

**Western
Wisconsin
Ag Lenders
Conference**



1983 - 2022

Thursday, January 6, 2022

8:30 a.m. – 3:30 p.m.

**In-person and virtual
options available**

The Agricultural Lenders Conference
is designed primarily for Lenders
and Agriculture professionals
who work with farm clientele.

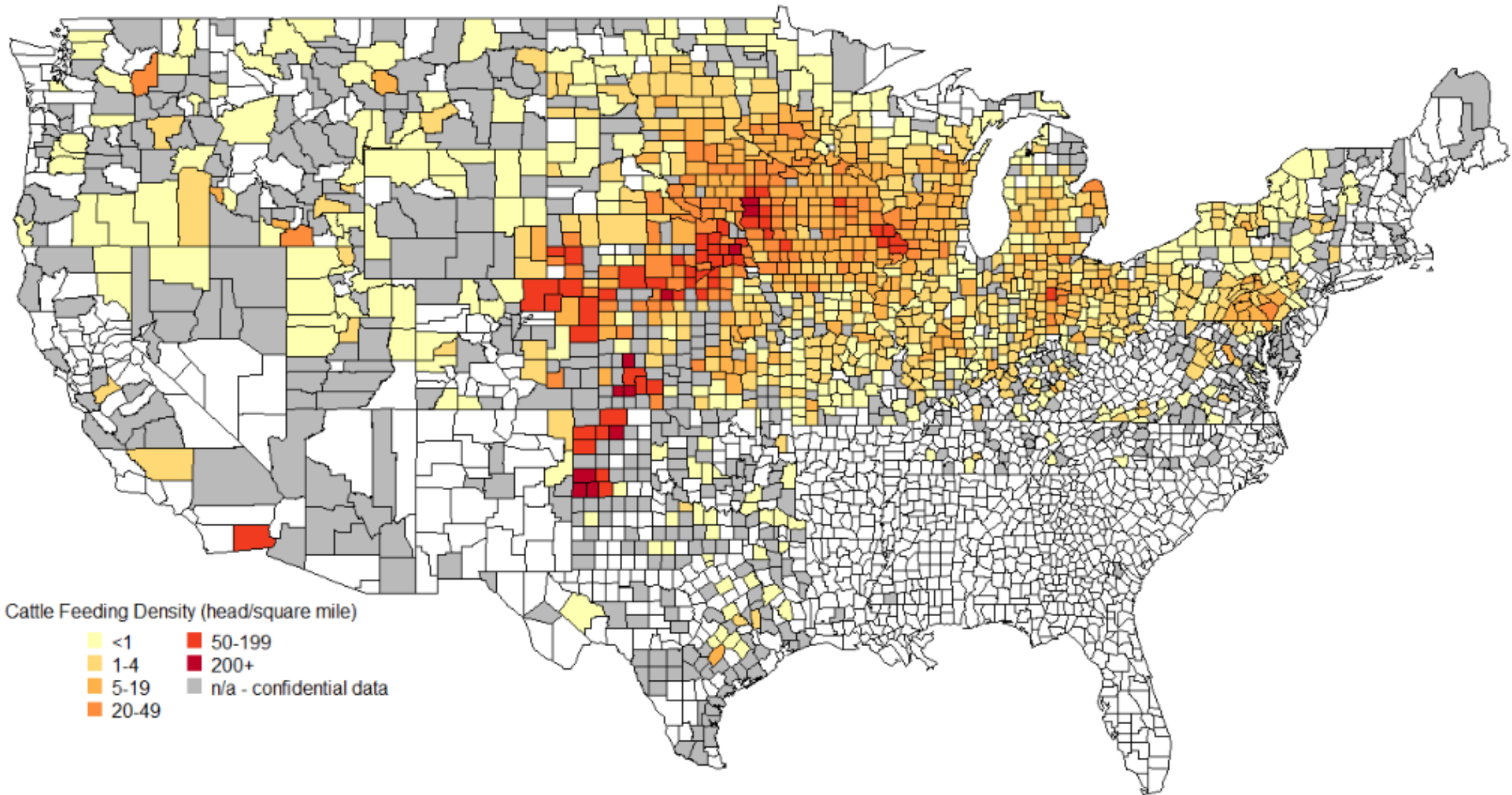
How Resilient is the Meat Supply Chain?

1. Lots of market analyst speak.
2. What is current packing capacity and what is the impact of shutting down? Or, expanding or opening?
3. What are the economic impacts of a foreign animal disease outbreak?

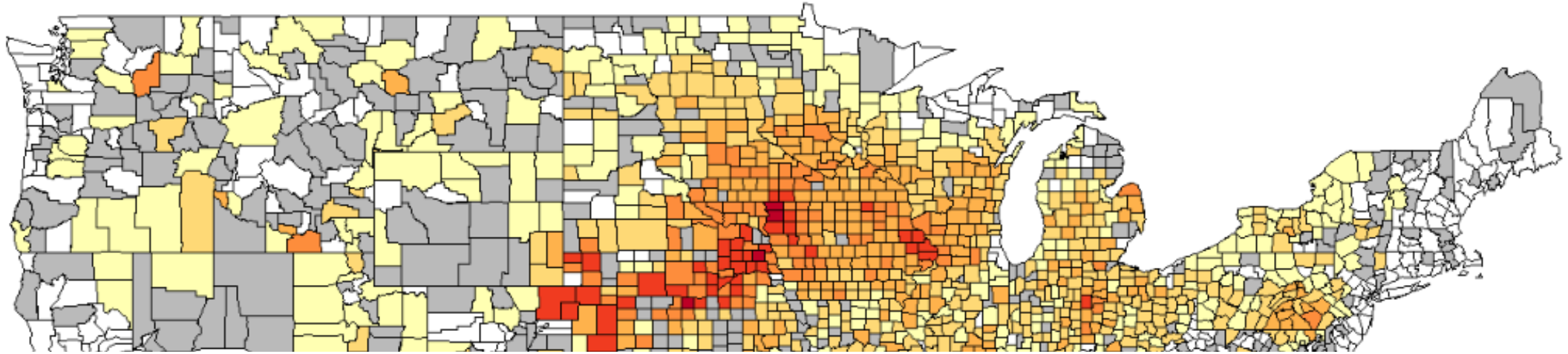
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Cattle on Feed by County

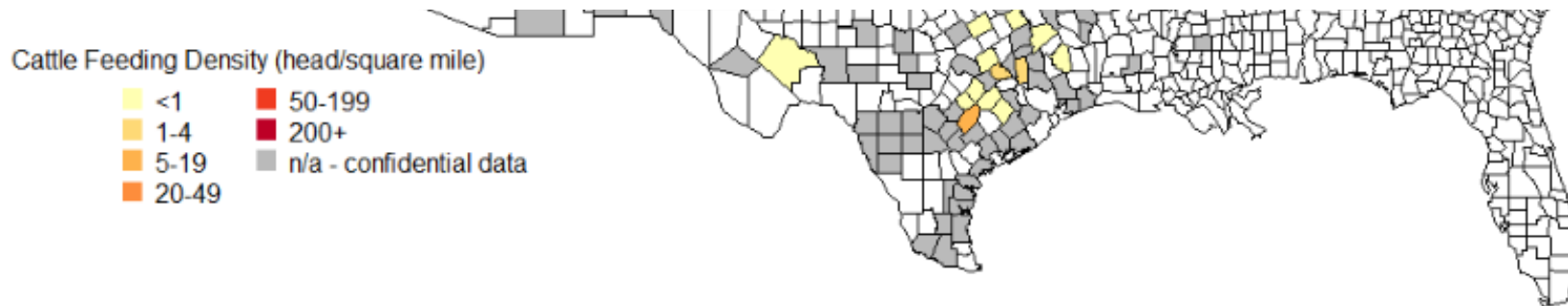


Cattle on Feed by County



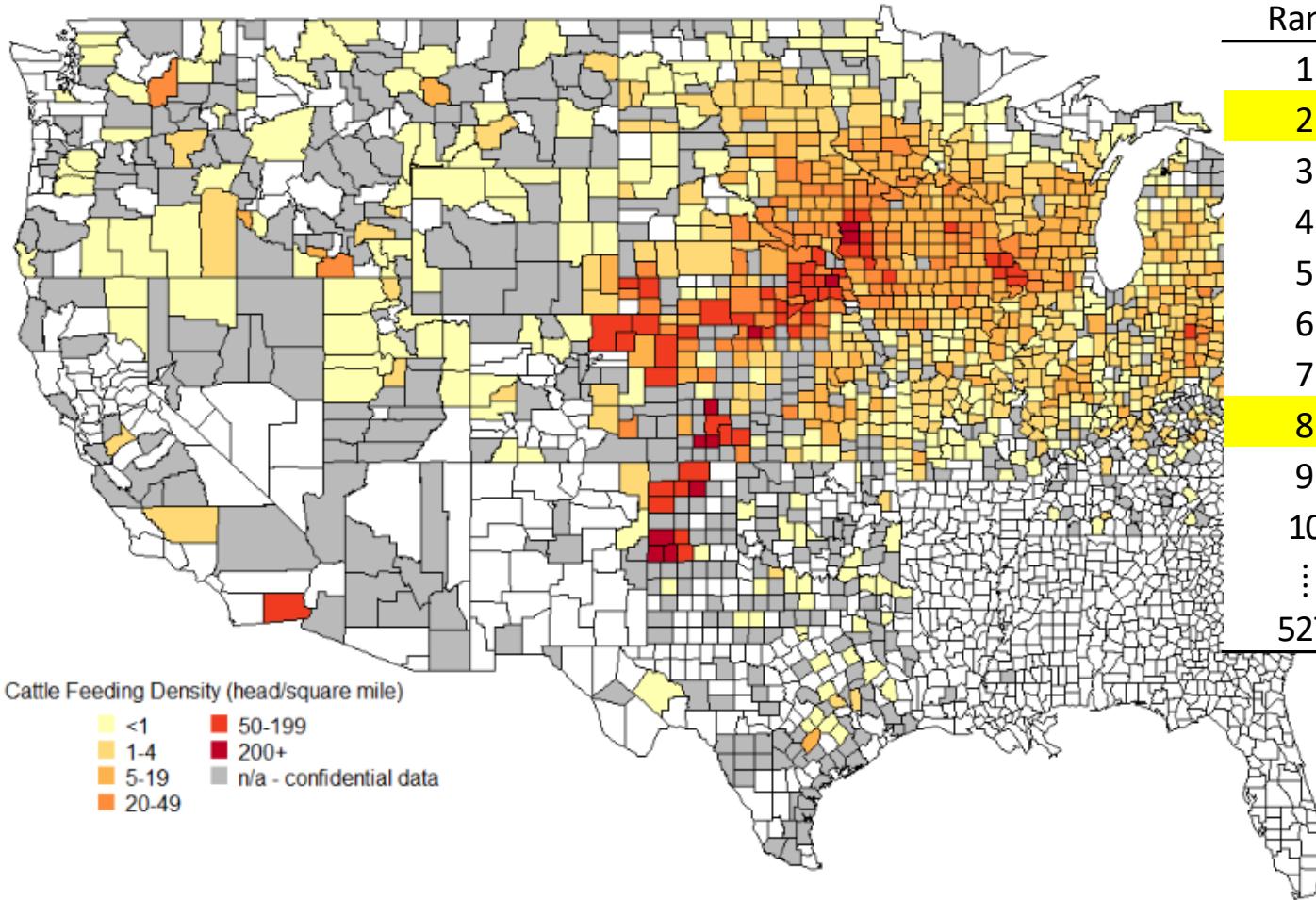
Where does Wisconsin rank?

(as measured by the number of operations with sales for slaughter)



3,007 counties in U.S.

Cattle on Feed by County



Cattle Feeding Density (head/square mile)

- <1
- 1-4
- 5-19
- 20-49
- 50-199
- 200+
- n/a - confidential data

3,007 counties in U.S. WI #3 state for operations
WI #14 state for sales

CATTLE, ON FEED, SALES FOR SLAUGHTER BY COUNTY, 2017

Rank	State	County	Operations	Avg. sales per
1	MINNESOTA	STEARNS	329	120
2	WISCONSIN	GRANT	263	112
3	IOWA	SIOUX	252	1,400
4	PENNSYLVANIA	LANCASTER	245	141
5	IOWA	DELAWARE	223	368
6	IOWA	LYON	222	727
7	IOWA	DUBUQUE	206	405
8	WISCONSIN	DANE	181	121
9	IOWA	WINNESHIEK	177	191
10	MINNESOTA	GOODHUE	152	101
⋮	⋮	⋮	⋮	⋮
527	TEXAS	DEAF SMITH	16	44,562

CATTLE, ON FEED, SALES FOR SLAUGHTER, 2017

Rank	State	Operations	Avg. sales per
1	IOWA	5,485	873
2	MINNESOTA	3,434	206
3	WISCONSIN	3,198	86
4	NEBRASKA	2,038	2,444
⋮	⋮	⋮	⋮
17	TEXAS	360	13,308

Wisconsin Animal Operations and Inventory, 2017

Commodity	Operations	Inventory
Cattle	27,777 (6)	3,494,462 (9)
Beef cows	13,954 (17)	287,100 (30)
Milk cows	9,037 (1)	1,280,395 (2)
Cattle on feed	3,070 (3)	288,654 (10)
Hogs	2,198 (10)	298,879 (19)
Sheep, including lambs	2,845 (9)	80,688 (19)
Wool ¹	1,214 (6)	325,345 (18)
Goats	2,586 (19)	100,438 (9)
Milk	1,029 (10)	83,570 (1)
Angora	168 (12)	855 (24)
Meat and other	1,638 (19)	16,013 (31)
Equine, horses and ponies	12,220 (10)	74,879 (14)
Equine, mules, burros, and donkeys	2,091 (18)	4,485 (20)
Poultry	8,882 (8)	21,280,457 (24)
Layers	7,992 (8)	7,639,627 (14)
Pullets, replacement	987 (12)	1,887,998 (19)
Broilers	1,643 (7)	8,765,589 (22)
Turkeys	596 (19)	2,377,777 (13)
Other, including ducks and geese	2,381 (9)	609,466 (10)

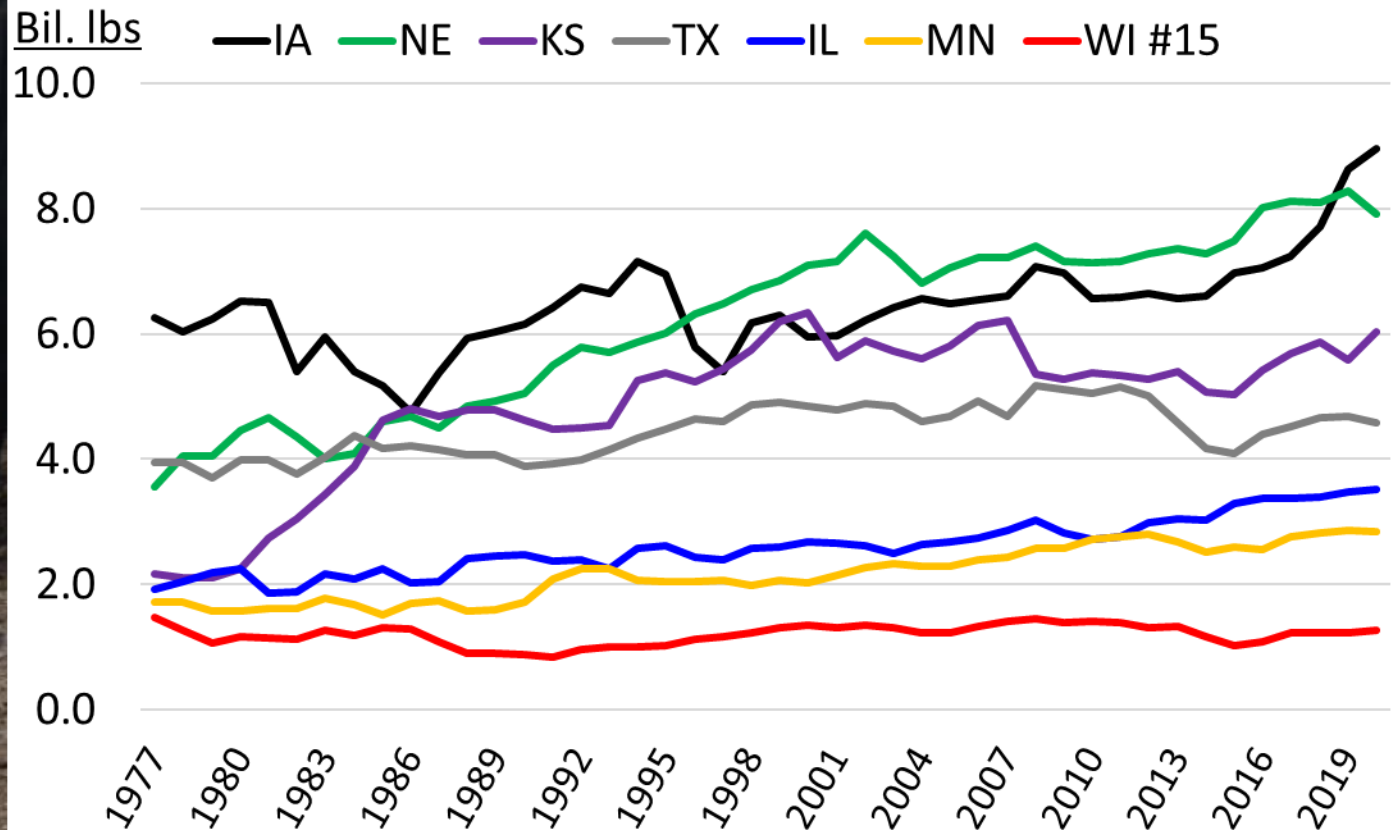
Commodity	Operations	Inventory
Miscellaneous and specialty species		
Alpacas	300 (11)	3,532 (10)
Bison	71 (6)	5,899 (9)
Deer	78 (9)	7,943 (4)
Elk	1,454 (3)	1,454 (8)
Llamas	339 (6)	1,649 (6)
Mink, live	67 (1)	342,885 (1)
Rabbits, live	297 (7)	8,901 (13)
Other, animals only ²	42 (24)	\$628,000 (16)
Other, products only ³	230 (4)	\$50,908,000 (1)

Data Source: USDA National Agricultural Statistics Service, 2017 Census of Agriculture. State rank in parenthesis. ¹Operations with production and production measured in pounds. ²Sales measured in dollars. ³Operations with production and sales measured in dollars.

Meat production increased 664 mil. lbs. (1.2%) in 2020



COMMERCIAL RED MEAT PRODUCTION



Despite COVID-19, Iowa leads meat production

Iowa has led the nation in commercial red meat production the last two years. Prior to that, Nebraska had that distinction for 23 consecutive years, 1996-2018. From 1977 to 1995, Iowa held the title — except in 1986, when Kansas had the top spot.

