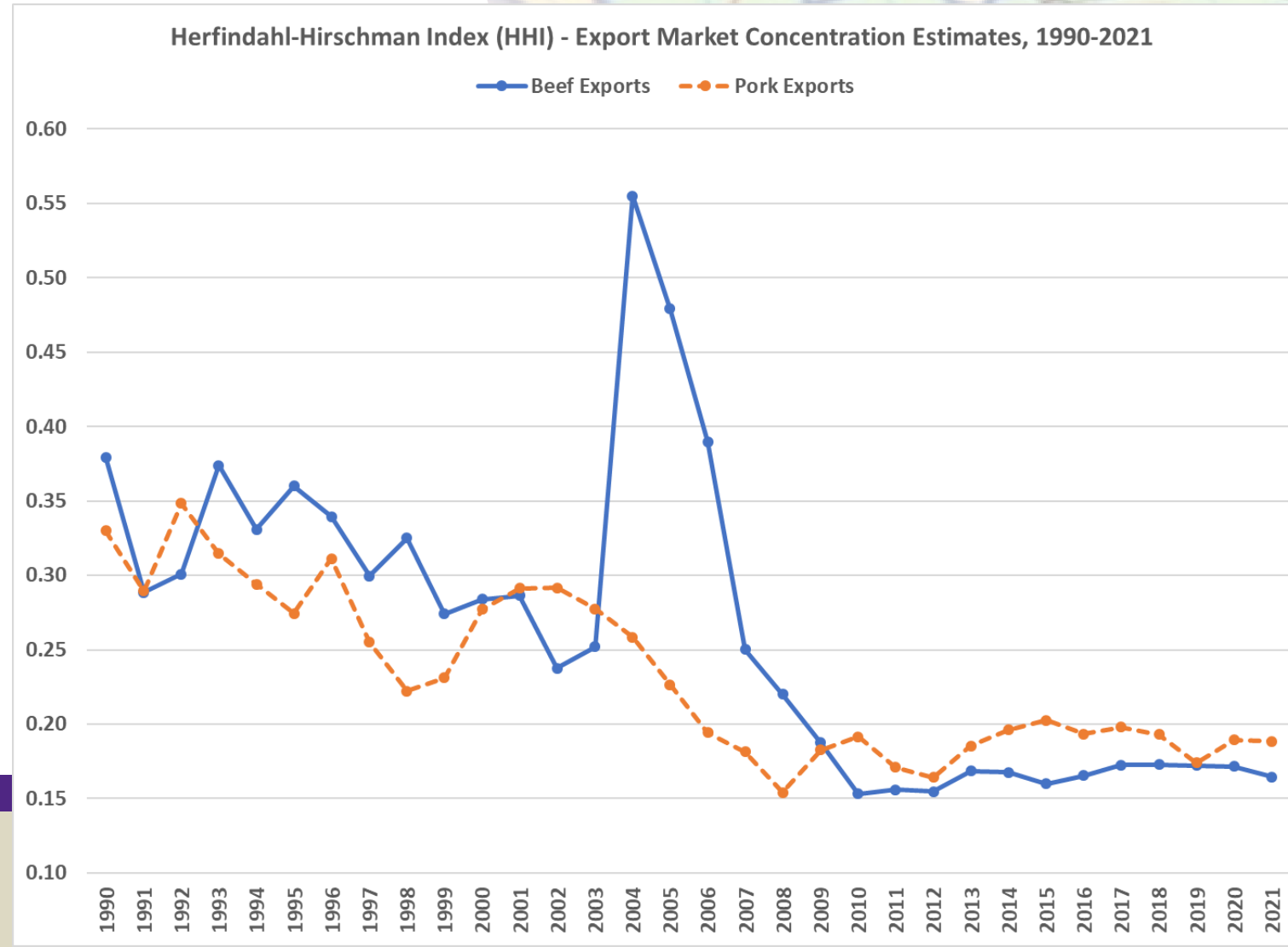
C-P-65A  
08/30/21

# Recent Consumption & Demand Patterns

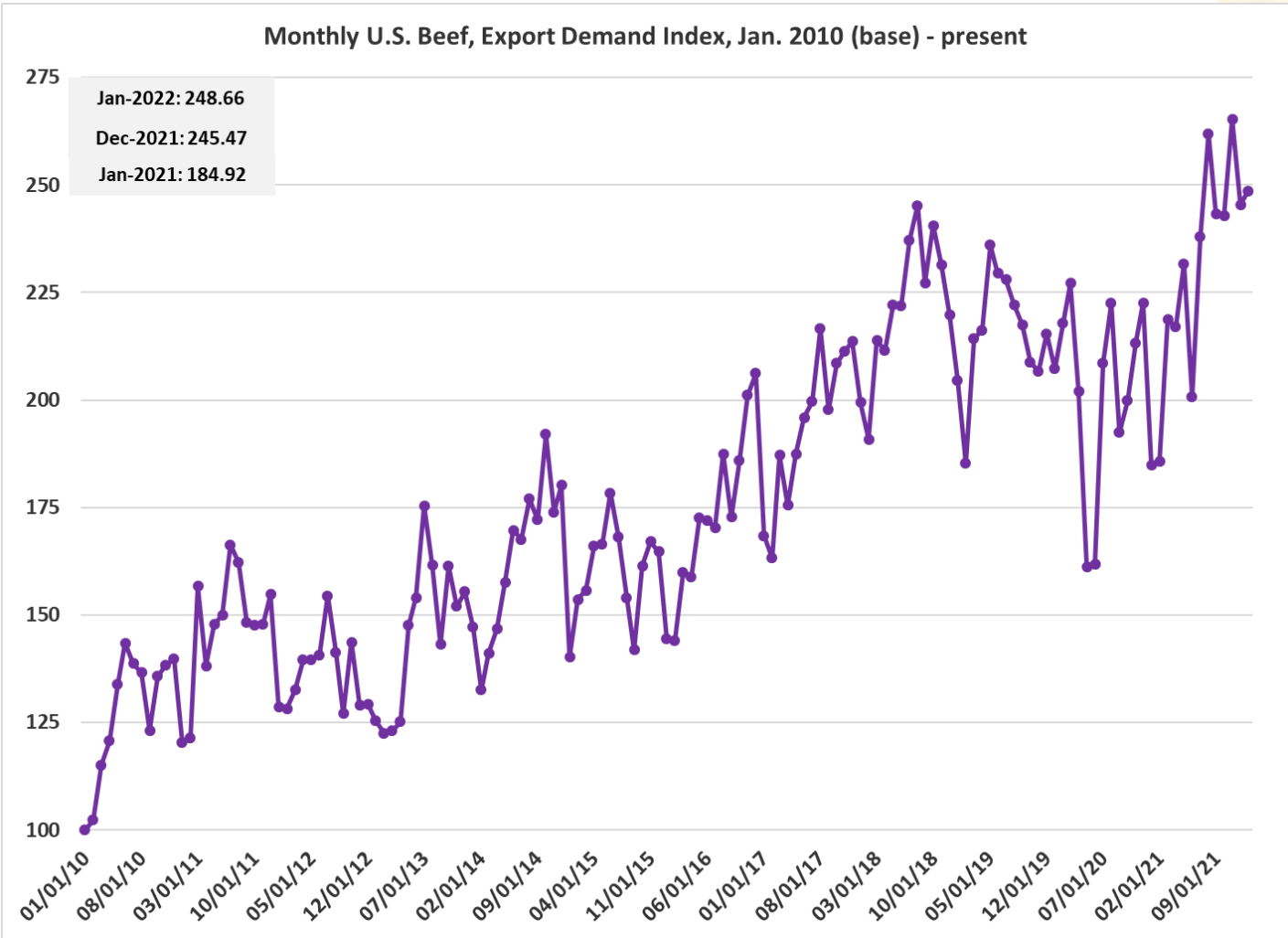
# We Live in a Global World! Consider Evolution of U.S. Meat Exports

➤ Importantly, diversity of portfolios has developed

<https://agmanager.info/livestock-meat/marketing-extension-bulletins/trade-and-demand/concentration-us-red-meat-exports>



