

farmdoc**DAILY** LIVE | Coronavirus and Ag

Impact of the Coronavirus Pandemic on Livestock Markets



Lee Schulz



Todd Hubbs

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ILLINOIS

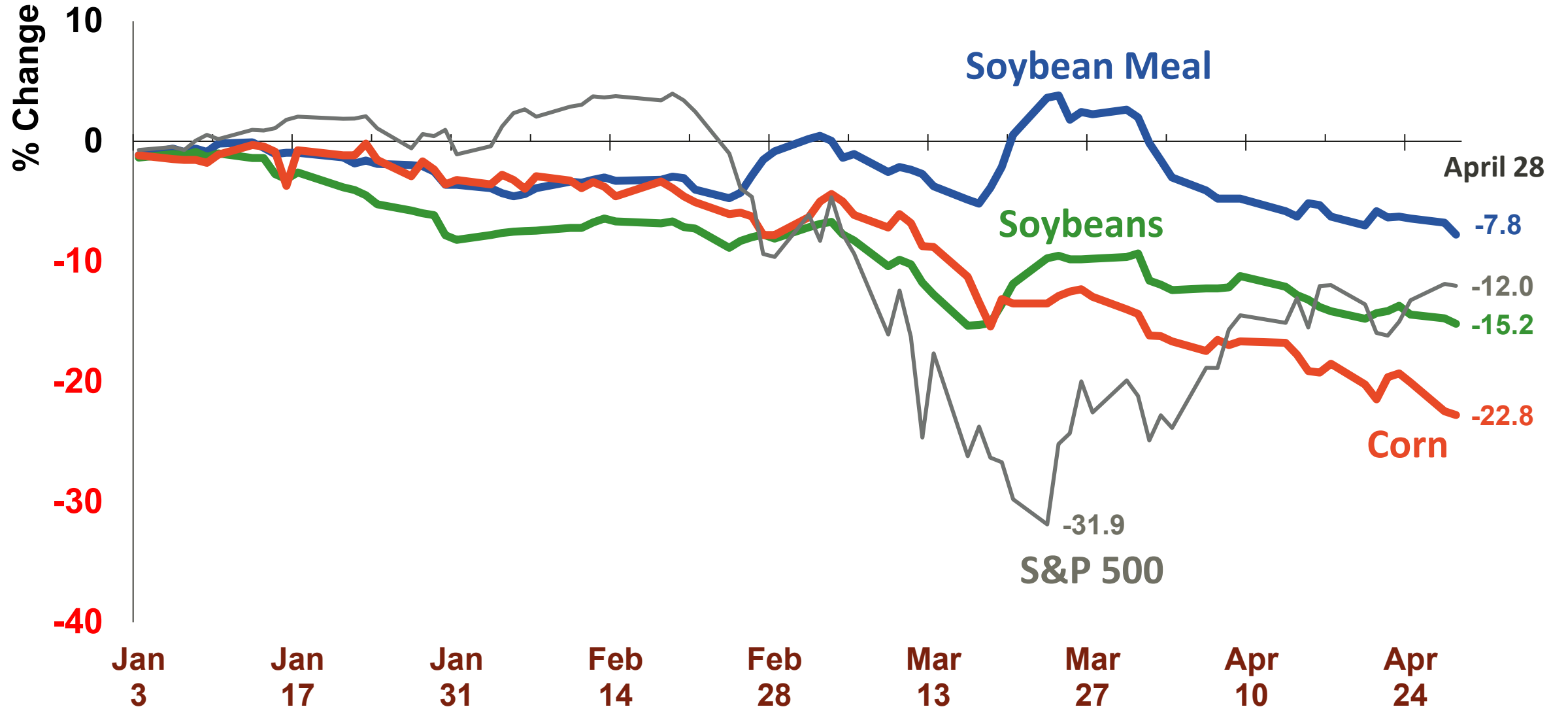
Agricultural &
Consumer Economics

COLLEGE OF AGRICULTURAL, CONSUMER
& ENVIRONMENTAL SCIENCES

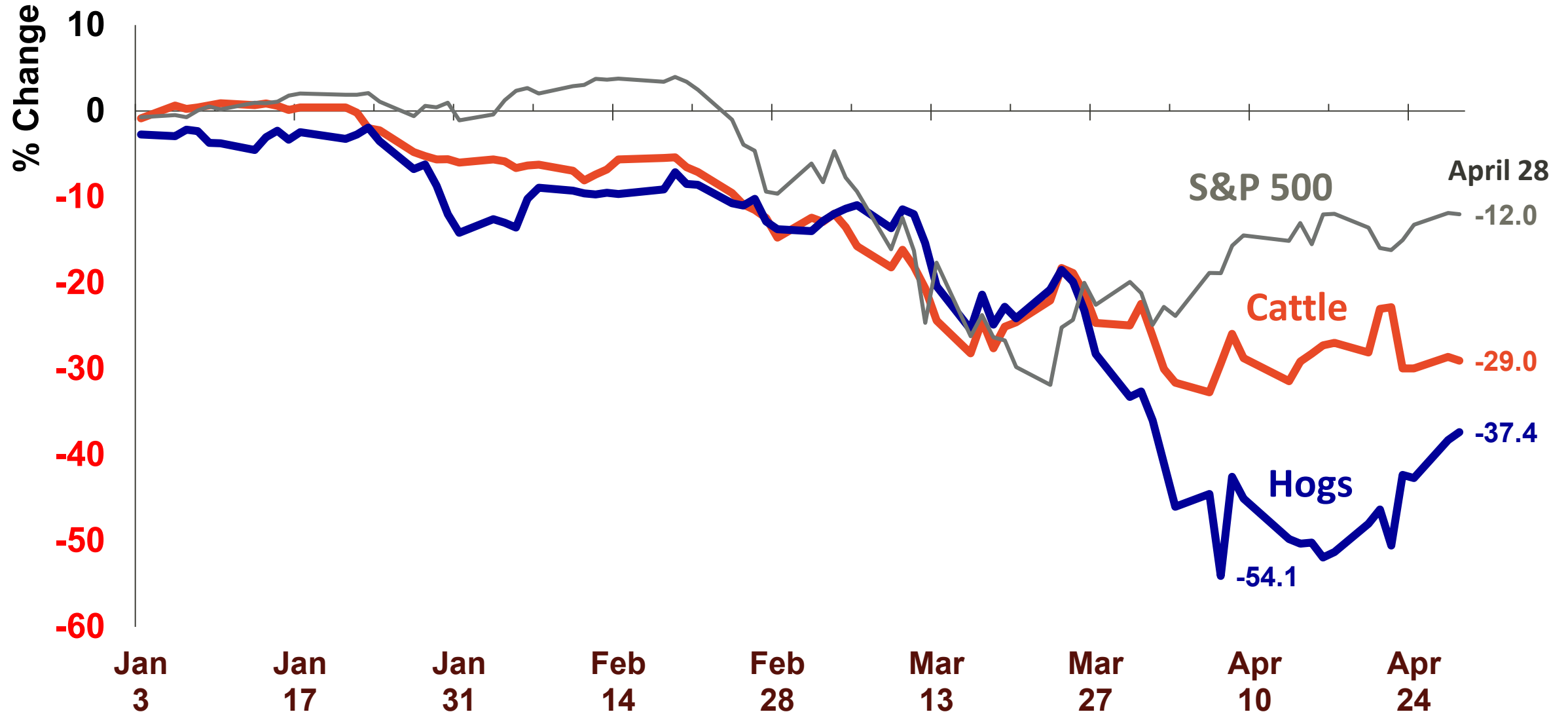
Todd Hubbs



Change in Stock Market and Grain Prices Since the Beginning of 2020



Change in Stock Market and Livestock Prices Since the Beginning of 2020



JBS closes Worthington pork plant indefinitely

Tyson Foods says 2 dead from COVID-19 outbreak at Columbus Junction plant

Another Big Meat Plant Shuttters With U.S. on Brink of Shortages

Tyson Foods idling its largest pork plant amid Iowa outbreak

Higher prices, fewer options for meat lovers as coronavirus closes more Illinois meatpacking plants

The Food Chain's Weakest Link: Slaughterhouses

Trump Orders Meat Plants to Stay Open in Move Unions Slam

Smithfield Foods closes Sioux Falls plant amid COVID-19 outbreak

What do you think fourth quarter lean hog prices will be?