No Worries You're on Mute
Wait, What? Circle
Asking for a Friend Back

BANISHED WORDS 2022
for Misuse, Overuse, and Uselessness
A Tradition Since 1976

New
Normal
Supply Chain

Deep That Being Said
Dive At the End of the Day



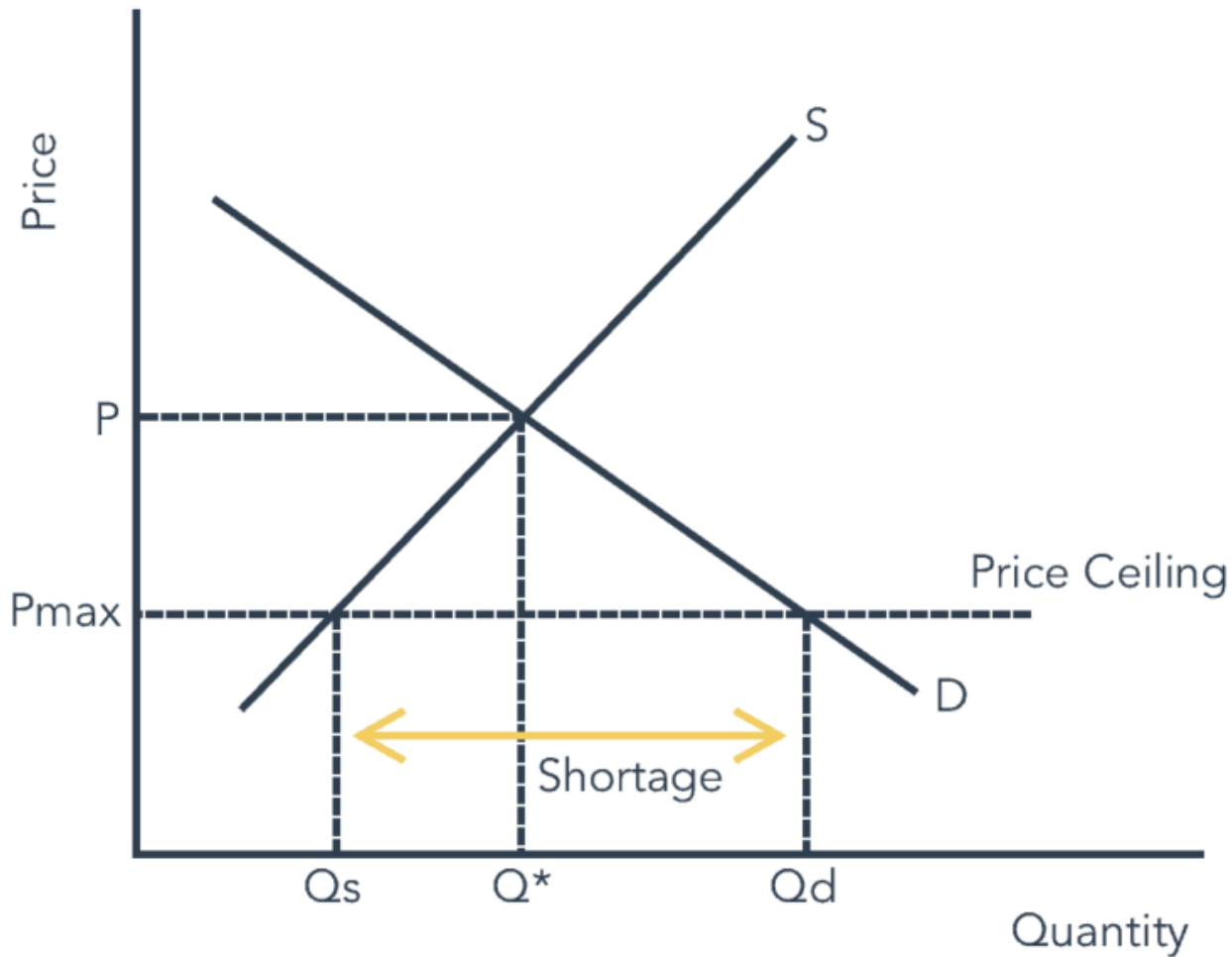
LAKE SUPERIOR
STATE UNIVERSITY

#10. Supply chain

Word-watchers noticed the frequent, unfortunate appearance of this phrase toward the end of this year as the coronavirus persisted. “It’s become automatically included in reporting of consumer goods shortages or perceived shortages. In other words, a buzzword,” concluded one analyst. “Supply chain issues have become the scapegoat of everything that doesn’t happen or arrive on time and of every shortage,” noticed another. The adverse result: overuse ad nauseam.

LSSU has compiled an annual Banished Words List since 1976 to uphold, protect, and support excellence in language by encouraging avoidance of words and terms that are overworked, redundant, oxymoronic, clichéd, illogical, nonsensical—and otherwise ineffective, baffling, or irritating.

In a free market, no shortage of any commodity ever exists!!!

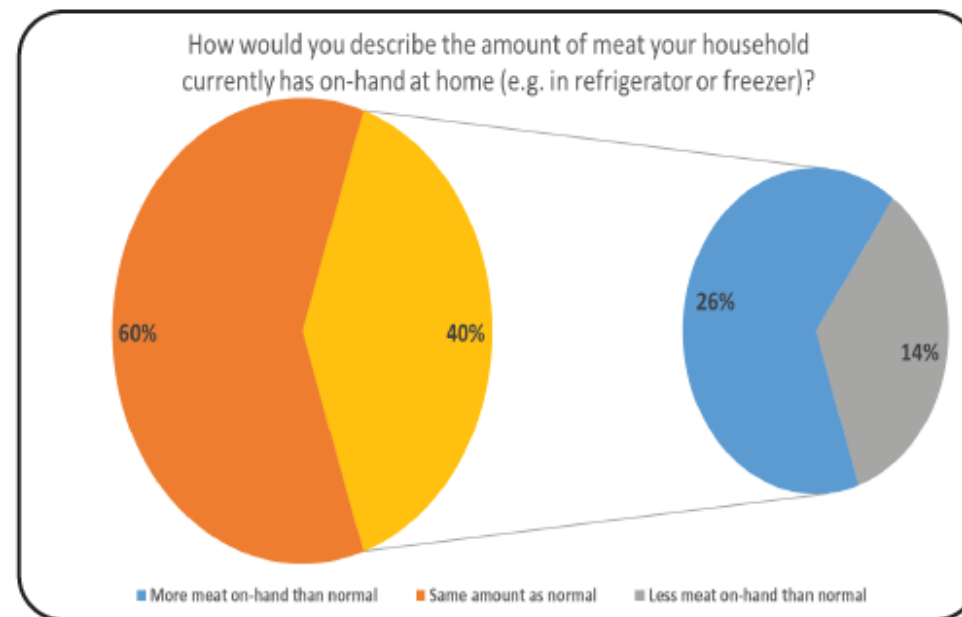


- ✓ An increase in demand or a decrease in supply brings a price increase, not a shortage
- ✓ A price increase is what prevents a shortage
- ✓ There will always be a shortage if price is somehow held below what marginal buyers in a free market would be willing, or perhaps able, to pay for it

On March 18, 2050, Tim opened the last package of toilet paper bought by his parents in 2020.



In the ongoing May MDM survey, new questions were added about meat availability reflecting industry challenges in harvesting animals due to COVID19. One new question asked *“How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer?)”*



During the May 4th – 10th period, over 675 respondents had completed the survey and the majority (60%) would describe the meat on-hand as the “same amount as normal.” Perhaps consistent with “stocking-up” behavior in March and April, there are more respondents indicating they have more meat on-hand than normal (26%) than those indicating they have less meat than normal (14%). Stated differently, of those indicating amounts differing from normal, two-thirds have more meat than normal on hand and one-third have less.

Glynn Tonsor, Kansas State University, gtonsor@ksu.edu
Jayson Lusk, Purdue University, jlusk@purdue.edu

KANSAS STATE
Department of
Agricultural Economics
May 12, 2020 Special Report

MDM: Meat Demand Monitor

The MDM tracks U.S. consumer preferences, views, and demand for meat with separate analysis for retail and food service channels. MDM is a monthly online survey with a sample of over 2,000 respondents reflecting the national population.

COVID-19 and the agri-food system in the United States and Canada

Alfons Weersink^{a,*}, Mike von Massow^a, Nicholas Bannon^a, Jennifer Ifft^b, Josh Maples^c, Ken McEwan^a, Melissa G.S. McKendree^d, Charles Nicholson^e, Andrew Novakovic^f, Anusuya Rangarajan^f, Timothy Richards^g, Bradley Rickard^f, James Rude^h, Meagan Schipanskiⁱ, Gary Schmitkey^j, Lee Schulz^k, Daniel Schuurman^a, Karen Schwartzkopf-Genswein^l, Mark Stephenson^m, Jada Thompsonⁿ, Katie Wood^a



https://www.sciencedirect.com/science/article/pii/S0308521X20309008?dgcid=rss_sd_all

COVID-19 Working Paper: Changes in Regional Hog Slaughter During COVID-19

Samantha L. Padilla, Lee L. Schulz, Kate Vaiknoras, Matthew J. MacLachlan

<https://www.ers.usda.gov/webdocs/publications/102784/ap-095.pdf?v=2267.7>

○ Resilience is a difficult concept to define

○ Ability to react to shocks quickly, to observe shocks once they occur, and to be able to increase the flow of product over a short time frame (Christopher and Peck, 2004)

- manufactured-goods
- does not consider biology

○ Ability to prepare, respond and recover from disturbances and afterwards maintain a positive steady state operation in an acceptable cost and time (Ribeiro and Barbosa-Povoa, 2018)

➤ Can define resilience as ability to match or surpass 2019 levels in 2020

Livestock Mandatory Reporting Background

In the mid-1990's, there were growing concerns in the industry and Congress over packer concentration as meat packing companies were consolidating and getting larger. This was captured in a 1996 report, [Pork Price Reporting Improvement Initiative](#), as a survey of pork industry packers. In the fall of 1998, the swine industry faced an oversupply situation, and negotiated slaughter hog prices fell to historically low levels. At the same time, some hog producers were engaged in alternative formula contracts that did not decline in value as much. The resulting outcry from this scenario and the ongoing concentration concerns prompted Congress to pass the [Livestock Mandatory Reporting Act of 1999](#) (1999 Act) [Pub. L. 106-78, Title IX].

As an amendment to the Agricultural Marketing Act of 1946, the 1999 Act established a program of information about the marketing of cattle, swine, lambs, and the products of such livestock to provide information readily understood by producers; improve the price and supply reporting services of the U.S. Department of Agriculture (USDA); and encourage competition in the marketplace for livestock and livestock products. On April 2, 2001, the USDA's Agricultural Marketing Service (AMS) implemented the Livestock Mandatory Reporting program (LMR) ([65 FR 75464](#) and [66 FR 8151](#)) as required by the 1999 Act.

NATIONAL NET PRICE DISTRIBUTION

June 22, 2020, Barrows & Gilts

Head Count

25,000

20,000

15,000

10,000

5,000

0

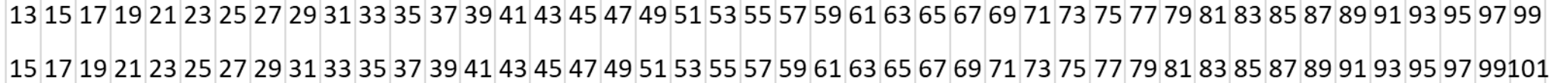
Price

Range

- Negotiated
- Other Market Formula
- Swine or Pork Market Formula
- Other Purchase Arrange
- Packer Sold (All Purchase)

Wtd. Avg. Net Price

Negotiated	\$27.33
Other Market Formula (FUT/OPT)	\$67.00
Swine or Pork Market Formula	\$46.62
Other Purchase Arrange	\$60.19
Packer Sold (All Purchase)	\$45.05



Data Source: USDA-AMS-LPGMN

LM_HG215 National Daily Direct Hog Prior Day Report-Average Net Price Distribution

Hog Price Forecasts



12/30/2021



12/15/2021



Iowa/Minnesota

CME Group LM_HG204

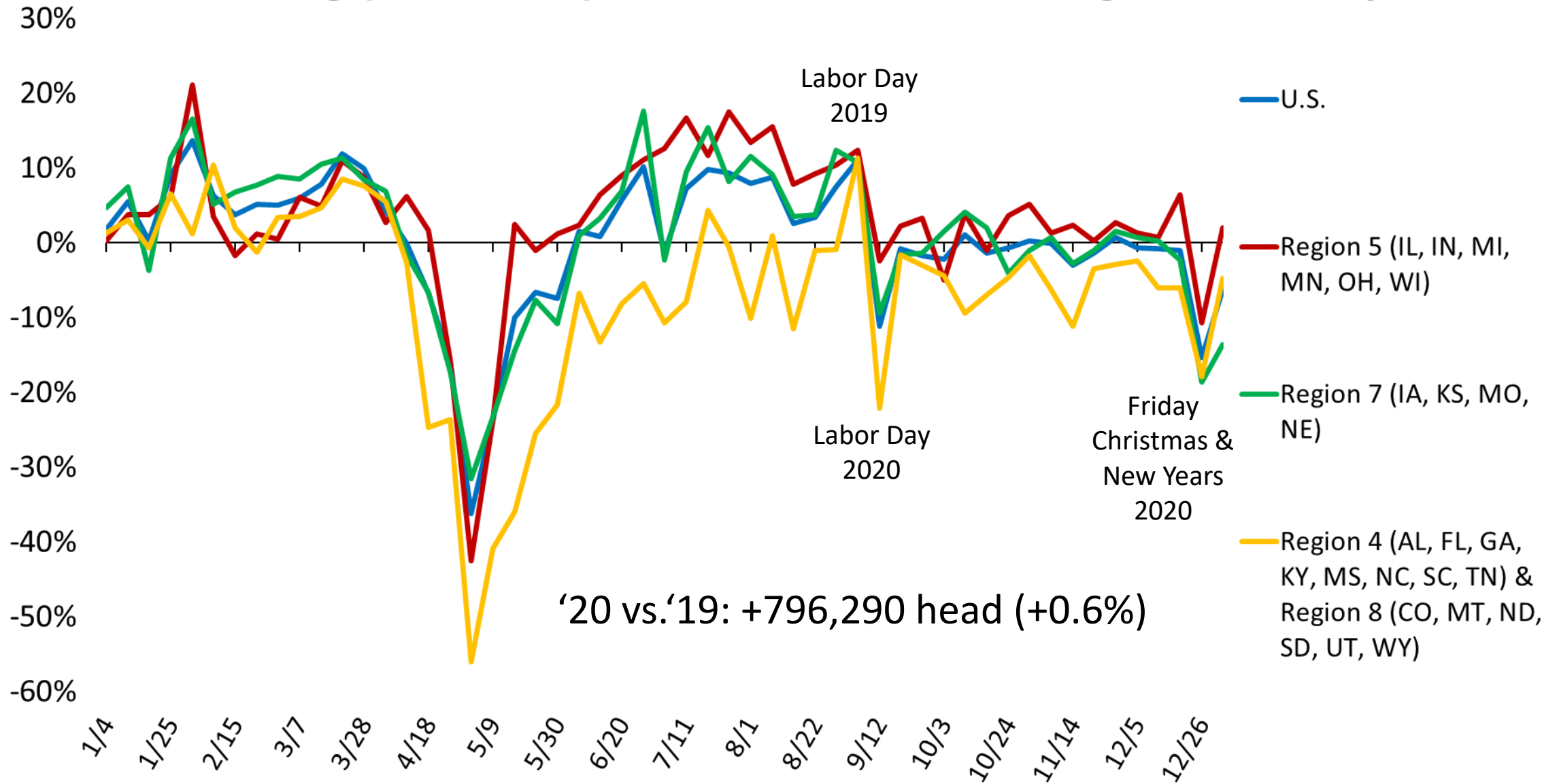
12/28/2021

		National Wtd Avg. Base	National Base 51-52% Lean	IA/MN All Prod Sold	Composite Price/Forecast	% Chg from Year Ago
2018		64.68	61.65	64.27		
2019		67.44	64.36	67.66		
2020	Q1	61.29	57.07	60.88		
	Q2	58.79	52.30	56.30		
	Q3	57.87	54.36	57.55		
	Q4	68.57	68.12	68.84		
	Year	61.63	57.96	60.89	60.16	-10%
2021	Q1	75.79	74.78	76.87	75.82	27%
	Q2	104.84	108.62	105.14	106.20	90%
	Q3	99.68	102.21	98.84	100.24	77%
	Q4	78.00	75.17	77.12	76.76	12%
	Year	89.58	90.20	89.49	89.76	49%
2022	Q1	82.50	83.22	82.56	82.76	9%
	Q2	93.00	85.91	93.81	90.90	-14%
	Q3	90.50	80.54	91.72	87.59	-13%
	Q4	78.00		78.96	78.48	2%
	Year	86.00	80.87	85.24	84.04	-6%

IA/MN
 1998: \$43.23
 1999: \$44.03
 2003: \$52.75
 2009: \$56.96

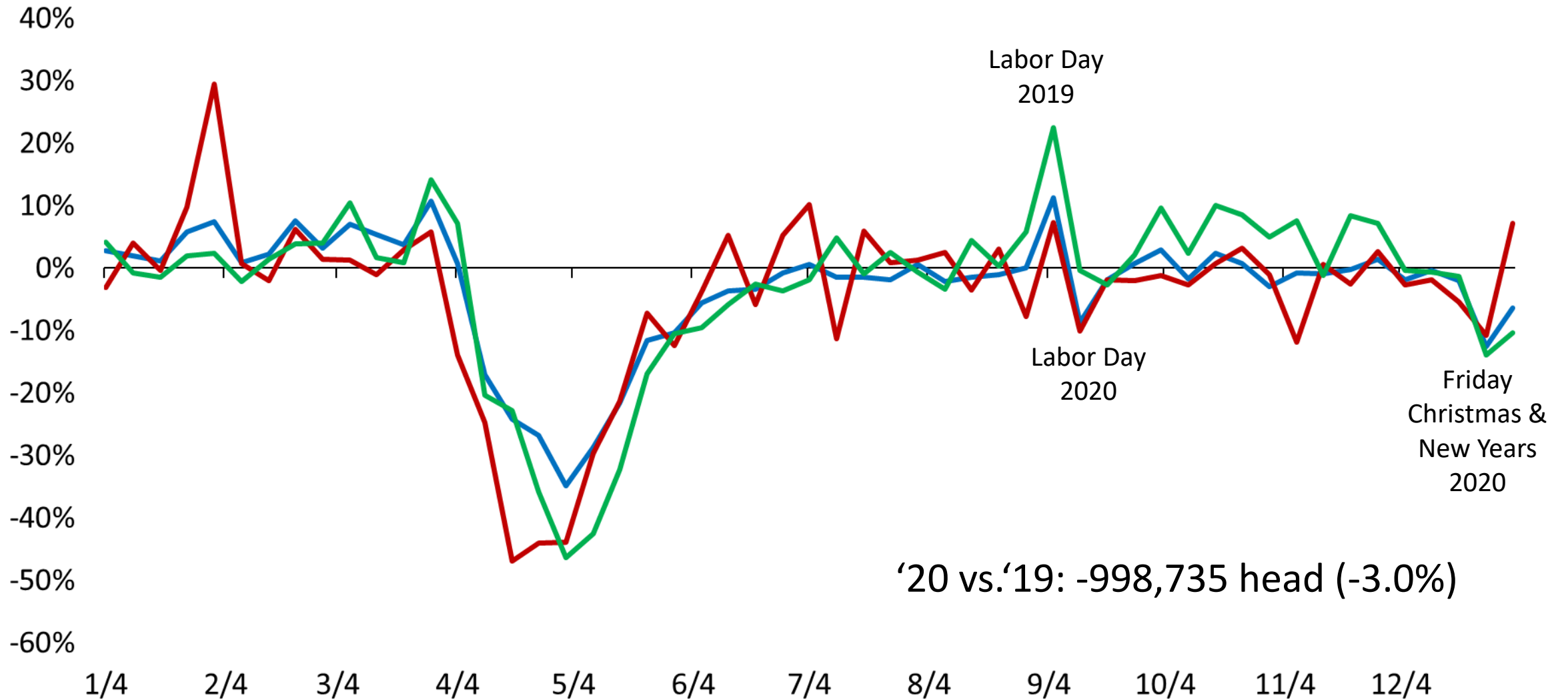
2nd highest to 2014
 \$100.64 (IA/MN)