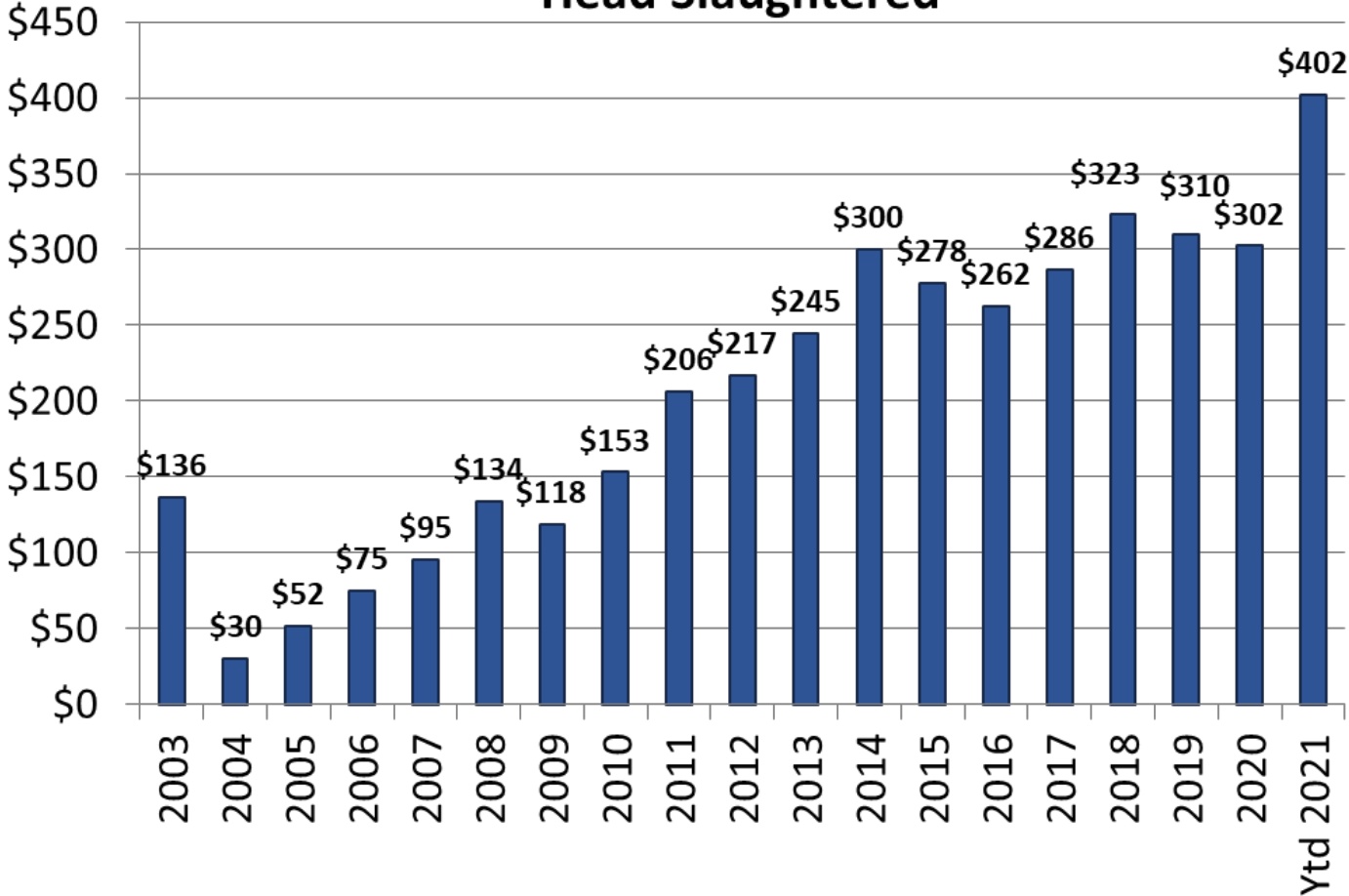
➤ Meanwhile, economic importance of beef trade continues to grow





# Export Demand Strength – Aligns with USMEF #s

## Beef & Beef Variety Meat Export Value Per Fed Head Slaughtered



GT: \$402/hd = ~22% of Fed Cattle Value in 2021

# Monthly Meat Demand Monitor, Methods, and Supporting Information

Home / Livestock & Meat / Meat Demand / Monthly Meat Demand Monitor [Survey Data]

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[Kansas Ag Mediation Service \(KAMS\)](#)

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## Livestock & Meat

[Projected Feeder Cattle Prices](#)

[Cattle Finishing Returns](#)

[Meat Demand](#)

[Meat Demand Research Studies](#)

[Monthly Domestic Meat Demand Indices \[USDA/BLS Data\]](#)

[Monthly Export Meat Demand Indices \[USDA/BLS Data\]](#)

[Monthly Meat Demand Monitor \[Survey Data\]](#)