Pct. Chg ('20 vs. '19) in FI Barrow & Gilt Slaughter, Weekly



Pct. Chg ('20 vs. '19) in FI Cattle Slaughter, Weekly

— U.S. — Region 5 (IL, IN, MI, MN, OH & WI) — Region 7 (IA, KS, MO & NE)



'20 vs. '19: -998,735 head (-3.0%)

Disruptions truly historic and never experienced by most involved

- Global nature of pandemic
- Heightened vulnerability where labor is most involved

Ability to adapt and begin the process of recovery has been remarkable

Not surprisingly, calls for long-term structural changes

- e.g., automation; added cold storage; number, size, or design of facilities

Calculus involved in making such changes is complicated

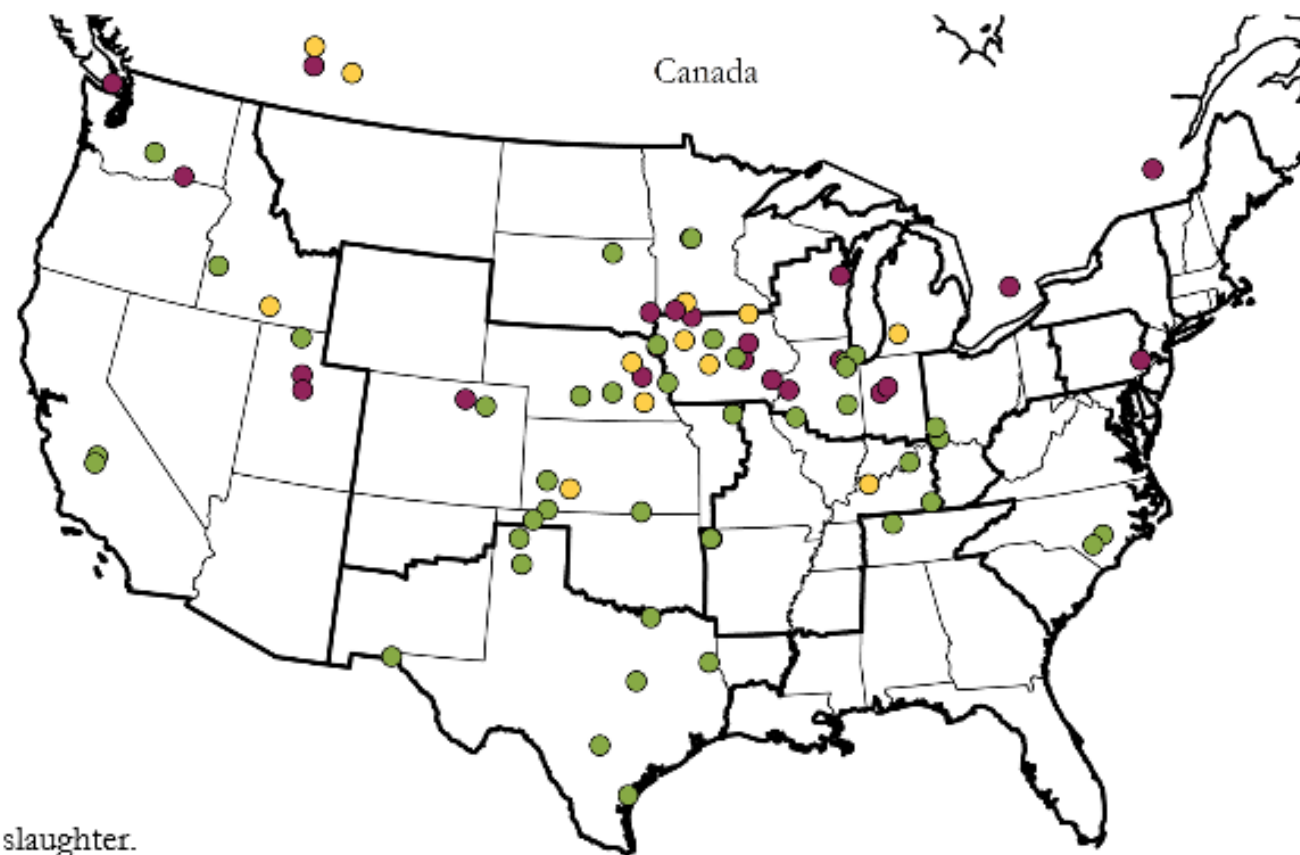
- Appreciate economic forces driving industry's development to date
- Sound research-based information should guide decisions

Careful balance between efficiency during “normal times” and resiliency

Map 1: Meat Packing Plants Affected by COVID-19

Status as of 7/13/2020

- Positive COVID-19 cases, but never closed
- Closed for less than one week - subsequently reopened
- Closed for more than one week - subsequently reopened



Note: Includes beef and pork plants that purchase animals for slaughter.

Sources: Food & Environment Reporting Network, Drovers, Meat+Poultry, and various local news outlets.

Occupational Employment and Wages, May 2020

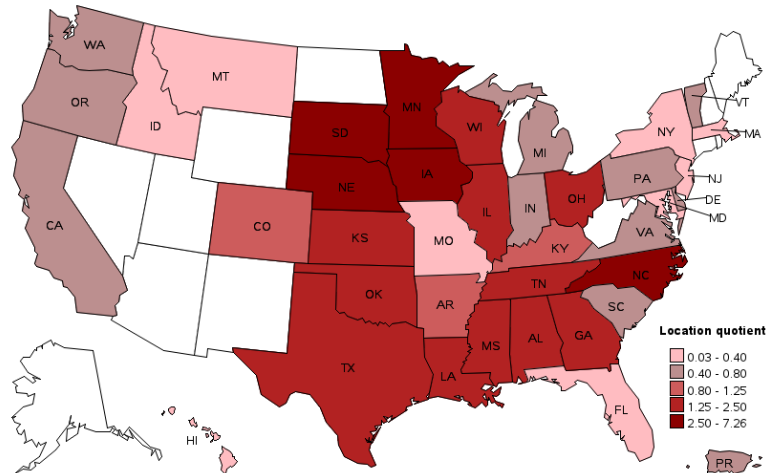
51-3023 Slaughterers and Meat Packers



U.S. BUREAU OF LABOR STATISTICS

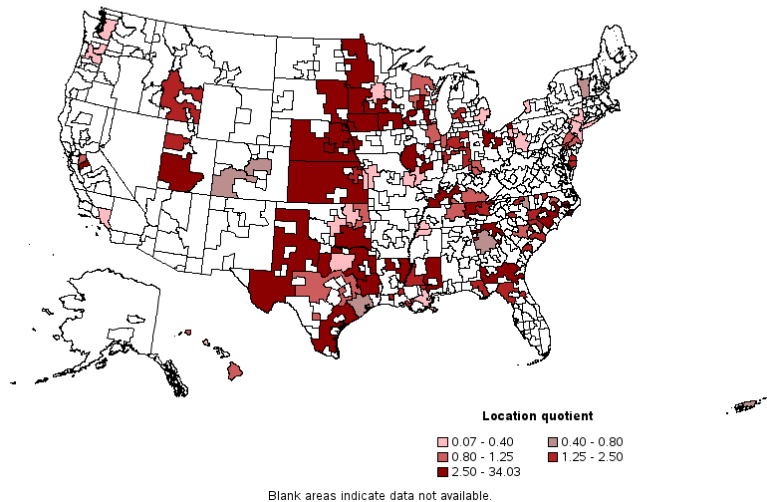
<https://www.bls.gov/oes/current/oes513023.htm>

Location quotient of slaughterers and meat packers, by state, May 2020



Blank areas indicate data not available.

Location quotient of slaughterers and meat packers, by area, May 2020



Blank areas indicate data not available.

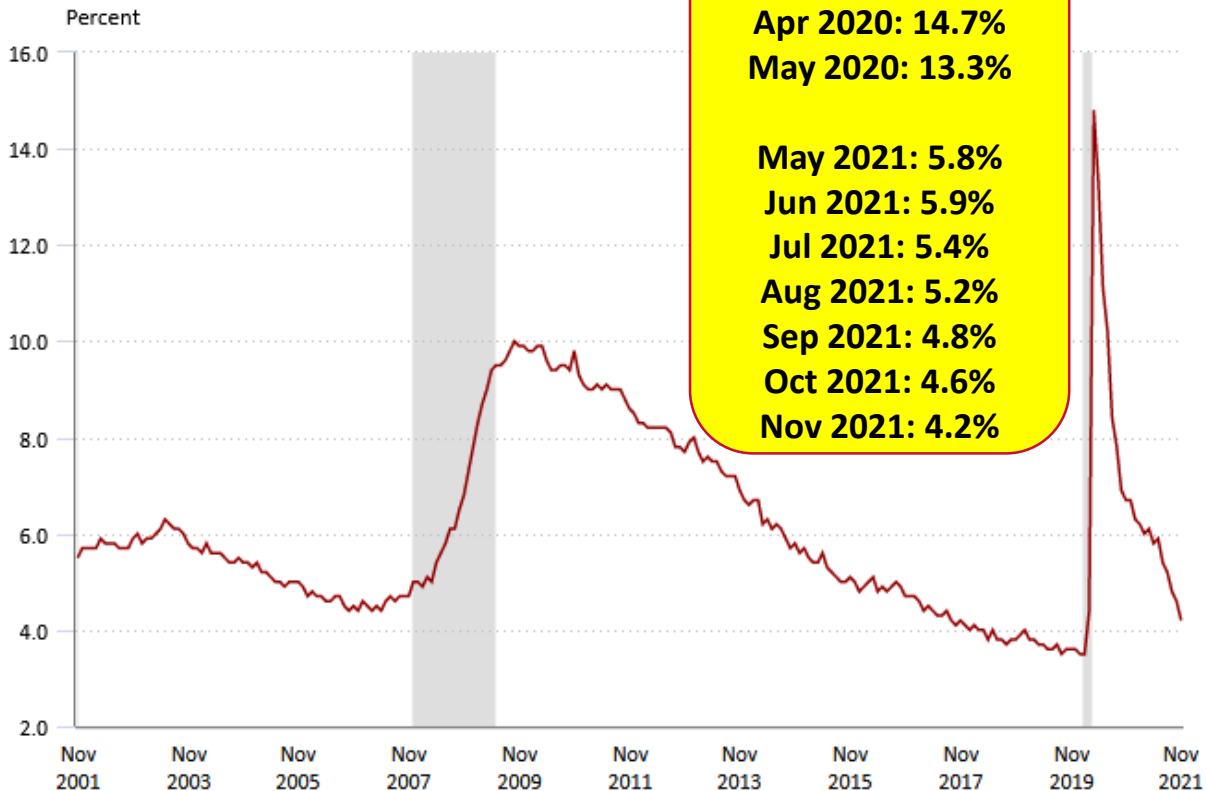
States with the highest concentration of jobs and location quotients in Slaughterers and Meat Packers:

State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
Iowa	5,980	4.07	7.26	\$ 16.25	\$ 33,800
Nebraska	2,200	2.34	4.17	\$ 15.64	\$ 32,520
South Dakota	870	2.11	3.77	\$ 16.24	\$ 33,780
Minnesota	5,590	2.06	3.68	\$ 15.79	\$ 32,830
North Carolina	6,340	1.48	2.64	\$ 14.75	\$ 30,680

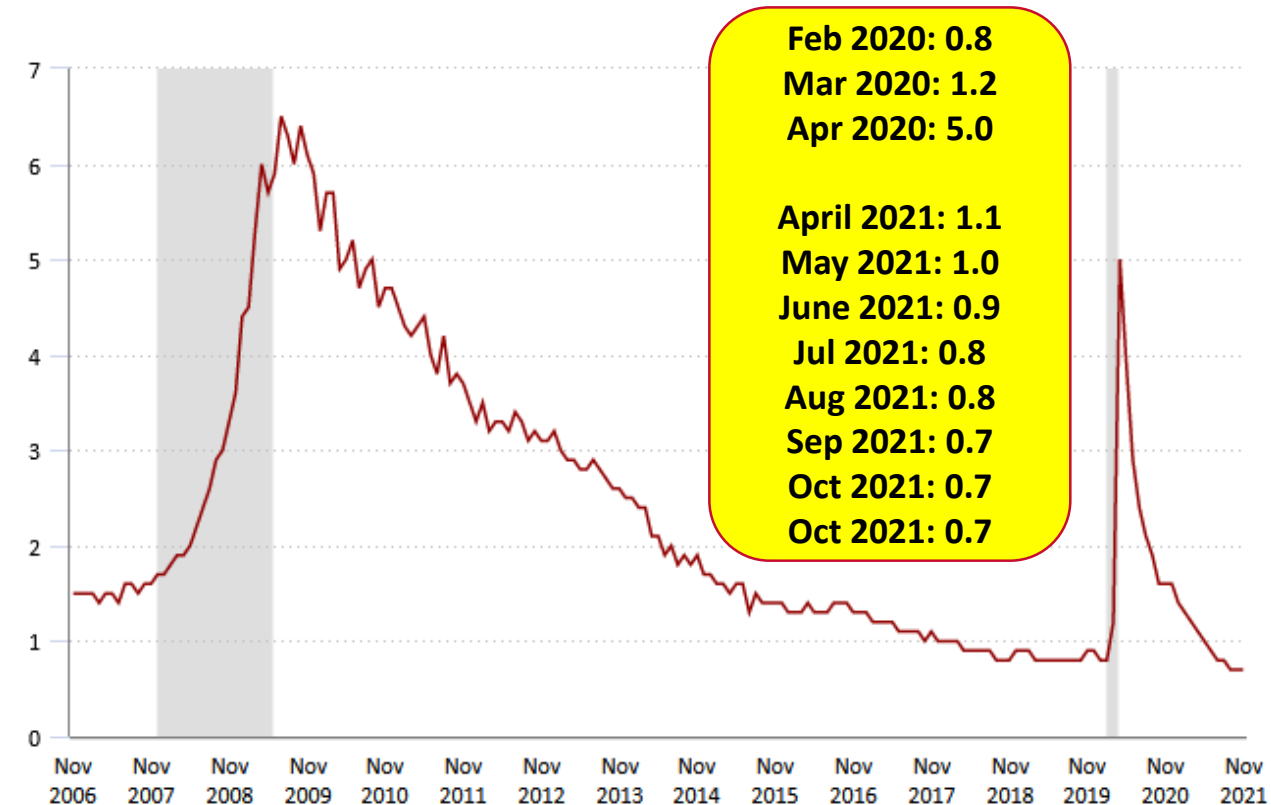
Metropolitan areas with the highest concentration of jobs and location quotients in Slaughterers and Meat Packers:

Metropolitan area	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
Sioux City, IA-NE-SD	1,100	13.99	24.95	\$ 15.61	\$ 32,460
Modesto, CA	1,000	5.54	9.89	\$ 14.39	\$ 29,930
Omaha-Council Bluffs, NE-IA	1,050	2.21	3.95	\$ 15.31	\$ 31,840
Grand Island, NE	70	1.70	3.03	\$ 16.12	\$ 33,530
Topeka, KS	130	1.28	2.28	\$ 14.49	\$ 30,140
Salisbury, MD-DE	160	1.06	1.88	\$ 14.70	\$ 30,570
Knoxville, TN	370	0.97	1.73	\$ 11.92	\$ 24,800
Grand Rapids-Wyoming, MI	400	0.78	1.39	\$ 14.62	\$ 30,420
Salt Lake City, UT	550	0.75	1.34	\$ 16.24	\$ 33,780
Rocky Mount, NC	30	0.65	1.17	\$ 14.98	\$ 31,160

Total Civilian Unemployment Rate, Seasonally Adjusted



Number of Unemployed Persons per Job Opening, Seasonally Adjusted



Data Source: Various sources

U.S. Bureau of Labor Statistics

Weekly Wholesale Pork Ham Prices

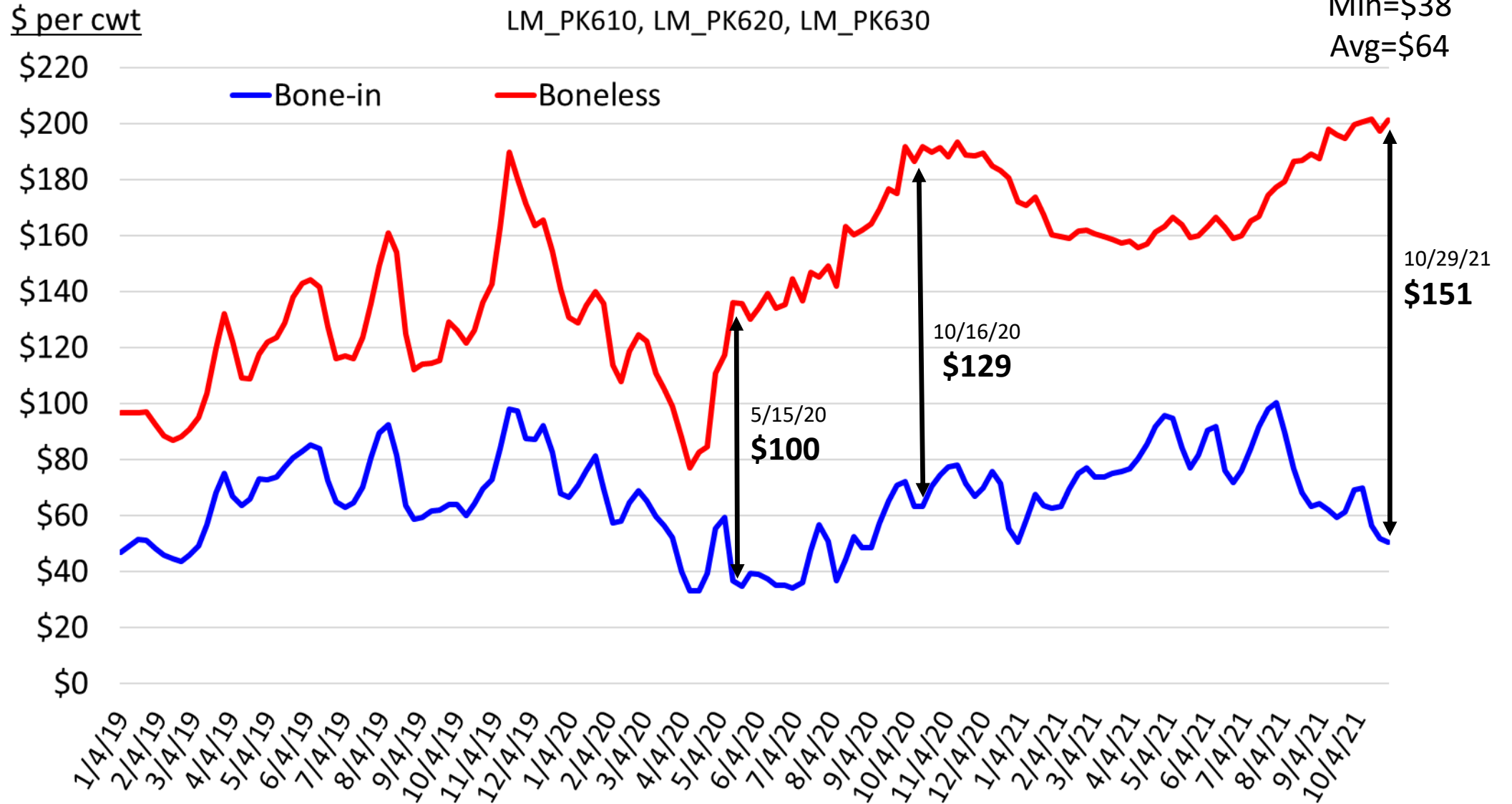
Since Apr-2013

FOB Plant, 23-27# Trmd Selected Ham, Insides-Outsides-Knuckles-Lite Butt
LM_PK610, LM_PK620, LM_PK630

Max=\$151

Min=\$38

Avg=\$64



Data Source: USDA-AMS-LPGMN

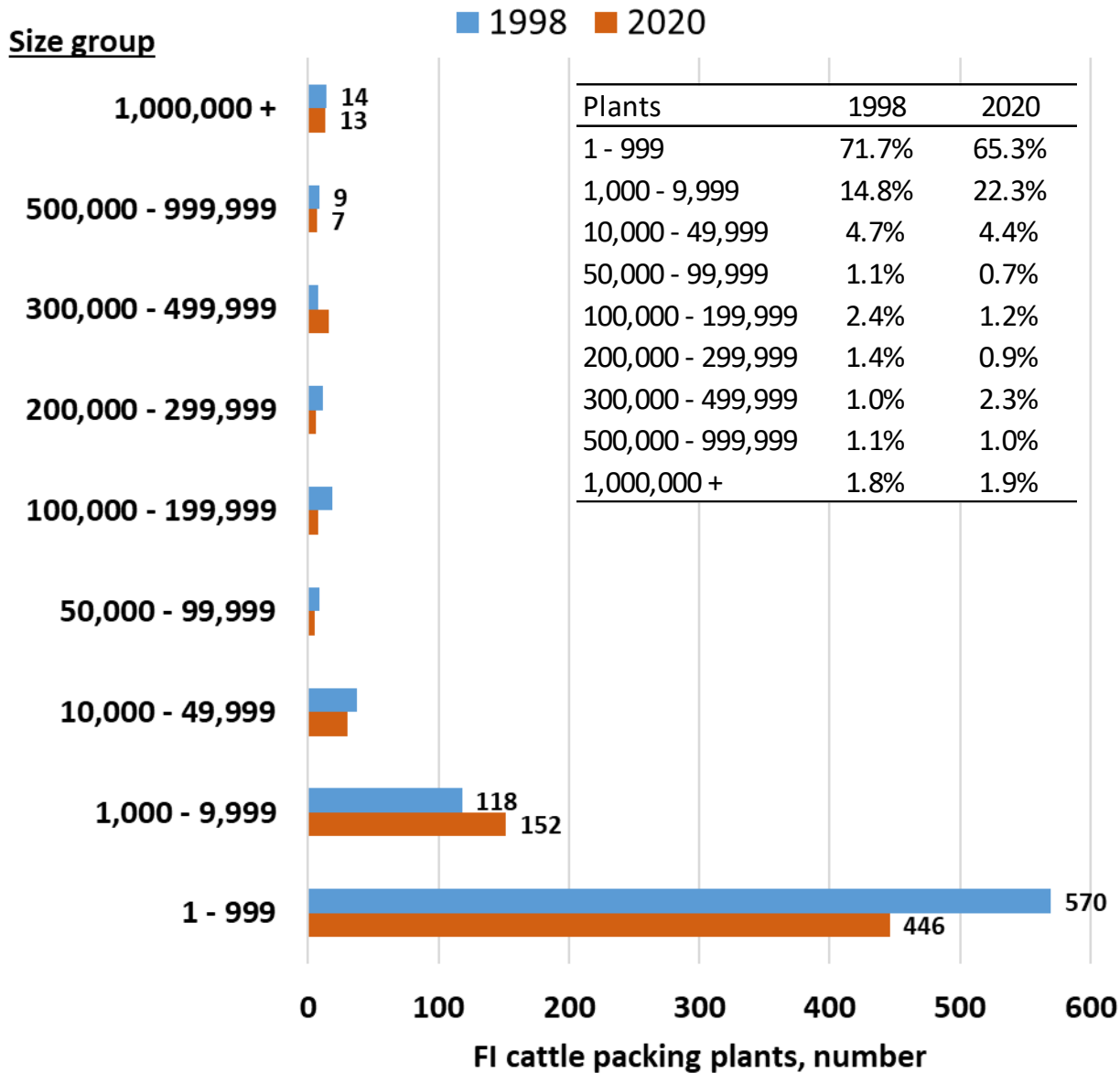
LM_PK610, LM_PK620, LM_PK630 National Weekly Pork Reports - FOB Plant

Cattle Federally Inspected Plants and Head Slaughtered by Size Group –United States: 2020

<u>Size group</u>	Plants		Head		Head per		
	Num.	Pct.	Thou	Pct.	Year	Week	Day
1 - 999	446	65.3%	170.9	0.5%	383	8	1
1,000 - 9,999	152	22.3%	349.2	1.1%	2,297	45	8
10,000 - 49,999	30	4.4%	726.4	2.3%	24,213	475	88
50,000 - 99,999	5	0.7%	396.8	1.2%	79,360	1,556	288
100,000 - 199,999	8	1.2%	1,084.9	3.4%	135,613	2,659	492
200,000 - 299,999	6	0.9%	1,537.2	4.8%	256,200	5,024	930
300,000 - 499,999	16	2.3%	6,378.4	19.8%	398,650	7,817	1,448
500,000 - 999,999	7	1.0%	4,188.6	13.0%	598,371	11,733	2,173
1,000,000 +	13	1.9%	17,319.1	53.9%	1,332,238	26,122	4,837
Total	683		32,151.5				

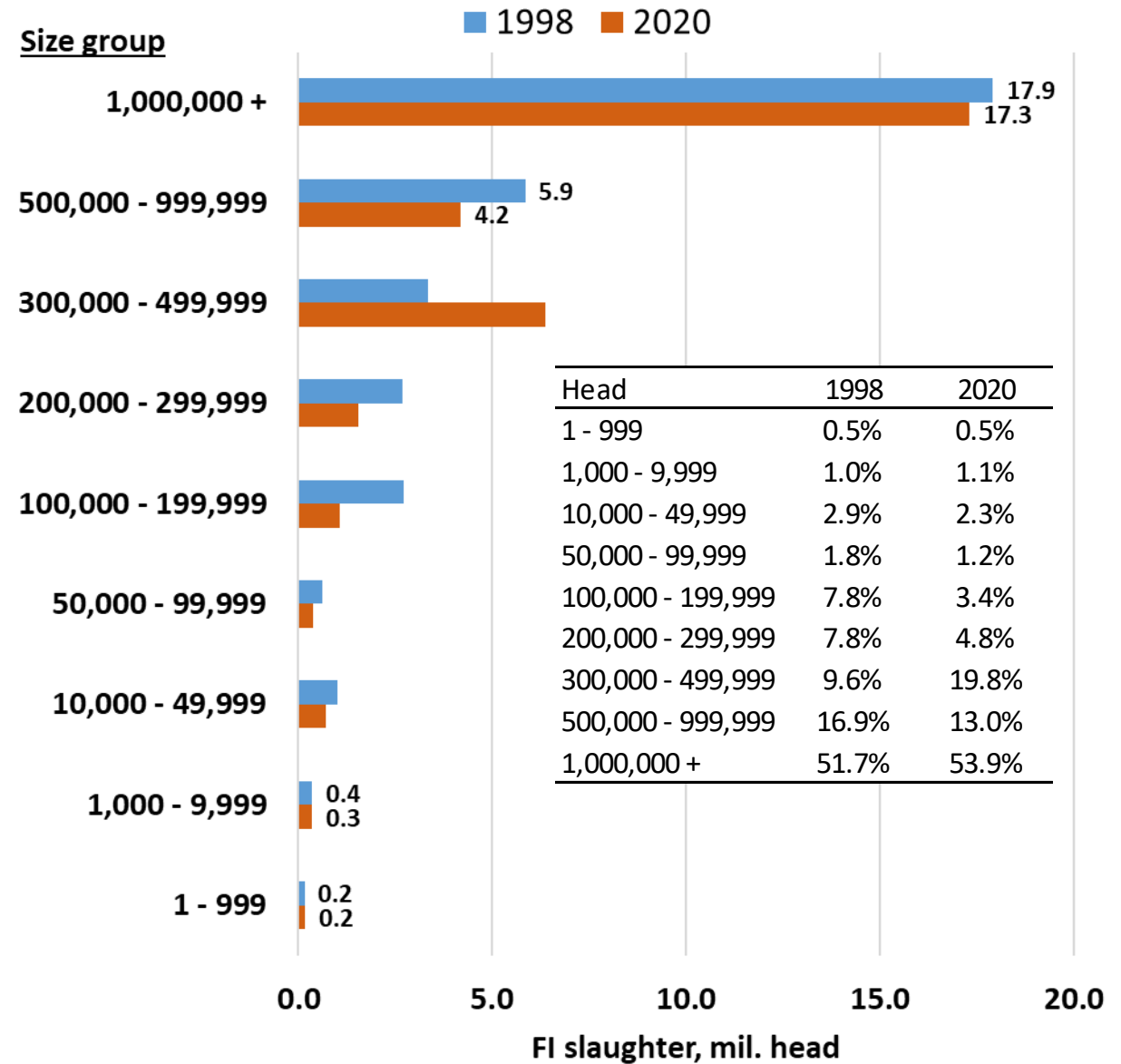
Mid-point of ranges
51 slaughter weeks per year
5.4 slaughter days per week

U.S. FI Cattle Slaughter—Number of Plants by Plant Size



Plants	1998	2020
1 - 999	71.7%	65.3%
1,000 - 9,999	14.8%	22.3%
10,000 - 49,999	4.7%	4.4%
50,000 - 99,999	1.1%	0.7%
100,000 - 199,999	2.4%	1.2%
200,000 - 299,999	1.4%	0.9%
300,000 - 499,999	1.0%	2.3%
500,000 - 999,999	1.1%	1.0%
1,000,000 +	1.8%	1.9%

U.S. FI Cattle—Head Slaughtered by Plant Size



Head	1998	2020
1 - 999	0.5%	0.5%
1,000 - 9,999	1.0%	1.1%
10,000 - 49,999	2.9%	2.3%
50,000 - 99,999	1.8%	1.2%
100,000 - 199,999	7.8%	3.4%
200,000 - 299,999	7.8%	4.8%
300,000 - 499,999	9.6%	19.8%
500,000 - 999,999	16.9%	13.0%
1,000,000 +	51.7%	53.9%

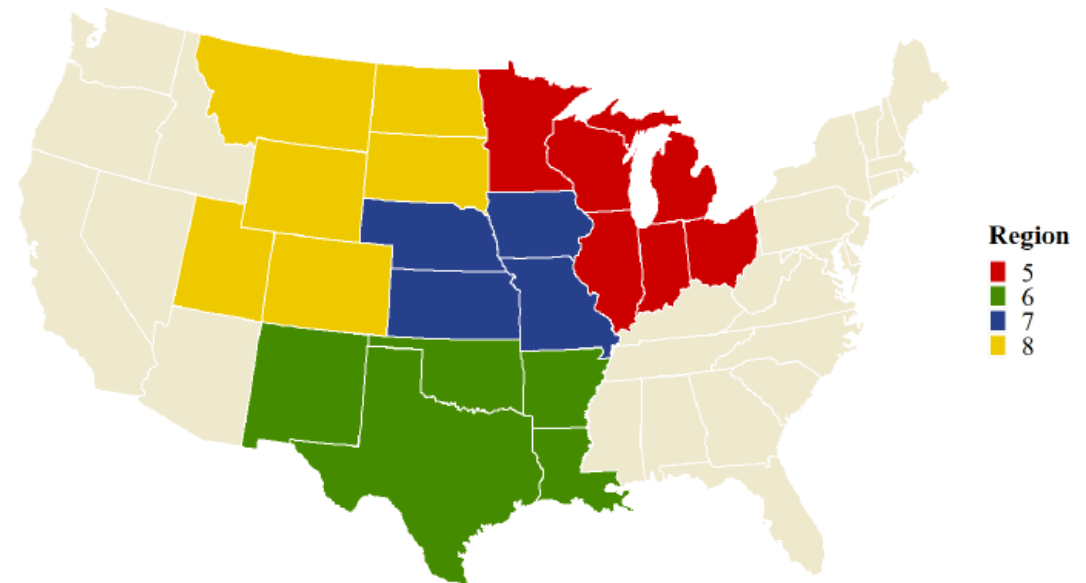
Economies (Abilities) of Size

- “Normal” national processing capacity: ~125,000 head/day
- If because of plant closures/slowdowns, say 40% of capacity is absent
 - Then $125,000 * 0.4 = 50,000$ market-ready cattle are backed up on the farm
...**EVERY SINGLE DAY THE CAPACITY IS ABSENT**
 - Do that for 5 days: 250,000 head back up in a week
- Assume a small-ish 100 head/day packer *could* take cattle
- How many extra days would this plant have to run to make up for 1 day of a 5,000 head/day packer’s lost production?
 - $5,000/100 = 50$ extra days
 - Or, 50 brand new small-ish packing plants

Regional and Plant-Size Impacts of COVID-19 on Beef Processing

Justin D. Bina, Glynn T. Tonsor, Lee L. Schulz, and William F. Hahn

- All regions experienced the same rapid recovery from slaughter disruptions
- Regions with heavier reliance on large plants did not fare any worse
 - Adding physical capacity may not provide increased “resiliency” when labor is the constraint
- Region 6’s lower decline in FI slaughter suggests geographic dispersion of packing plants may have lessened impact
- Additional physical capacity may sit unused during “normal” times, adding costs to the system