## Monthly Meat Demand Monitor [Survey Data]

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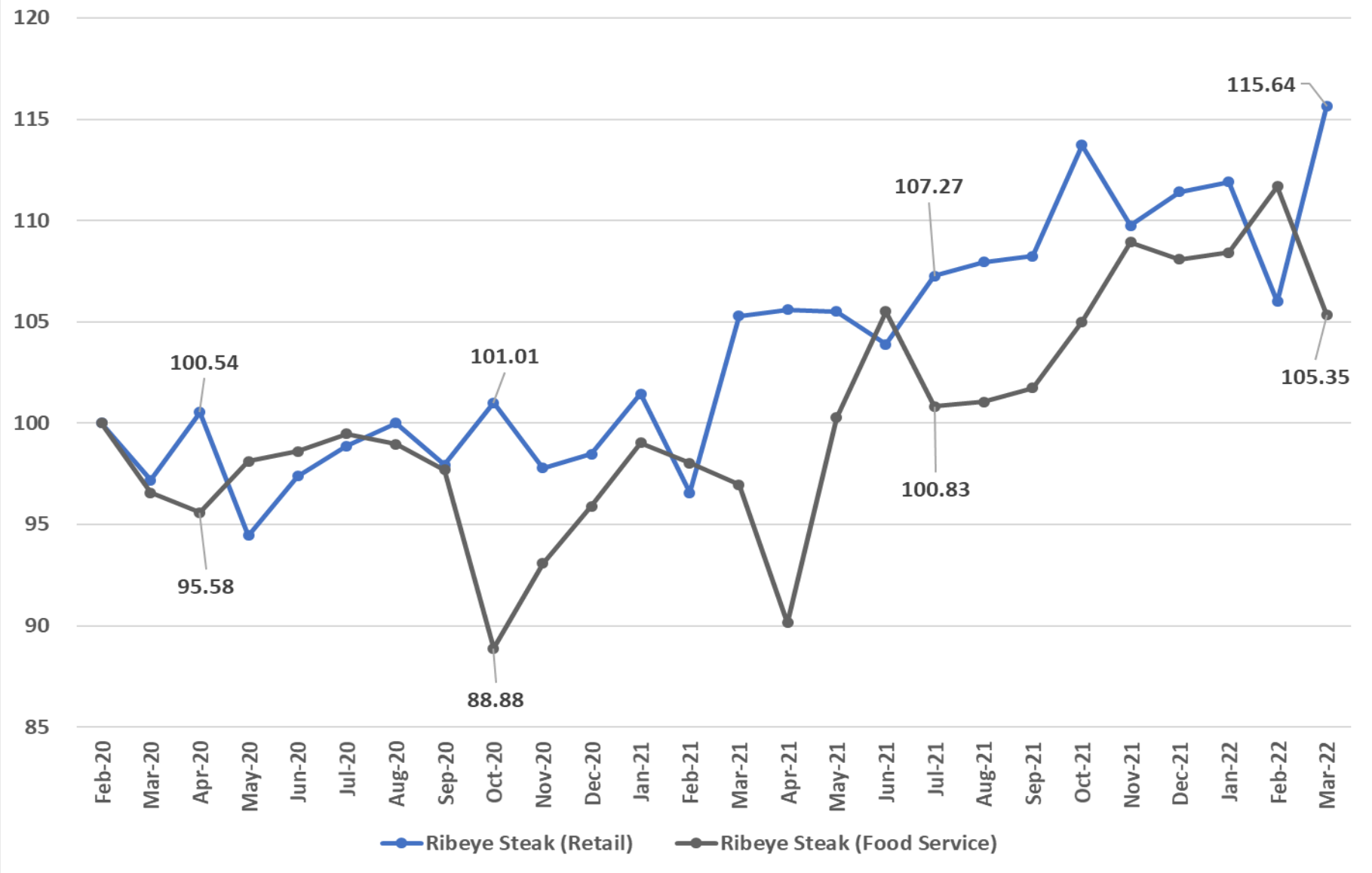
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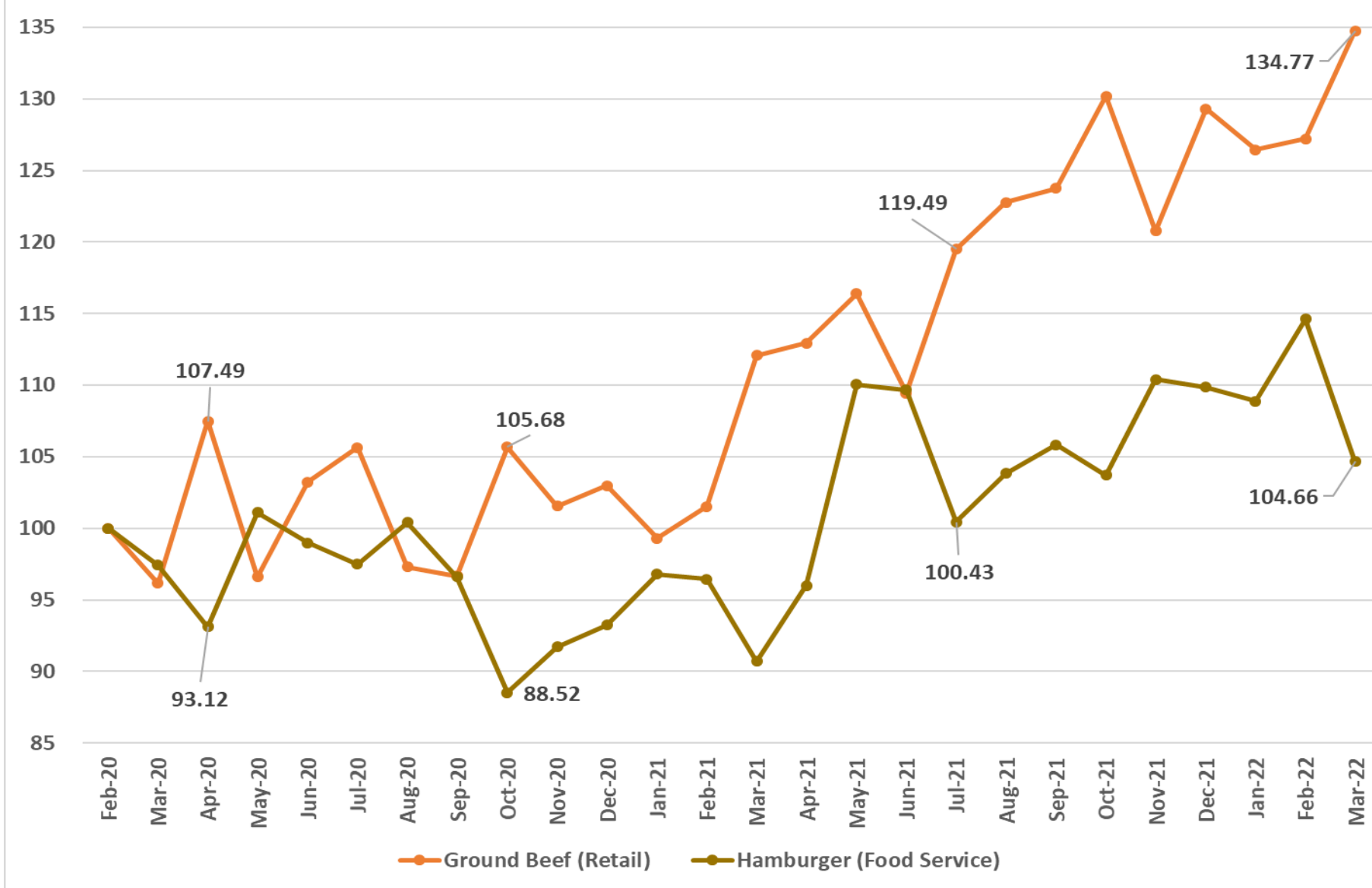
## Monthly Meat Demand Monitor