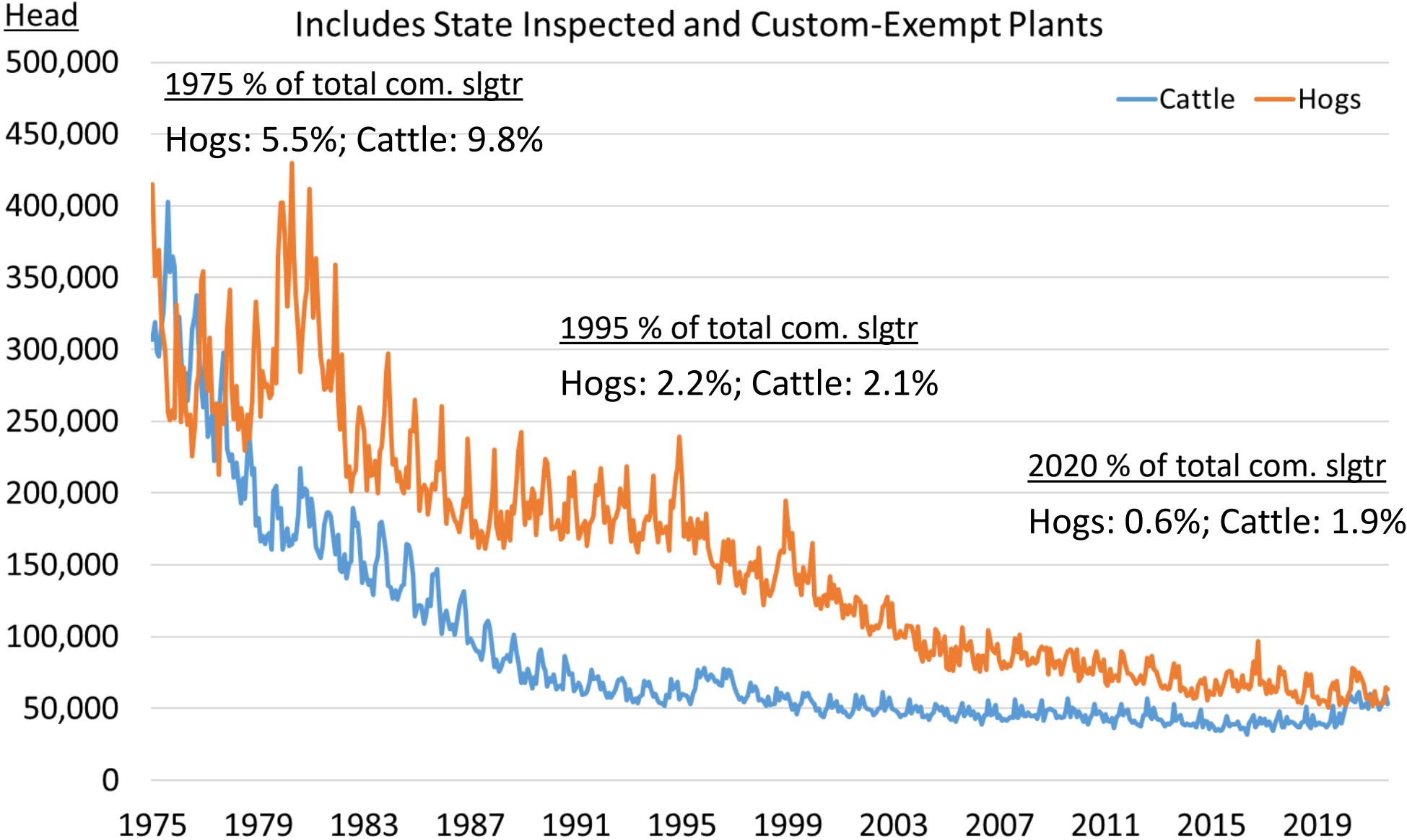


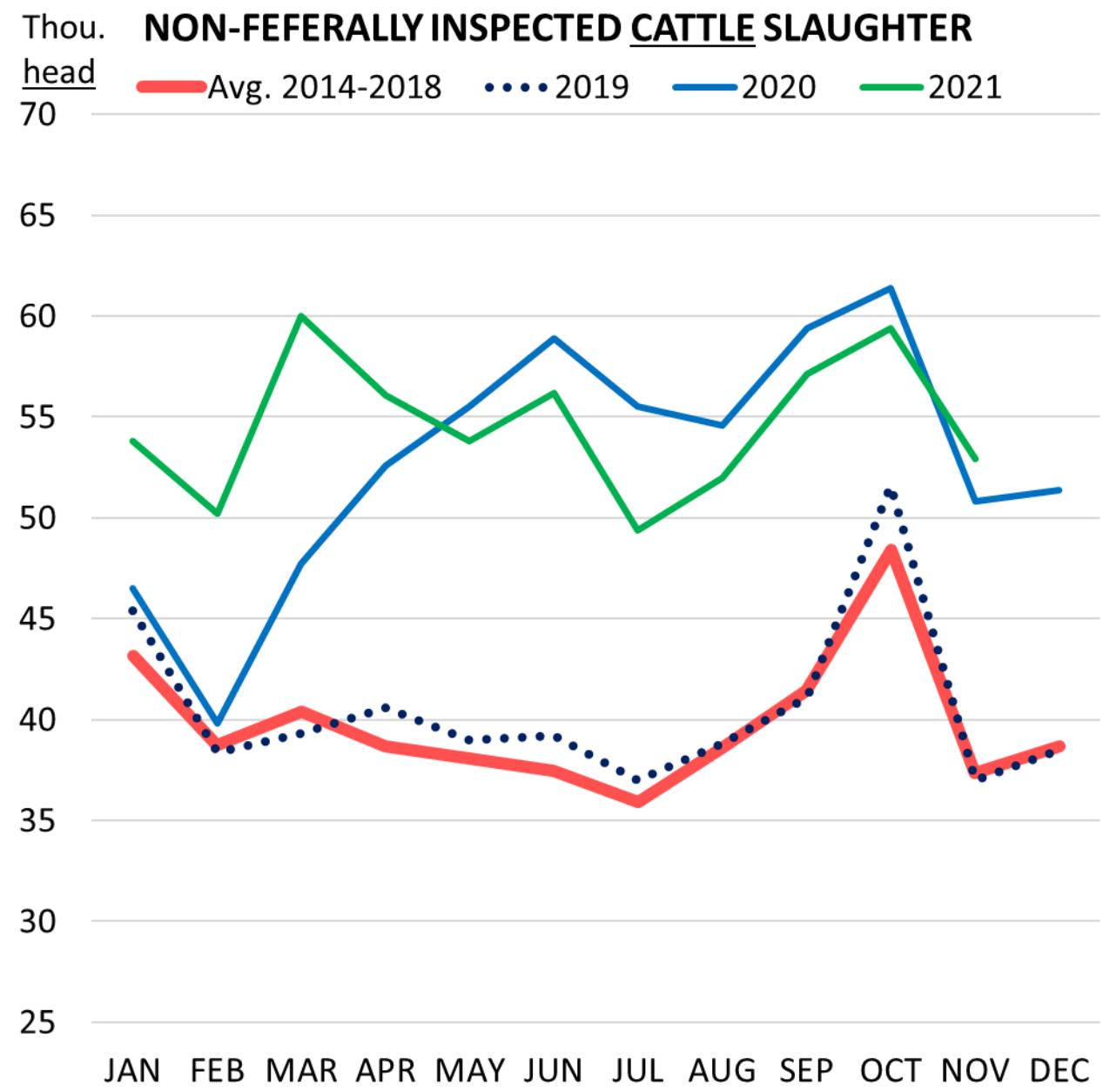
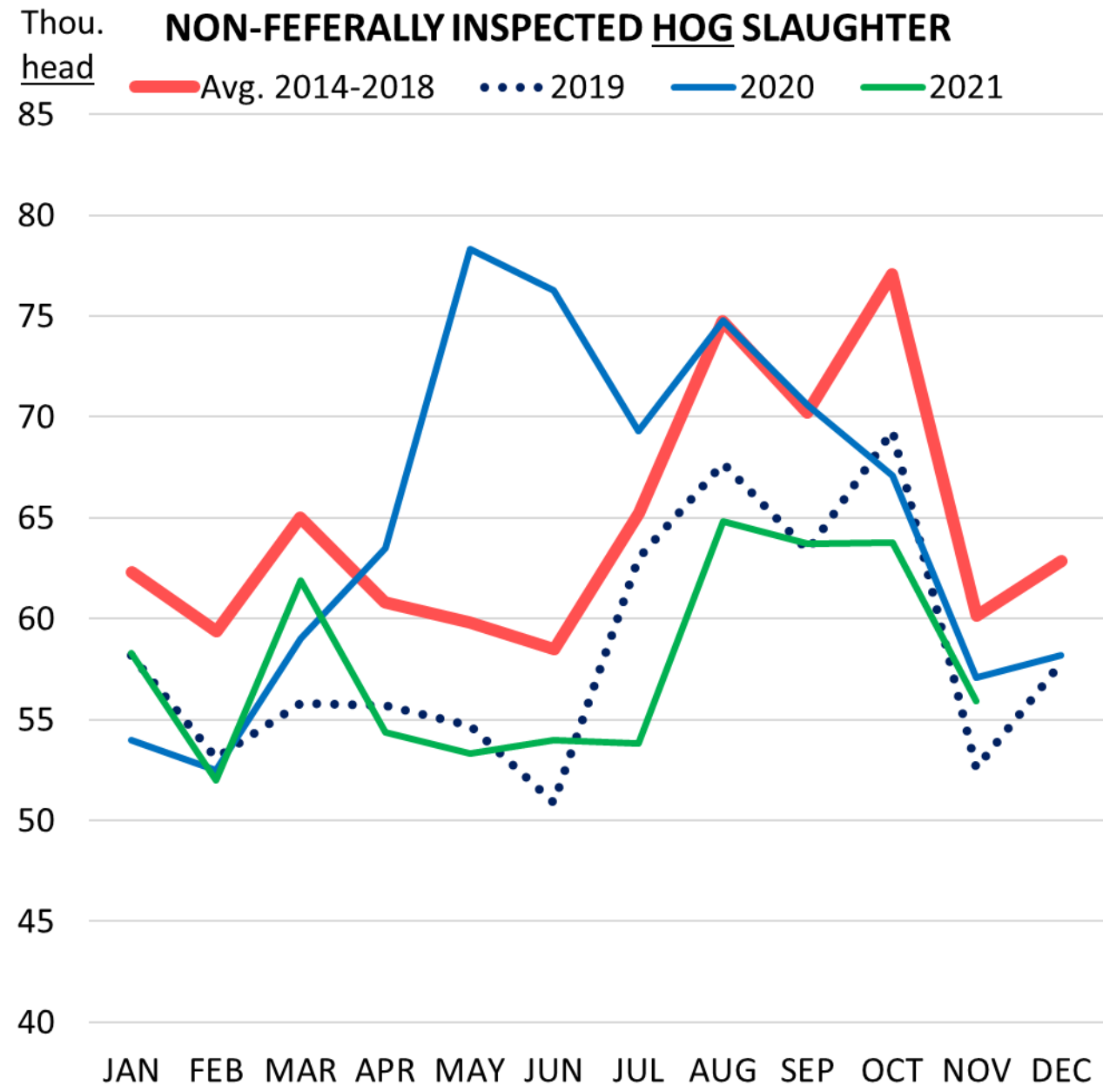
Scherer, F.M., A. Beckenstein, E. Kaufer, R.D. Murphy, and F. Bougeon-Maassen. 1975. **The Economics of Multi-Plant Operation.** Cambridge, USA: Harvard University Press.

As the capacity of electronic data processing equipment grows and as persons trained to use that capacity analytically flow from the universities into industry, the ability of multi-plant, multi-product firms to solve complex production assignment and scheduling problems is bound to increase. One significant by-product may be an increase in the cost savings realizable through multi-plant operation... We nevertheless believe that there is much unmined gold left in the hills, and that multi-plant firms are going to develop better ways of extracting it” (p. 397-398).

MONTHLY NON-FEDERALLY INSPECTED SLAUGHTER

Includes State Inspected and Custom-Exempt Plants

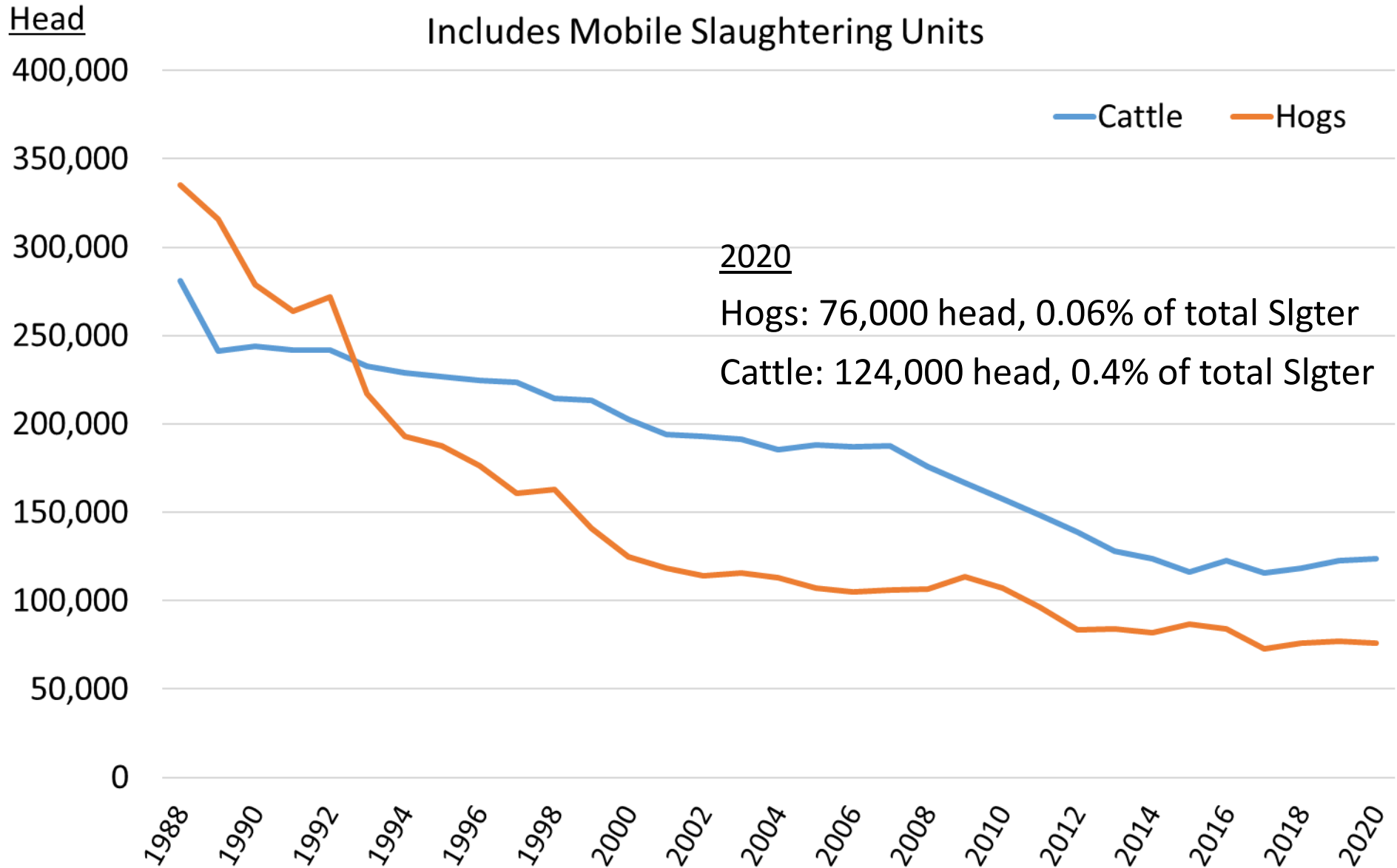




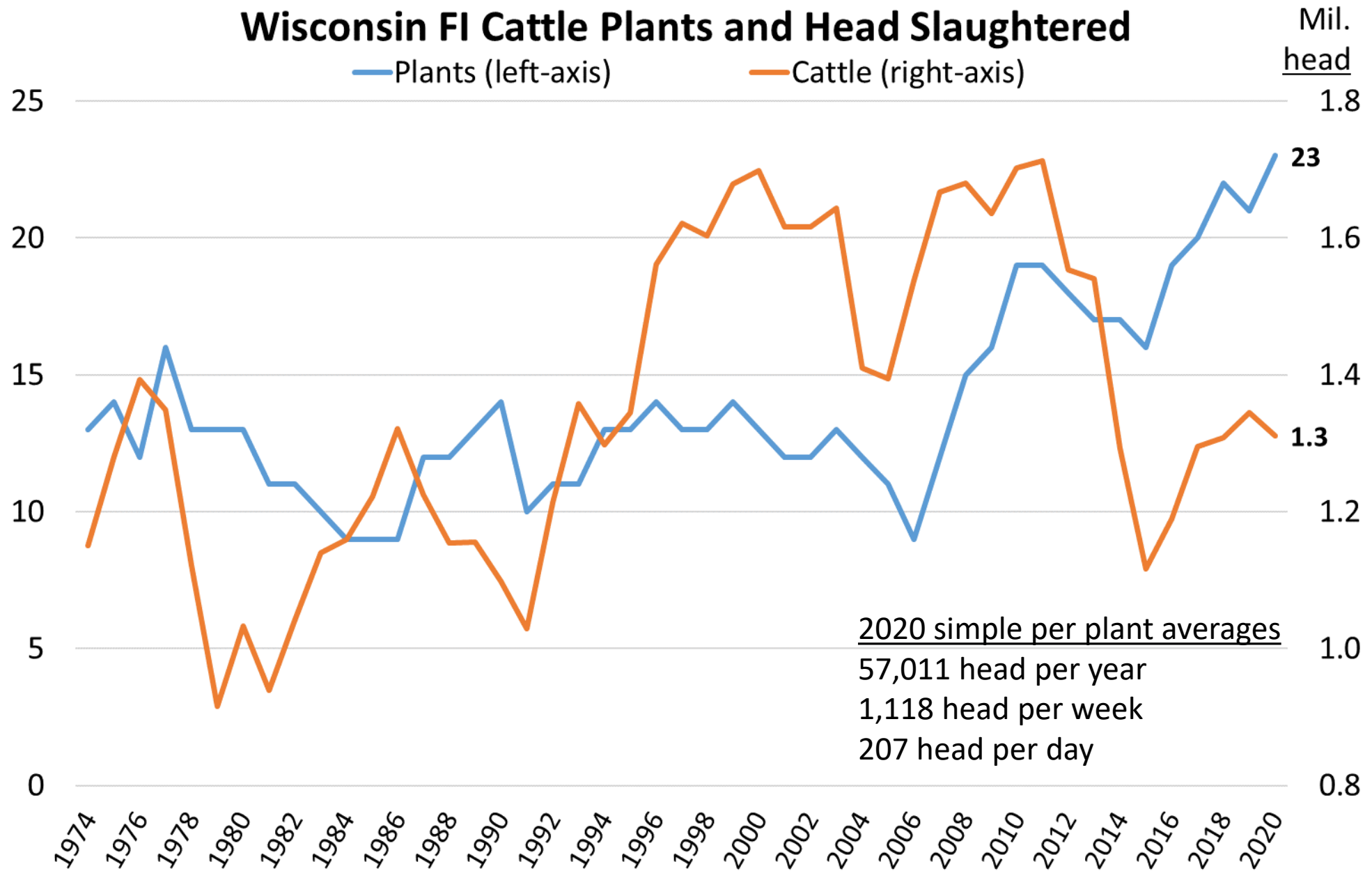
Data Source: USDA-NASS & USDA-AMS
 Livestock Marketing Information Center

ANNUAL ON FARM SLAUGHTER

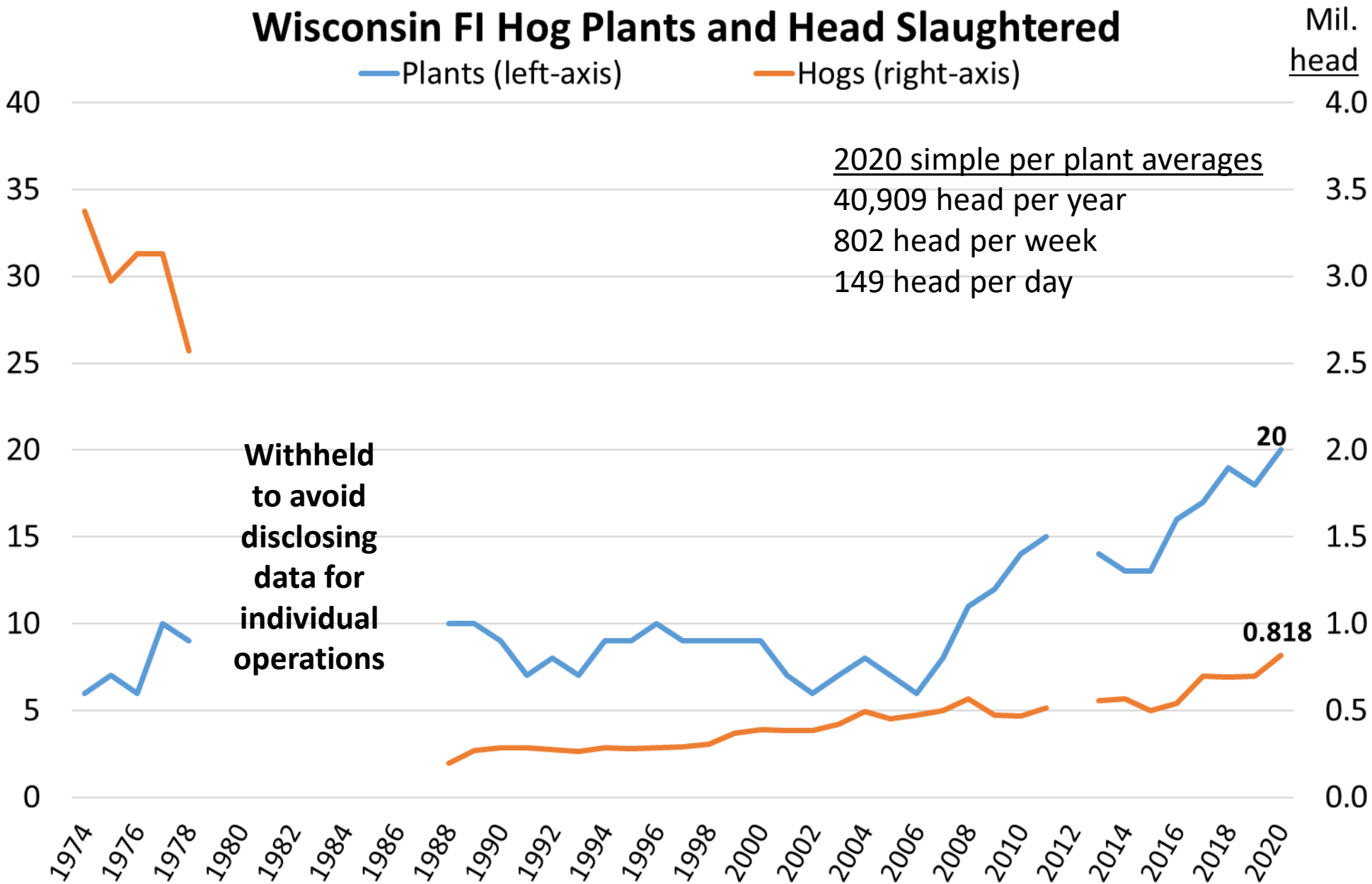
Includes Mobile Slaughtering Units



Wisconsin FI Cattle Plants and Head Slaughtered



Wisconsin FI Hog Plants and Head Slaughtered

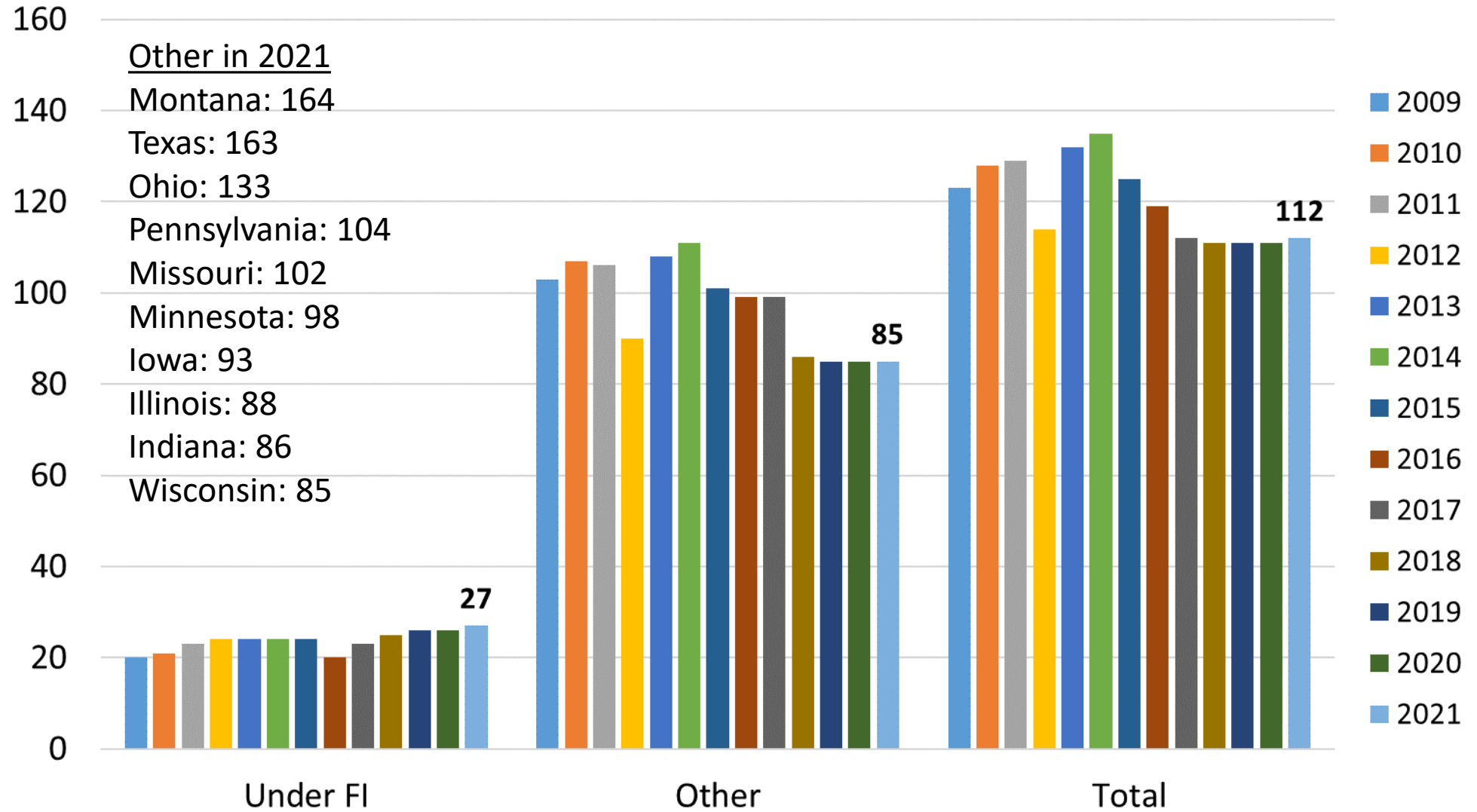


Data Source: USDA-NASS

Livestock Marketing Information Center

Wisconsin Livestock Slaughter Plants

Num. by Type of Inspection, Includes Temporarily Closed Plants



Byproducts boost beef value



MORE THAN STEAK: While juicy steaks bring solid returns, there's more to an animal than prime cuts. The byproducts — hearts, livers, tongues — can be solid earners for many, and this is bolstering the fed cattle price.

Livestock Outlook: Strong beef byproduct sales are buoying byproduct values, which in turn lift live cattle prices and put more cash in producers' pockets.

Lee Schulz | Dec 17, 2021

<https://www.farmprogress.com/livestock/byproducts-boost-beef-value>

Labor constraints may be diverting some byproducts to the rendering plant that would have higher values in other forms.

Many smaller processors have sufficient access to rendering services and can earn some byproduct revenue — primarily for hides.

- For others, the drop may be a liability rather than a revenue source.

Small, fee-for-service processors — i.e., custom-exempt plants — sell processing services, not muscle cuts and byproducts.

- Cannot cover processing costs with drop revenue because the drop either generates little or no revenue, or is a cost.

FACT SHEET: The Biden-Harris Action Plan for a Fairer, More Competitive, and More Resilient Meat and Poultry Supply Chain

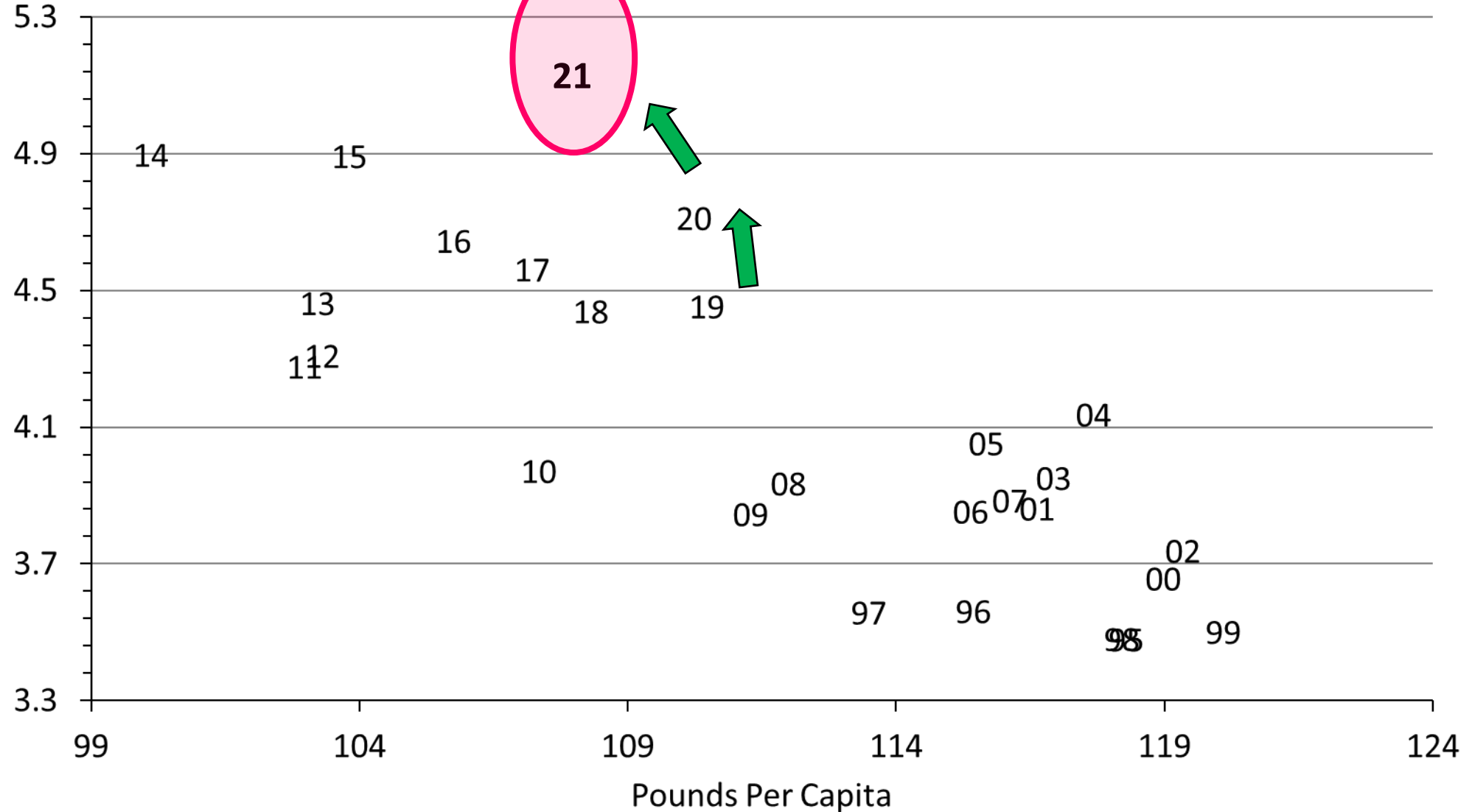
JANUARY 03, 2022 • STATEMENTS AND RELEASES

- Expand and diversify meat and poultry processing capacity;
- Increase producer income;
- Provide producers an opportunity to have ownership in processing facilities;
- Create stable, well-paying jobs in rural regions;
- Raise the bar on worker health, safety, training, and wages for meatpacking jobs;
- Spur collaboration among producers and workers;
- Prompt state, tribal, and private co-investment; and
- Provide consumers with more choices.

BEEF & PORK PRICE-QUANTITY RELATIONSHIP

\$ Per Pound

Annual, Retail Weight, Deflated Retail Price



Demand-Pull Inflation ✓

Prices increase because excess demand in the market, i.e., “too many dollars chasing too few goods”.



Rise in income, population, etc. are demand-pull factors.

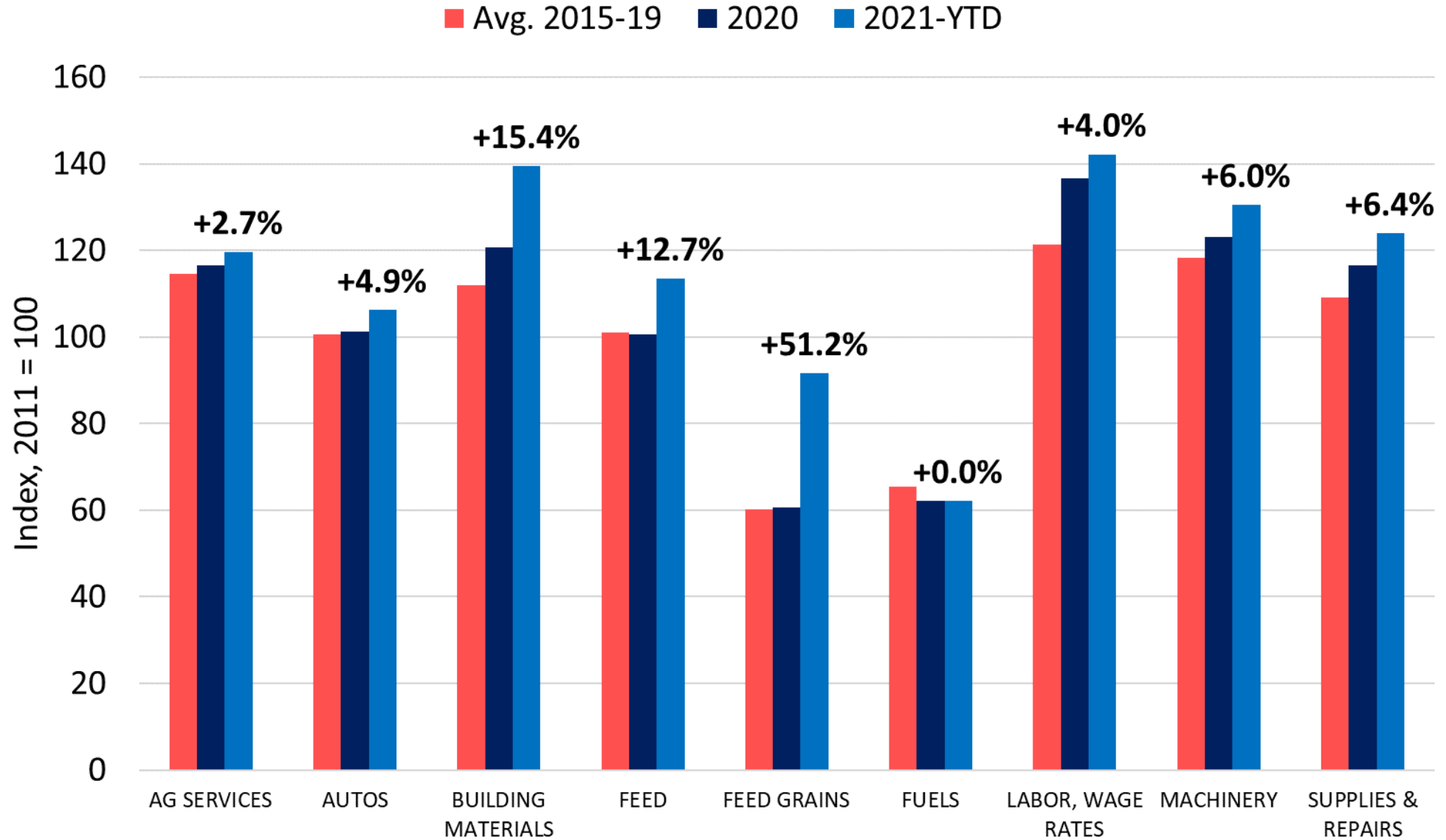
Cost-Push Inflation ✓

Prices increase because costs rise or supplies fall. Either will boost prices as long as demand remains the same.



Rise in price of inputs such as feed, wages, fuel, etc. are cost push factors.

PRICES PAID BY FARMERS FOR SELECT INPUTS



MONTHLY EST. BEEF PACKER MARGINS

\$/head

2,500

- Gross Margin
- Net Margin (\$75 var., \$75 fix)
- Net Margin w/ Add Costs (\$40 var., \$20 fix)

2,000

1,500

1,000

500

0

-500

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021



Featured Article | Free Access

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

Jayson L. Lusk, Glynn T. Tonsor, Lee L. Schulz



May-20

\$2,194

\$1,473

\$1,413

Beef packers have market leverage for now



CAPACITY MISMATCH: When the number of cattle coming into packing plants exceeds processing capacity, it creates and puts down pressure on fed cattle prices.

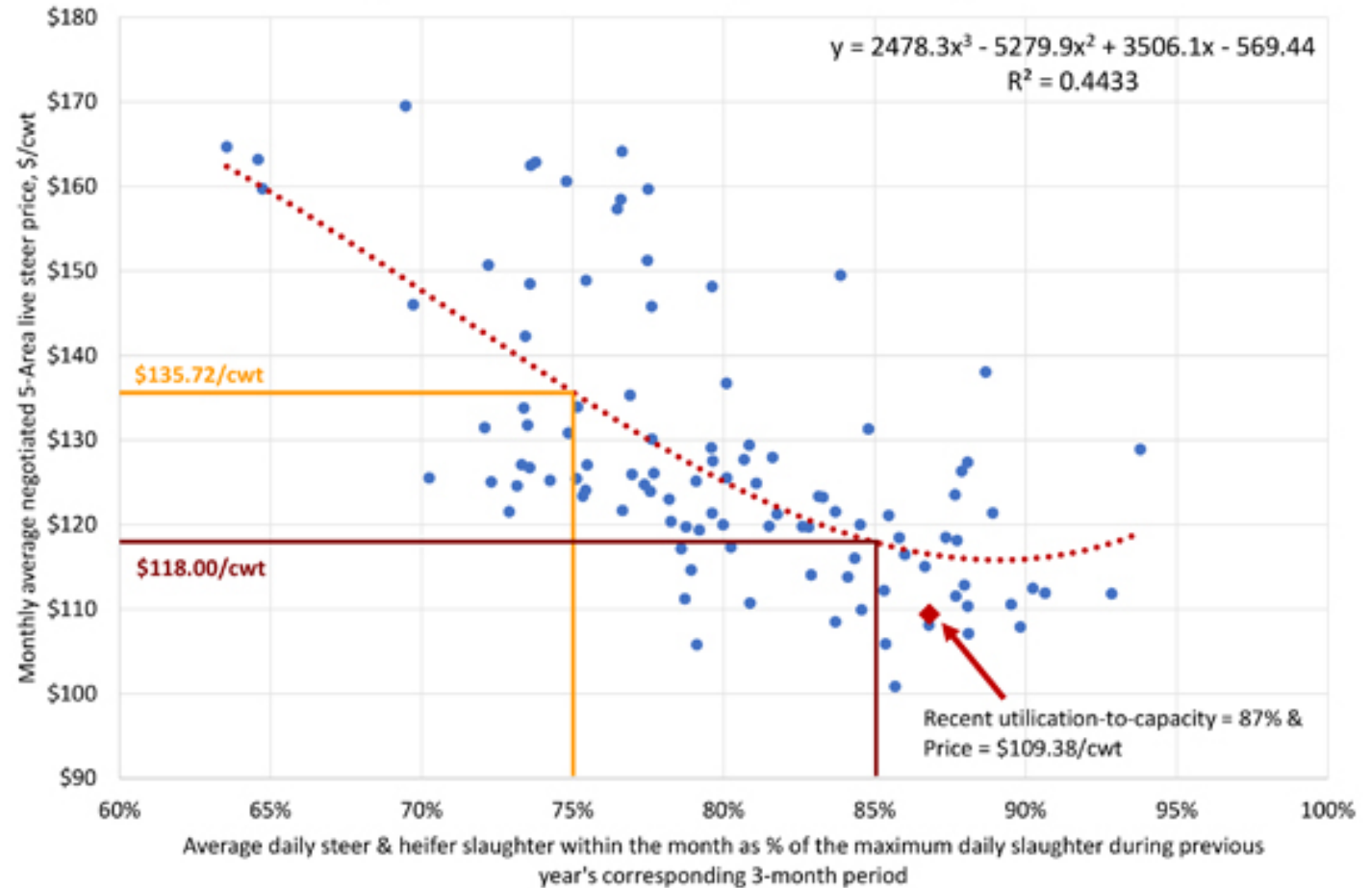
Livestock Outlook: Kansas fire hampers U.S. beef packing capacity.

Lee Schulz | Sep 19, 2019

<https://www.farmprogress.com/beef/beef-packers-have-market-leverage-now>



Figure 1. Monthly Relationship Between Beef Packing Plant Utilization-to-Capacity vs. Negotiated 5-Area Fed Cattle Price, Jan 2011 thru Aug 2019



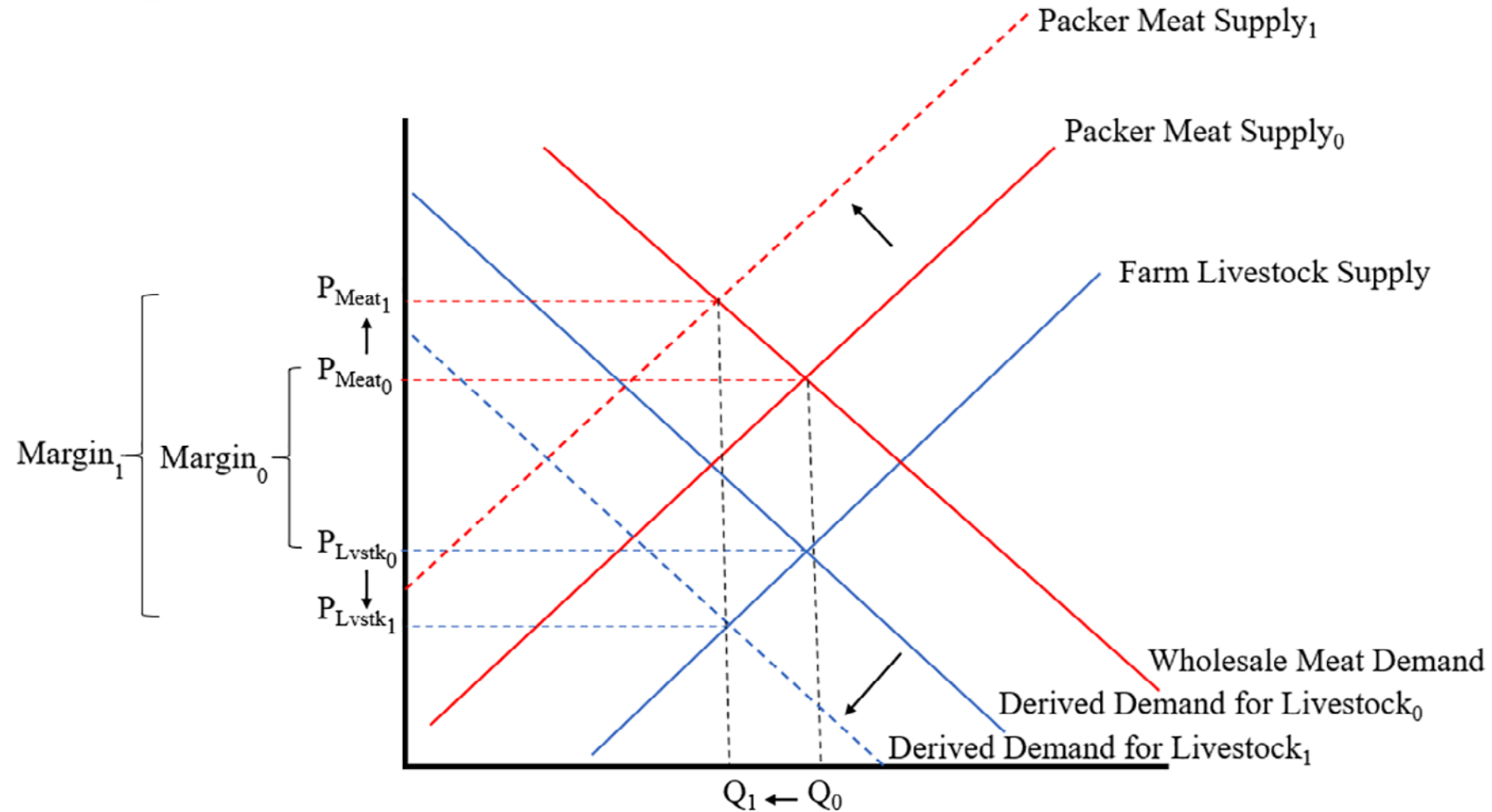
Featured Article | [Free Access](#)