Title	Author	Date	Downloads
<a href="#">Meat Demand Monitor - August 2020</a>	Tonsor	September 4, 2020	<a href="#">Downloads</a>
<a href="#">Meat Demand Monitor - July 2020</a>	Tonsor	August 4, 2020	<a href="#">Downloads</a>
<a href="#">Meat Demand Monitor - February-June 2020 Summary Report</a>	Tonsor	July 27, 2020	<a href="#">Downloads</a>
<a href="#">Meat Demand Monitor - June 2020</a>	Tonsor	July 2, 2020	<a href="#">Downloads</a>
<a href="#">Meat Demand Monitor - May 2020</a>	Tonsor	May 29, 2020	<a href="#">Downloads</a>
<a href="#">Meat Demand Monitor - Coronavirus (COVID-19) Impact on U.S. Meat Demand:</a>	Tonsor	May 12, 2020	<a href="#">Downloads</a>

Master WTP Indices (Feb 20' = 100), Ribeye Offerings

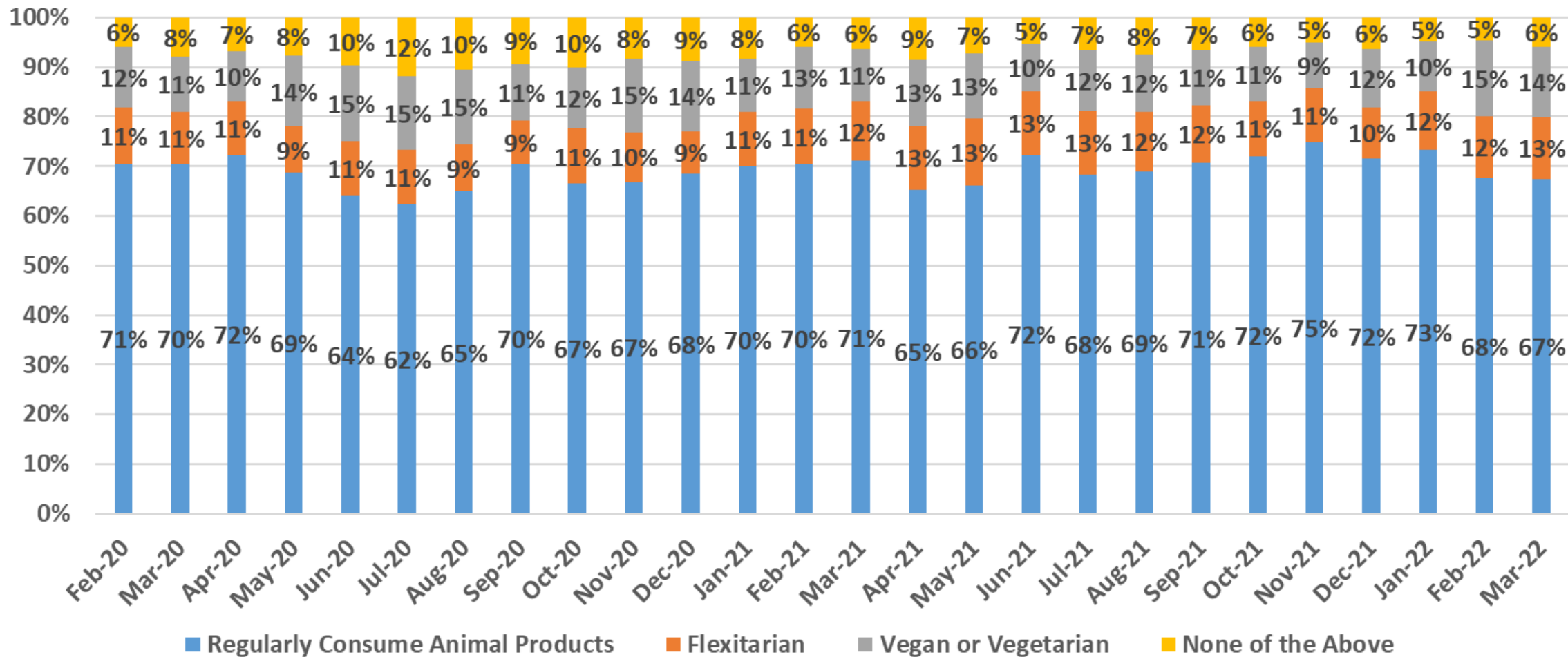


Master WTP Indices (Feb 20' = 100), Ground Beef/Hamburger Offerings

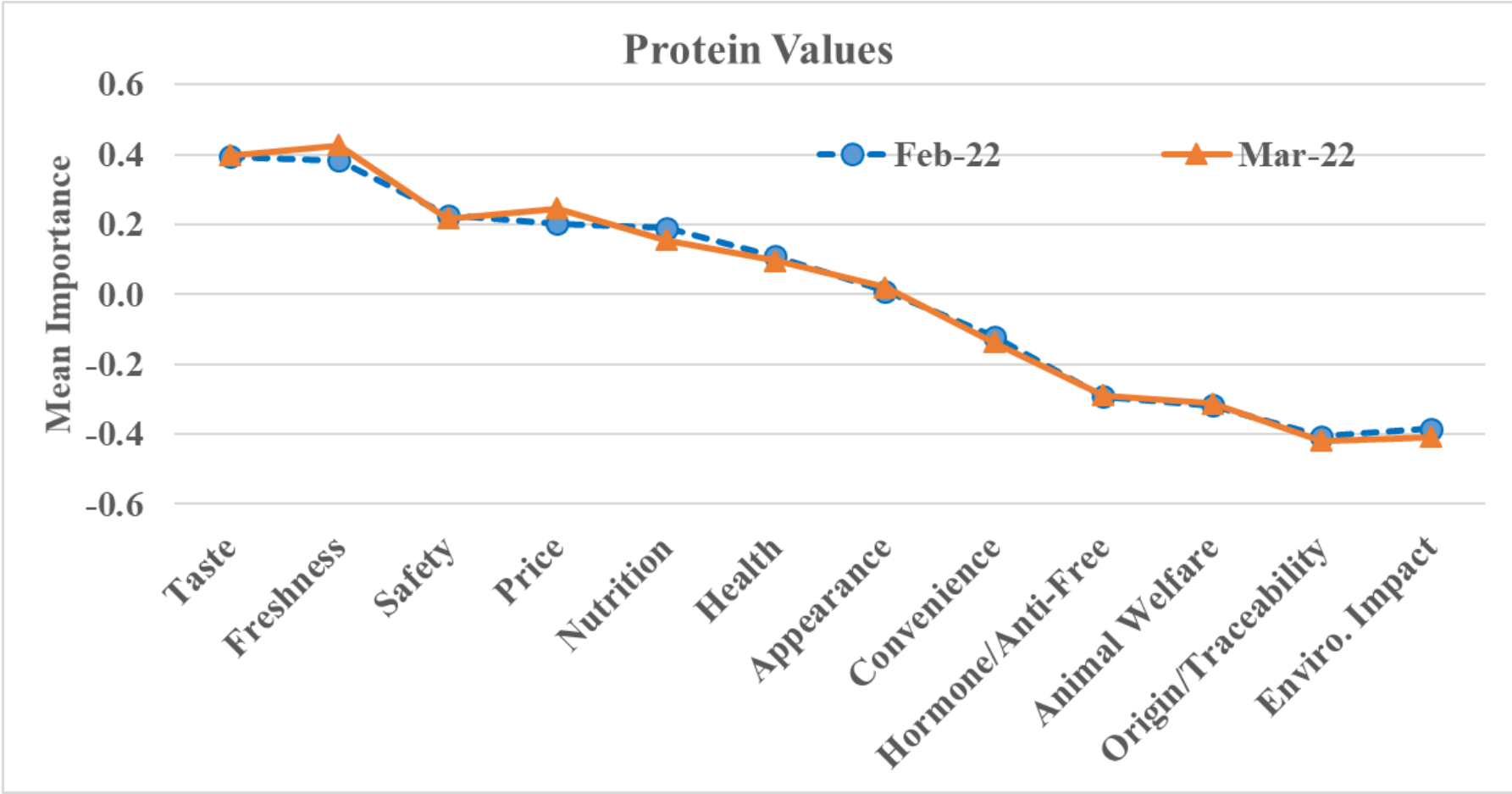


# Self-Declared Diet Tracking

Self-Declared Diet, Feb 2020 - Mar 2022 (Source: MDM Project)