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

Jayson L. Lusk  Glynn T. Tonsor, Lee L. Schulz

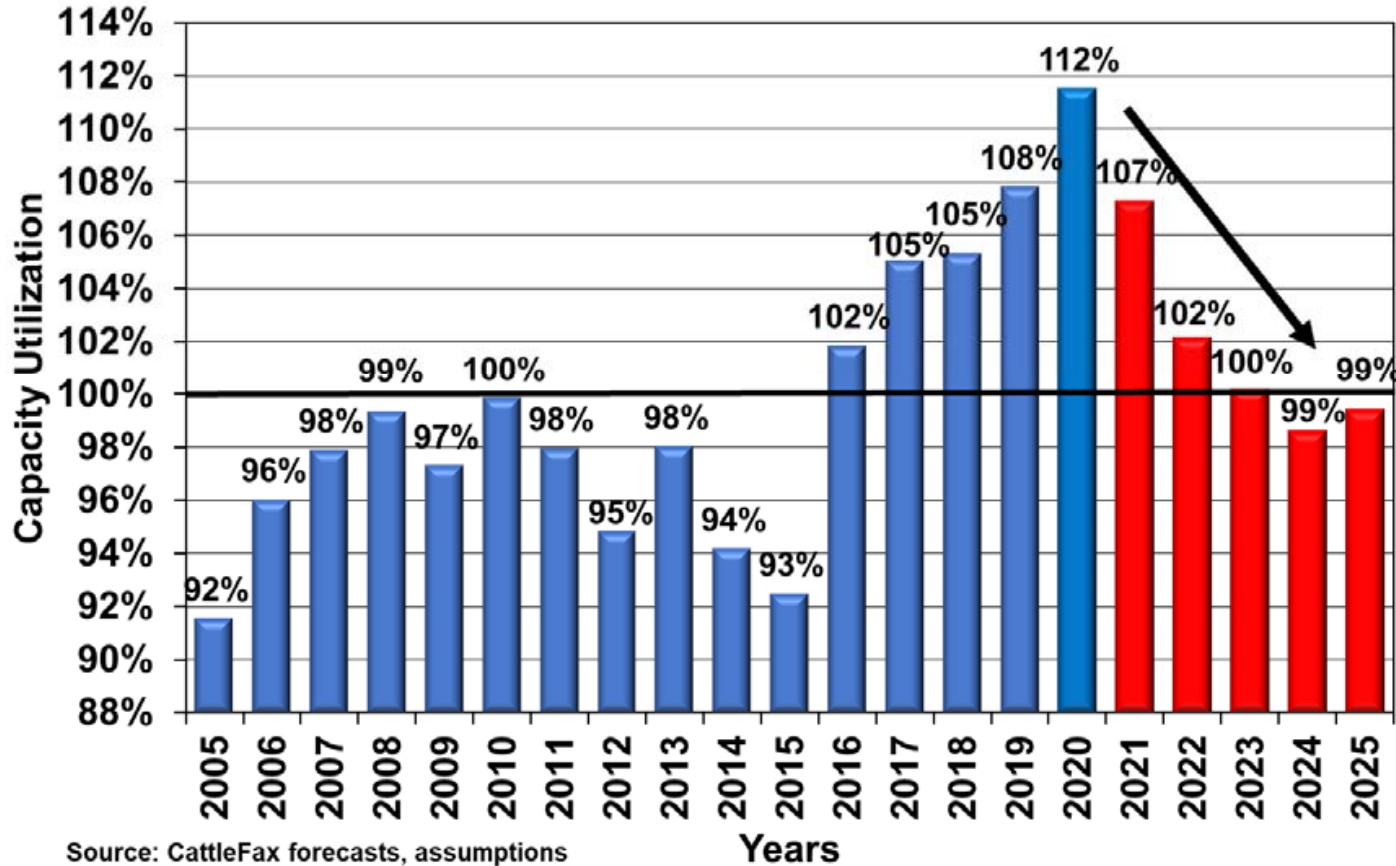
❖ Seemingly paradoxical observations of livestock prices declining while wholesale meat prices are increasing garners wide-spread scrutiny

❖ Has a straightforward economic explanation



Fed Slaughter Capacity Utilization

Vs. Monday-Friday Packing Capacity



Source: CattleFax forecasts, assumptions

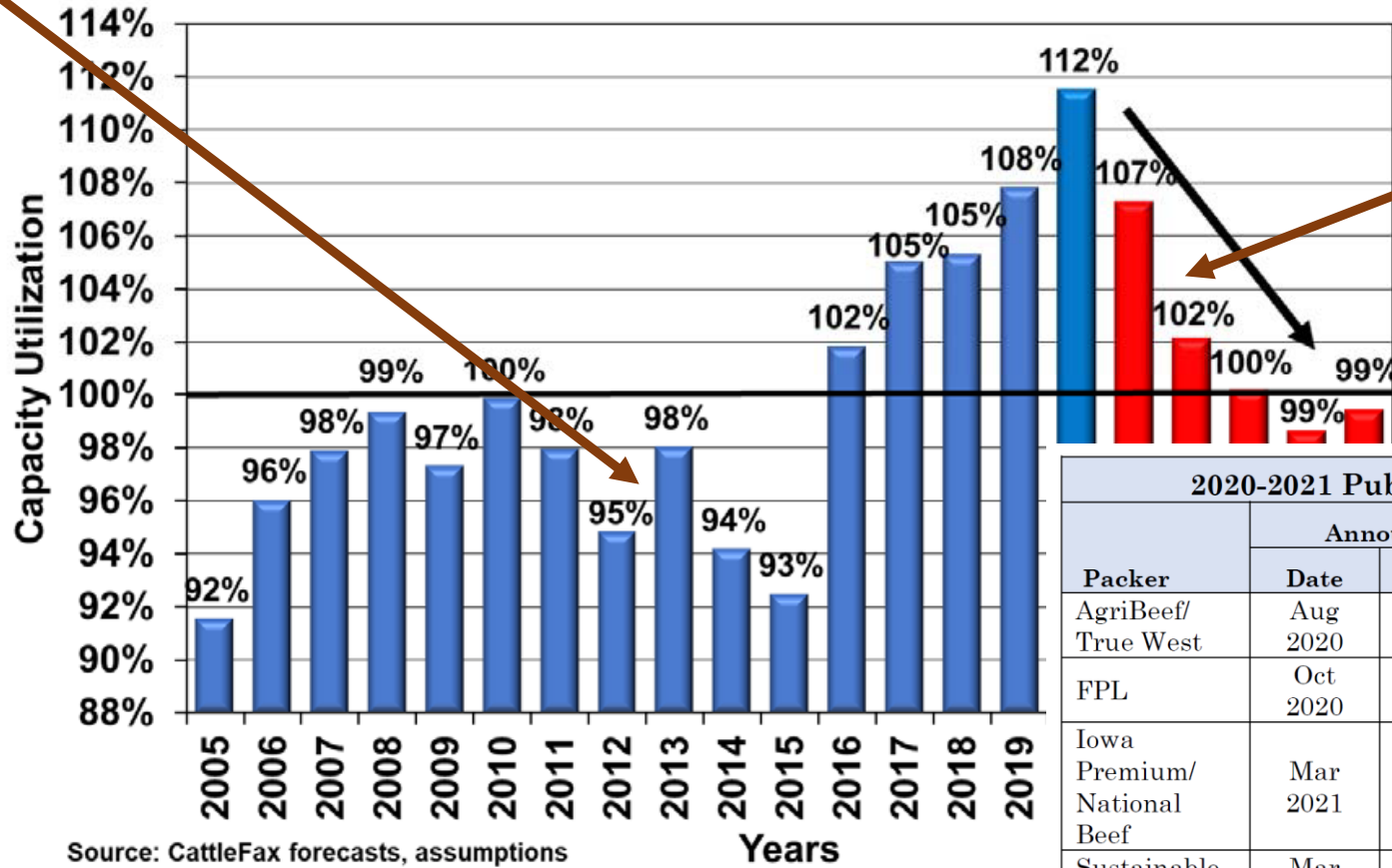
“Too many cattle relative to capacity”



“Too much capacity relative to cattle”

2013 Cargill Closed Plainview, TX Plant (~4,500 hd/day)

Fed Slaughter Capacity Utilization Vs. Monday-Friday Packing Capacity



Source: CattleFax forecasts, assumptions

Steady/Lower FI Slaughter
 2020 = 32.8 mil
 2021 = 33.7 mil
 2022 = 32.7 mil
 2023 = 31.9 mil

More OPERATIONAL capacity

+ Glenwood, IA new plant 1,500/head/day

2020-2021 Publicly Announced Beef Packing Capacity Expansion							
Packer	Announced		Capacity hd/day	State	Est Investment	Ownership	Est on-line
	Date	Action					
AgriBeef/ True West	Aug 2020	New Plant	500	ID		Producer	TBD
FPL	Oct 2020	Expansion	500	GA	\$120 mln	FPL	Q42021
Iowa Premium/ National Beef	Mar 2021	Expansion	1,250	IA	\$100 mln	National Beef	Q42022
Sustainable Beef	Mar 2021	New Plant	1,400	NE	\$300 mln	Feeder	TBD
Missouri Prime	Mar 2021	Converted pork plant	500	MO		NexGen, feeders	Mar 2021
JBS	Jun 2021	Expansion	1,050	NE	\$150 mln	JBS	Q42021
American Foods Group	Jun 2021	New Plant	TBD	WI		AFG	TBD
TOTAL			5,200 +				

Source: company press releases and news coverage

Data Source: CattleFax's December 2020 Long-Term Outlook

Textbox Source: Dr. Glynn Tonsor (KSU); Schulz additions.

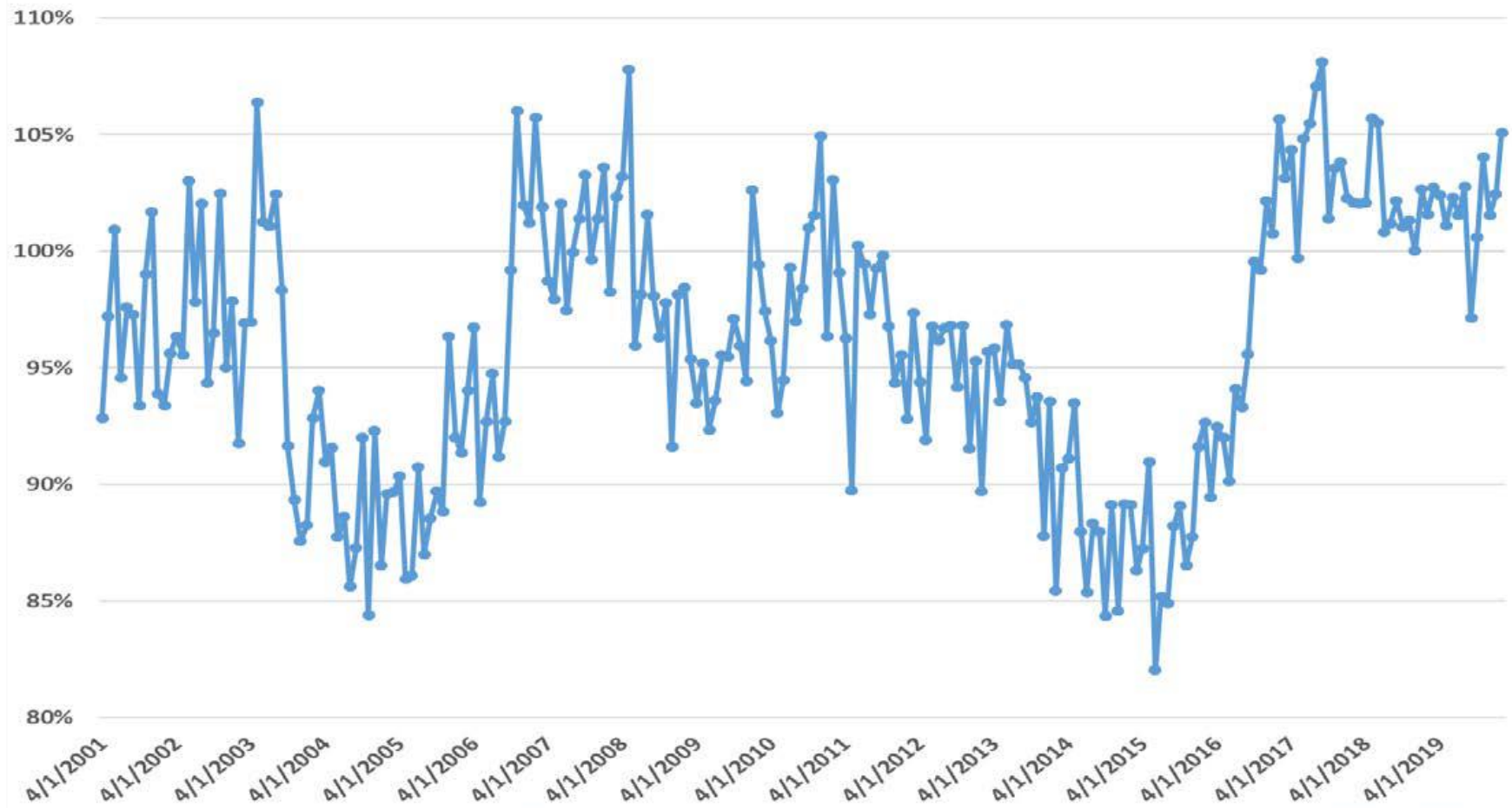
Assessing Impact of Packing Plant Utilization on Livestock Prices

Glynn Tonsor (gtonsor@ksu.edu) Kansas State University Department of Agricultural Economics
 Lee Schulz (lschulz@iastate.edu) Iowa State University Department of Economics

- ✓ **1%** ↑ in utilization
- ✓ **1.32%** ↓ in cattle prices

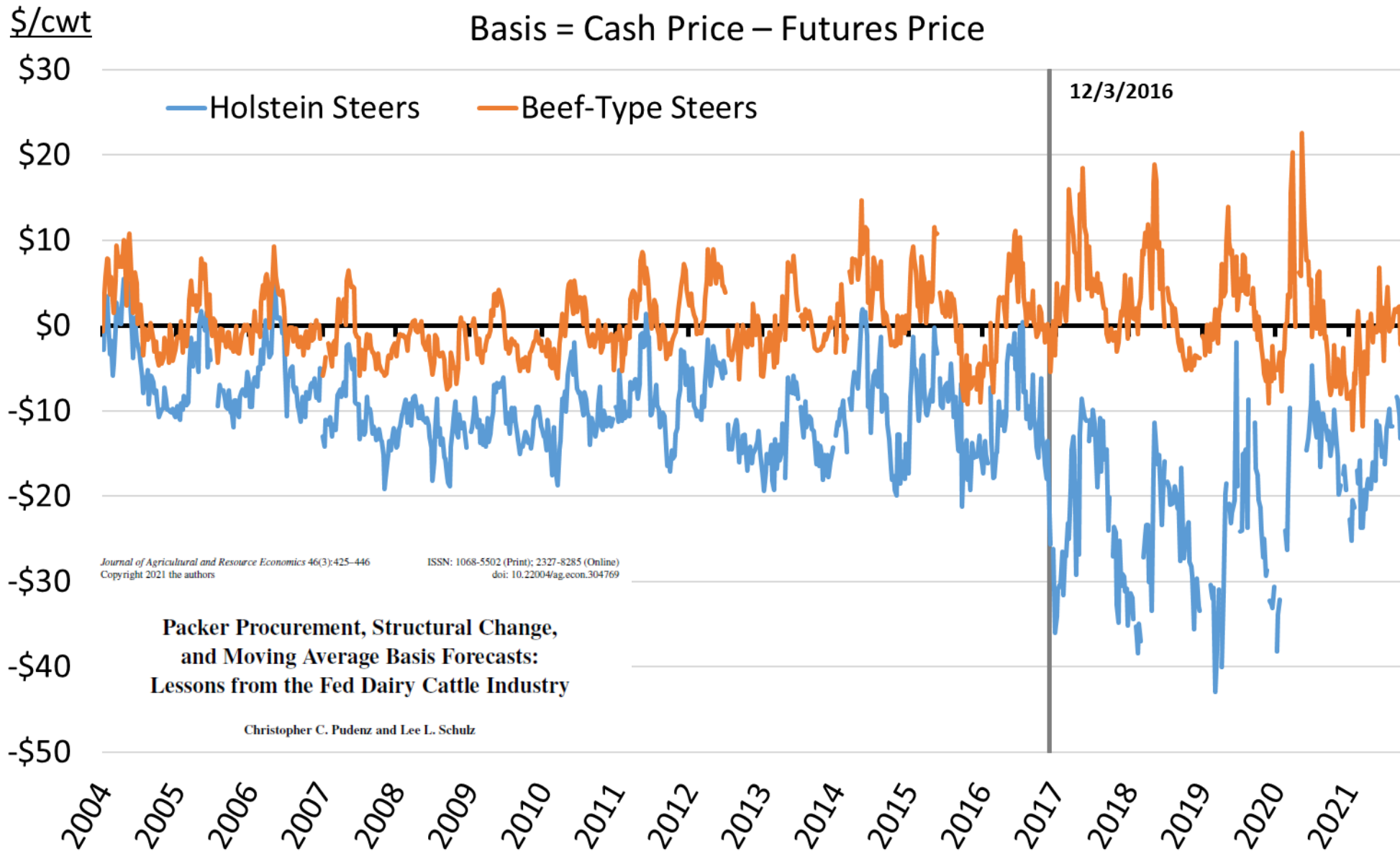
- Scenarios of ↑ utilization
- 10%: prices to ↓ 13.2%
 - 20%: ↓ 26.4%
 - 30%: ↓ 39.6%
 - 40%: ↓ 52.8%

Beef Packing Plant Utilization-to-Capacity, April 2001 - February 2020



CHOICE STEER BASIS, IOWA AUCTION MARKET, WEEKLY

Basis = Cash Price – Futures Price



Procurement impact

Auction: -\$14.52

Formula: -\$9.30

Forward: -\$24.83

Neg. Grid: -\$15.96

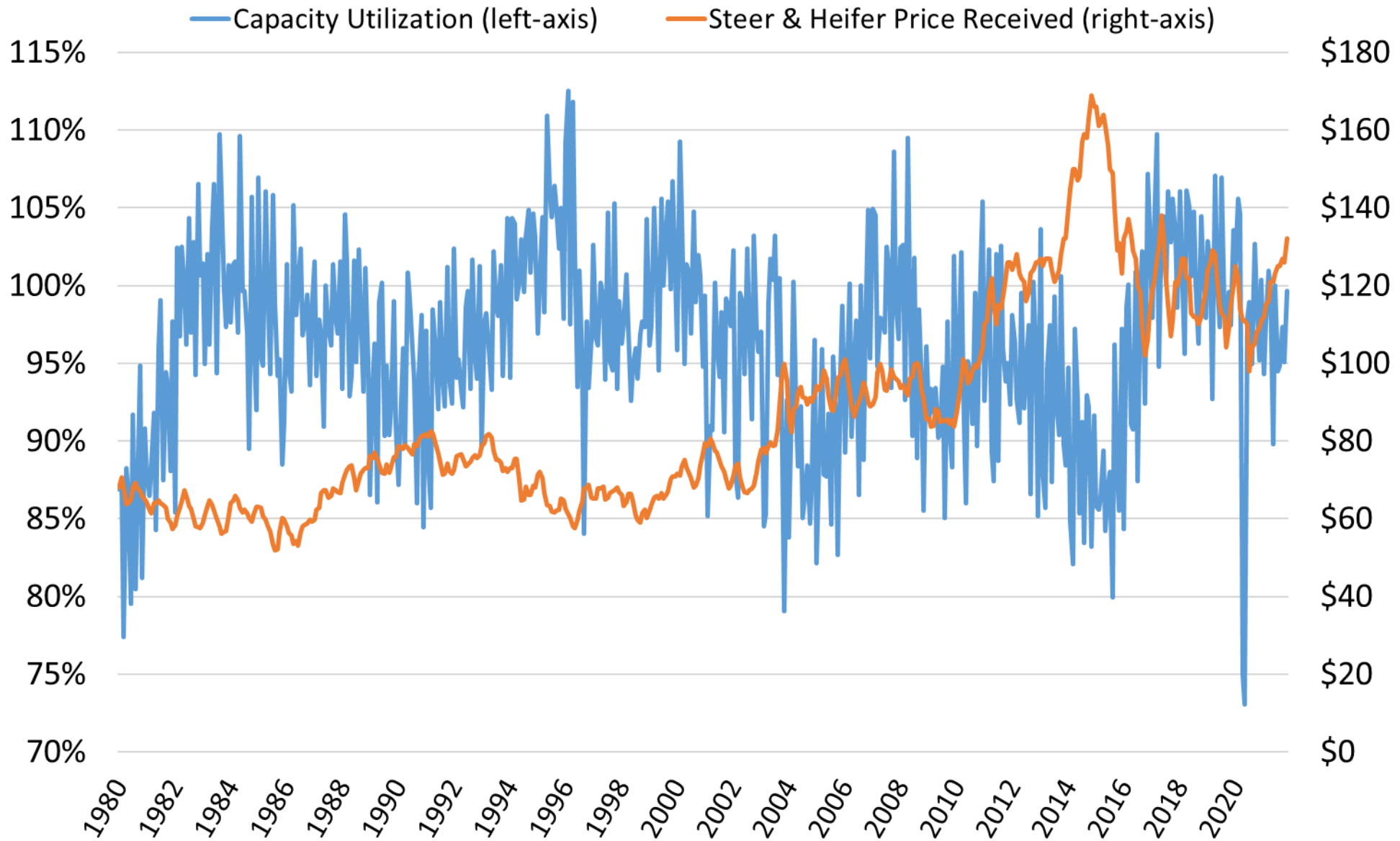
Journal of Agricultural and Resource Economics 46(3):425–446
Copyright 2021 the authors

ISSN: 1068-5502 (Print); 2327-8285 (Online)
doi: 10.22004/ag.econ.304769

**Packer Procurement, Structural Change,
and Moving Average Basis Forecasts:
Lessons from the Fed Dairy Cattle Industry**

Christopher C. Pudenz and Lee L. Schulz

Est. Beef Packer Operational Capacity Utilization & Fed Cattle Prices

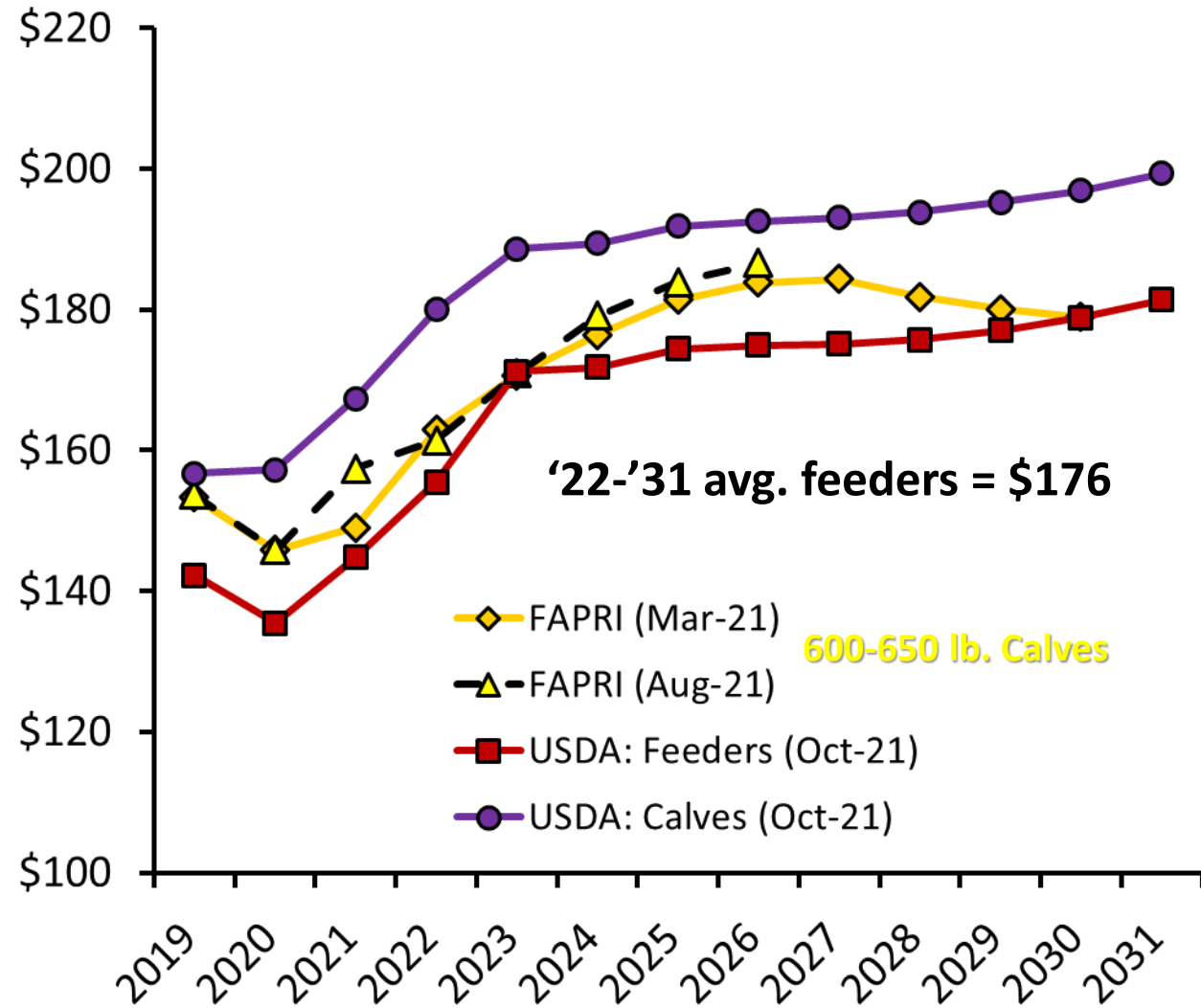


Data Source: USDA-AMS; USDA-AMS

Livestock Marketing Information Center

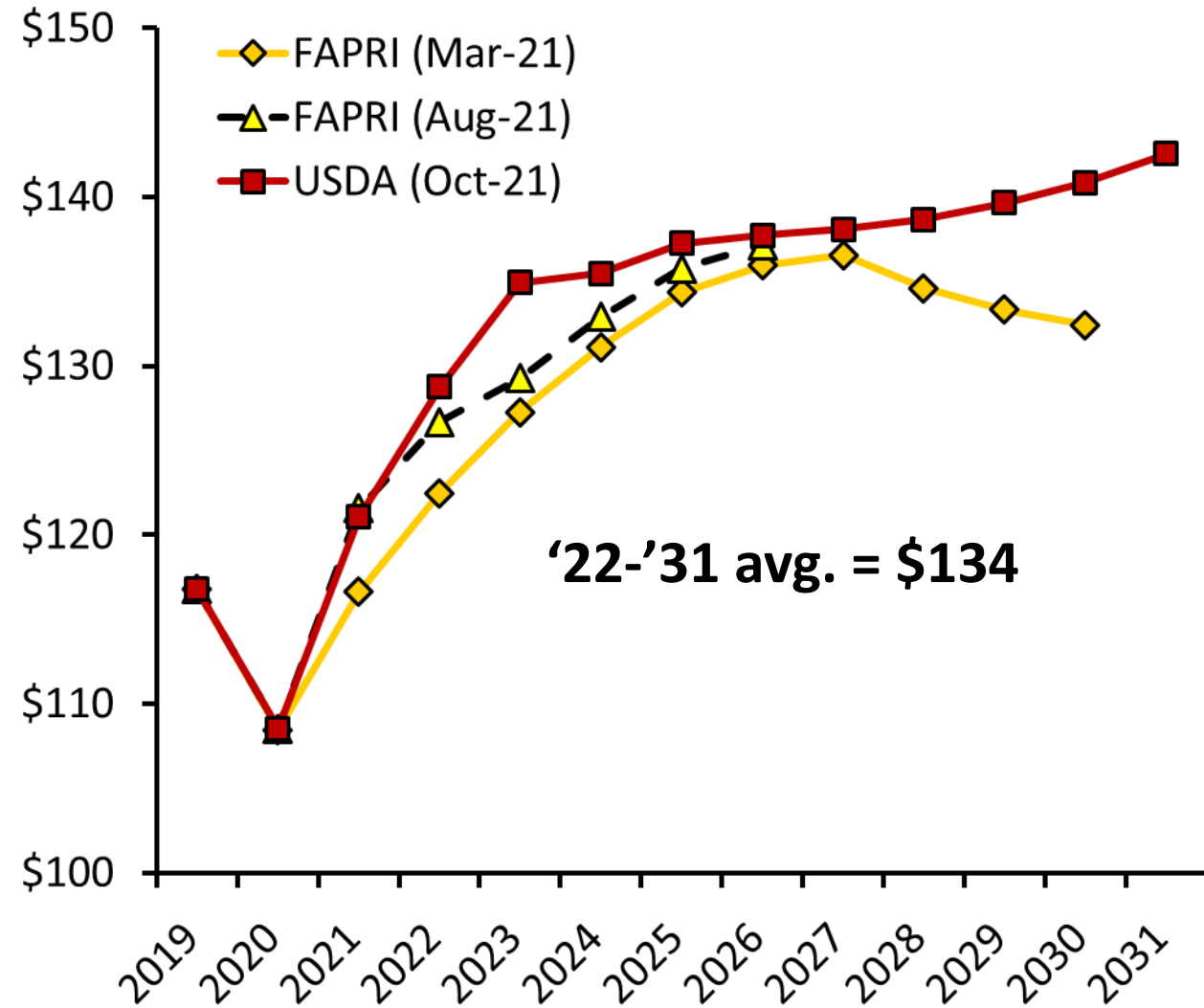
Feeder Cattle Price Long-Term Projections

Steers, Oklahoma City, \$/cwt



Fed Cattle Price Long-Term Projections

Steers, 5-Area, Live Wt. Equiv., \$/cwt





Contents lists available at ScienceDirect

Preventive Veterinary Medicine

journal homepage: www.elsevier.com/locate/prevetmed

Economic impact of university veterinary diagnostic laboratories: A case study

Lee L. Schulz^{a,*}, Dermot J. Hayes^a, Derald J. Holtkamp^b, David A. Swenson^a^a Department of Economics, Iowa State University, Ames, IA, 50011, United States^b Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, IA, 50011, United States**795% ROI in normal years****3104% ROI in animal health emergency**

Estimated Economic Impacts of the ISUVDL.

Impact Type	Minimum		Most Likely		Maximum	
	Peacetime	Emergency	Peacetime	Emergency	Peacetime	Emergency
Direct Output, million \$	995.02	5,562.13	2,162.46	8,446.21	4,101.67	15,601.71
Total Output, million \$	1,303.31	7,285.43	2,832.45	11,063.06	5,372.47	20,435.53
Total Value Added, million \$	532.92	2,979.02	1,158.19	4,523.70	2,196.81	8,356.11
Total Labor Income, million \$	289.87	1,620.35	629.96	2,460.53	1,194.89	4,545.05
State Taxes Collected, million \$	14.63	81.76	31.79	124.15	60.29	229.33

Hayes D.J., Fabiosa J.F., Elobeid A..E, Carriquiry M. **Economy Wide Impacts of a Foreign Animal Disease in the United States**. Center for Agricultural and Rural Development. Iowa State University (2011). Working Paper 11-WP 525. <https://www.card.iastate.edu/products/publications/synopsis/?p=1283>

- Estimated cumulative losses over 10 years
 - Beef = \$71.23 bil.
 - Pork = \$57.0 bil.
 - Corn = \$44.0 bil.
 - Soybean = 24.9 bil.
 - Wheat = \$1.84 bil.

KEY IMPACTS

Short-term

- Exports – immediate closure of international export markets to U.S. pork. Even ASF-positive countries prohibit the importation of pork from countries with the disease
- Prices – U.S. live hog prices see an immediate drop of 40% to 50%. The price reduction will help clear the surplus of pork intended for export
- Protein prices – oversupply of meat on the domestic market leads to price reductions throughout the value chain
- Feed prices – lower demand for feed grain will reduce prices

Long-term

- Revenue losses – lower prices and quantities sold lead to a decline in pork industries revenues
 - Two-year scenario – \$15 billion in losses
 - All-years scenario – \$50 billion in losses
- Employment
 - Two-year scenario – minimal job losses at the end of 10 year
 - All-years scenario – 140,000 job losses at the end of 10 years; 22,000 lost jobs are in Iowa
- Swine industry downsizing
 - Two-year scenario – significant losses, but exports resume before downsizing occurs
 - All-years scenario – industry reduction after about five years and remains at a lower output for the remaining years

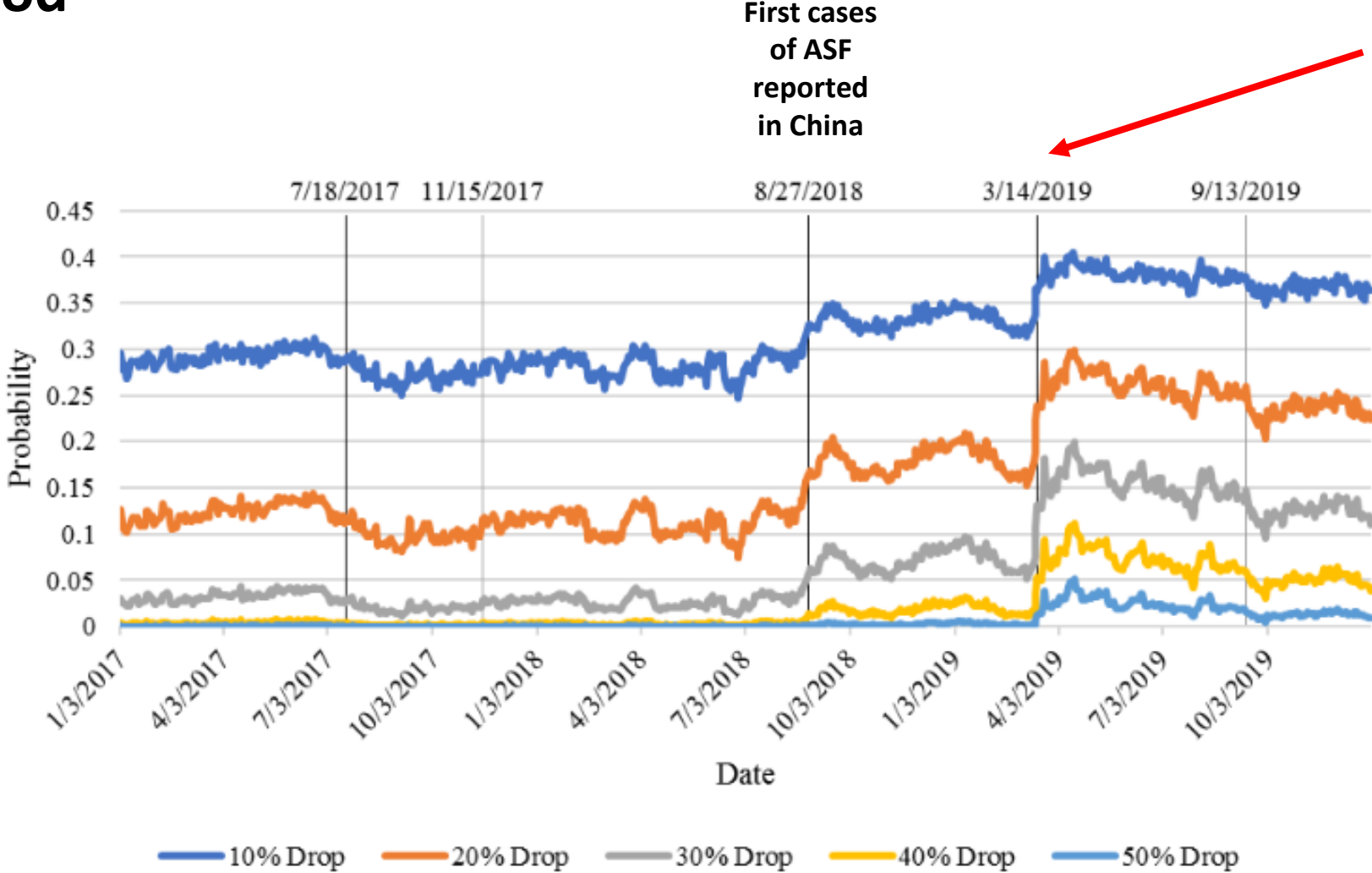


Economic Study: Impact of the Introduction of African Swine Fever in the United States

*Miguel Carriquiry¹, Amani Elobeid²,
David Swenson², and Dermot Hayes²*

https://asfimpact.com/wp-content/uploads/2020/03/HAS-003-4-ASFImpact-Summary_1j.pdf

Probability of a catastrophic disease event, percent drop method



First cases of ASF reported in China

Two U.S. gov't announcements about Chinese imports of U.S. pork and seizure of illegally imported food products from China

Quantifying the U.S. Market Response to the African Swine Fever Outbreak in China

<https://ageconsearch.umn.edu/record/304298?ln=en>

Lean hog futures market-perceived probability of “dramatic” change in prices...

June Lean Hogs				June lean hog futures			June lean hog futures		
				Below \$30	Below \$40	Below \$50	Above \$100	Above \$110	Above \$120
75.525	3/1/19	to	6/14/19	0.0%	0.7%	5.2%	13.8%	7.2%	3.3%
86.525	3/15/19			0.3%	2.1%	7.6%	34.7%	25.8%	18.5%
88.500	4/1/19			0.1%	1.5%	6.3%	36.3%	27.6%	20.6%
98.300	4/15/19			0.3%	1.5%	5.4%	48.1%	39.0%	31.4%
78.275	2/3/20	to	6/14/20	0.2%	2.7%	9.9%	24.2%	16.6%	11.0%
80.900	2/14/20			0.0%	1.0%	5.7%	23.5%	14.9%	9.4%
81.375	2/18/20			0.1%	1.0%	5.2%	24.3%	15.7%	10.0%
77.225	2/28/20			0.3%	2.7%	10.4%	22.8%	15.5%	10.3%



Checking our cows!



WallaceFarmer. Serving: **IA**

Lee Schulz is the Iowa State University Extension livestock economist.



How to decipher beef balance sheet

DEC 14, 2020

Livestock Outlook: Despite slightly higher U.S beef production, lower imports should pull total 2021 beef supply a tad below 2020.

<https://www.farmprogress.com/author/--195>

ISU Livestock Crush Margins

**Iowa State University
Extension and Outreach**

<http://www2.econ.iastate.edu/margins/>

Checking our Resources ...can be as easy as checking cows

IOWA STATE UNIVERSITY
Extension and Outreach

Ag Decision Maker

An agricultural economics and business website for farm business decisions being made today

<https://www.extension.iastate.edu/agdm/>

IOWA STATE UNIVERSITY
Extension and Outreach
Healthy People. Environments. Economies.

Estimated Livestock Returns

<http://www2.econ.iastate.edu/estimated-returns/>



A monthly barometer of livestock profitability

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Iowa Beef Center

<https://www.iowabeefcenter.org/>

IOWA STATE UNIVERSITY
Department of Economics

<https://www.econ.iastate.edu/people/lee-schulz>