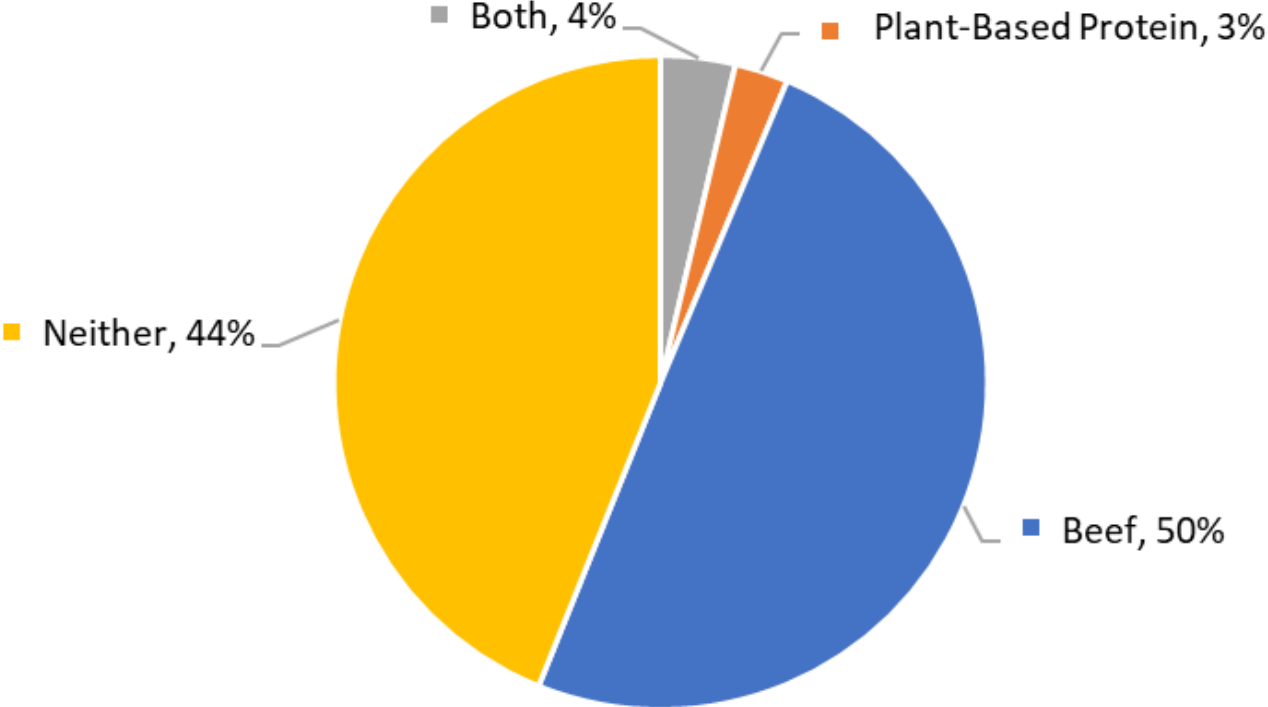


# Protein Values – What Drives Purchasing?



Taste is ~1.6x importance of Price  
Convenience is ~3x importance of Env. Impact or Origin/Traceability

# Prior-Day Meals: Beef &/or Plant-Based Summary







*Impacts of New  
Plant-Based Protein  
Alternatives on  
U.S. Beef Demand*

Dr. Glynn Tonsor, Kansas State University  
Dr. Jayson Lusk, Purdue University  
Dr. Ted Schroeder, Kansas State University

<https://www.agmanager.info/livestock-meat/meat-demand/meat-demand-research-studies/impact-new-plant-based-protein-0>

## Market potential of new plant-based protein alternatives: Insights from four US consumer experiments

Glynn T. Tonsor<sup>1</sup> | Jayson L. Lusk<sup>2</sup> | Ted C. Schroeder<sup>1</sup>

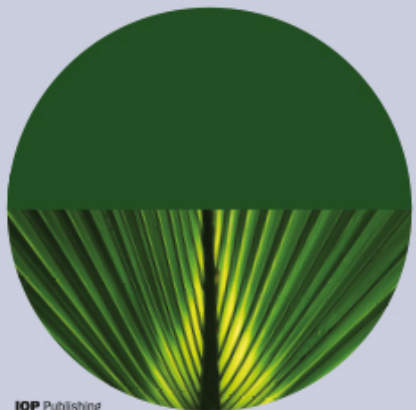
### Example findings:

Regular meat consumers are much less likely than those declaring an alternative diet (vegan, vegetarian, flexitarian, or other) to select a plant-based item when a beef item is available.

- Characteristics of consumers most likely to select plant-based proteins include younger, those with children under the age of 12 years, having higher household income, residing in a Western state, and affiliating with the Democratic party.

Changes in the price of beef and chicken have a much larger impact on consumer decisions to buy beef than the impact of changes in the price of plant-based offerings. This means plant-based burgers are relatively weak substitutes for beef.

- **...growth in the market share of plant-based alternatives is not entirely coming at the cost of reduced beef demand and indeed if a plant-based alternative simply replaces a substitute competitor (like a chicken sandwich) or reflects overall growth in protein demand, the impacts on beef demand are likely to be negligible.**



<https://iopscience.iop.org/article/10.1088/1748-9326/ac4fda>

“.. For every 10% reduction in price or increase in demand for PBM, we estimate U.S. cattle production falls approximately 0.15%, U.S. cattle producers' economic welfare falls by \$300 million per year, and U.S. consumer welfare rises by \$513 million per year. ”

<https://www.agmanager.info/livestock-meat/meat-demand/meat-demand-research-studies/impact-new-plant-based-protein-1>

<http://library.alt-meat.net/publication/frame.php?i=727246&p=&pn=&ver=html5>

- “K-State’s Glynn Tonsor for one, believes a meat tax is not the only path to a more sustainable protein industry”



# GT's Thought Framing Suggestions





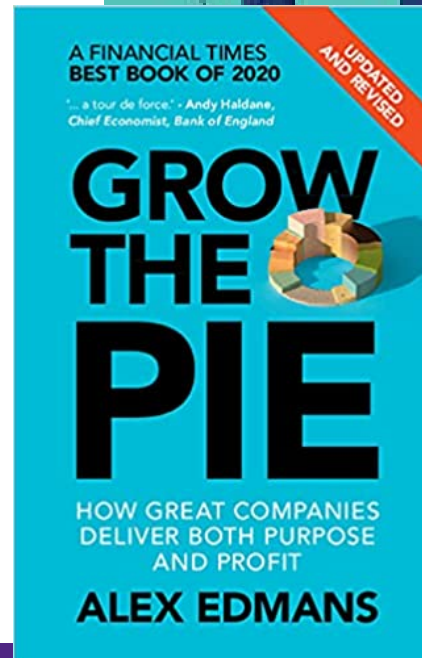
<http://library.meetingplace.com/publication/frame.php?i=727245&p=72&pn=&ver=html5>

“Any good business plan or policy needs a clearly stated goal... and I think there are conflicting goals...”

# What is the U.S. beef-cattle industry's future?



# What is the U.S. beef-cattle industry's future?

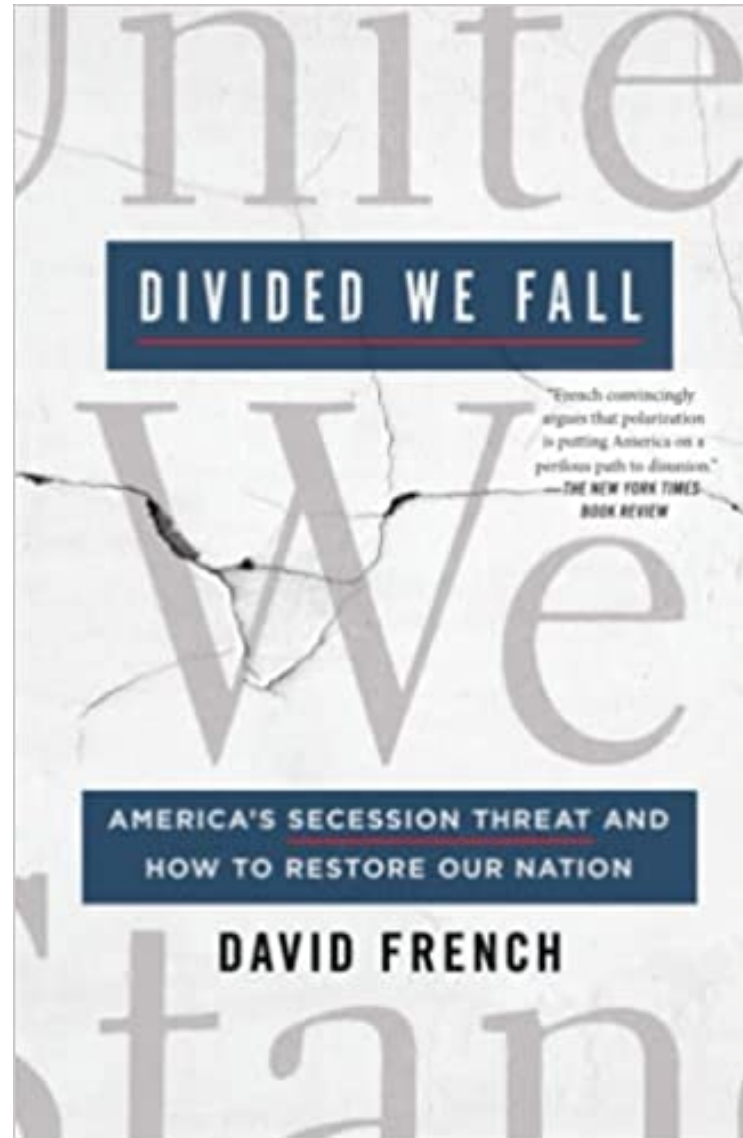






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*“MY DEAR BROTHERS AND SISTERS, TAKE NOTE OF THIS: EVERYONE SHOULD BE **QUICK TO LISTEN, SLOW TO SPEAK** ...” JAMES 1:19*



More information available at:



This presentation will be available in PDF format at:

<http://www.agmanager.info/about/contributors/individual/tonsor.asp>

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