- Below 50
- 50-55
- 55-60
- 60-65
- Above 65

IOWA STATE UNIVERSITY

Department of Economics



Lee Schulz

FARMDOC DAILY LIVE: CORONAVIRUS AND AG
WEBINAR | MAY 1, 2020

**Impact of the Coronavirus
Pandemic on Livestock Markets**
(Focus on the Hog-Pork Market)

Lee Schulz, Dept. of Economics, Iowa State University
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USDA Quarterly Hogs and Pigs Report – United States

March 26, 2020

	United States			Iowa			Approximate Market Timing
	2019	2020	2020 as % of 2019	2019	2020	2020 as % of 2019	
Inventories on Mar 1 *							
All hogs and pigs	74,661	77,629	104.0	23,700	24,600	103.8	
Kept for breeding	6,349	6,375	100.4	1,030	980	95.1	
Market	68,313	71,254	104.3	22,670	23,620	104.2	
Under 50 pounds	21,373	22,221	104.0	5,510	5,920	107.4	Mid-Jul – August
50-119 pounds	19,168	19,853	103.6	7,510	7,530	100.3	June – Mid-Jul
120-179 pounds	15,001	15,581	103.9	5,630	5,640	100.2	May
180 pounds and over	12,771	13,598	106.5	4,020	4,530	112.7	March – April
Farrowing **							
Sep – Nov sows farrowed	3,205	3,247	101.3	570	540	94.7	
Dec – Feb sows farrowed ¹	3,099	3,158	101.9	530	520	98.1	
Mar – May intentions	3,133	3,119	99.6	530	510	96.2	
Jun – Aug intentions	3,275	3,134	95.7	550	510	92.7	
Dec – Feb pigs per litter ¹	10.70	11.00	102.8	11.20	11.25	100.4	
Dec – Feb pig crop ^{1*}	33,163	34,734	104.7	5,936	5,850	98.6	

* 1,000 head, ** 1,000 litters, ¹ Dec preceding year

LIFE CYCLE OF A MARKET PIG

GESTATION (pregnancy)

- 114 days (3 months, 3 weeks and 3 days)
- Gilts (female pigs) reach maturity and are bred at 170 to 220 days of age.
- After delivering their first litter of pigs, gilts are called sows.
- Gestation (pregnancy) is about 114 days, or 3 months, 3 weeks and 3 days.

FARROWING (birth to weaning)

- 21 days (3 weeks)
- Sows and gilts are moved to a farrowing barn when ready to give birth (farrow).
- Usually, a sow or gilt will have 12 to 13 pigs per litter.
- 2-3 LBS. AT BIRTH
- Sows nurse piglets until they are weaned at about 21 days of age.
- 13-15 LBS. AT WEANING



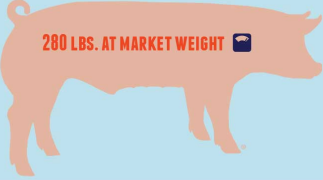
NURSERY

- 42 to 56 days (6 to 8 weeks)
- After weaning, piglets are moved to a nursery or to a wean-to-finish barn and are housed with piglets from other litters.
- Specialized temperature controls and ventilation support the newly weaned piglets.
- Piglets are fed a corn/soybean meal diet, eating 1.4 to 4 lbs. per day.
- In this phase, pigs grow to 50 to 60 lbs.
- 50-60 LBS. AFTER NURSERY PHASE

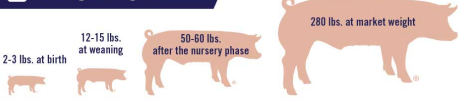


GROWING AND FINISHING

- 115 to 120 days (16 to 17 weeks)
- Pigs are moved from the nursery to a finishing barn to accommodate their continued growth. If pigs are in a wean-to-finish barn, they remain there.
- In the grow/finish phase, pigs consume 6 to 10 lbs. of feed daily.
- A diet typically consists of corn and soybean meal, as well as vitamins and minerals to ensure proper health and growth of the pigs.
- As the pigs grow, they are monitored daily to ensure that they are healthy.
- At about six months of age, the pigs weigh about 280 lbs. and are then market ready.



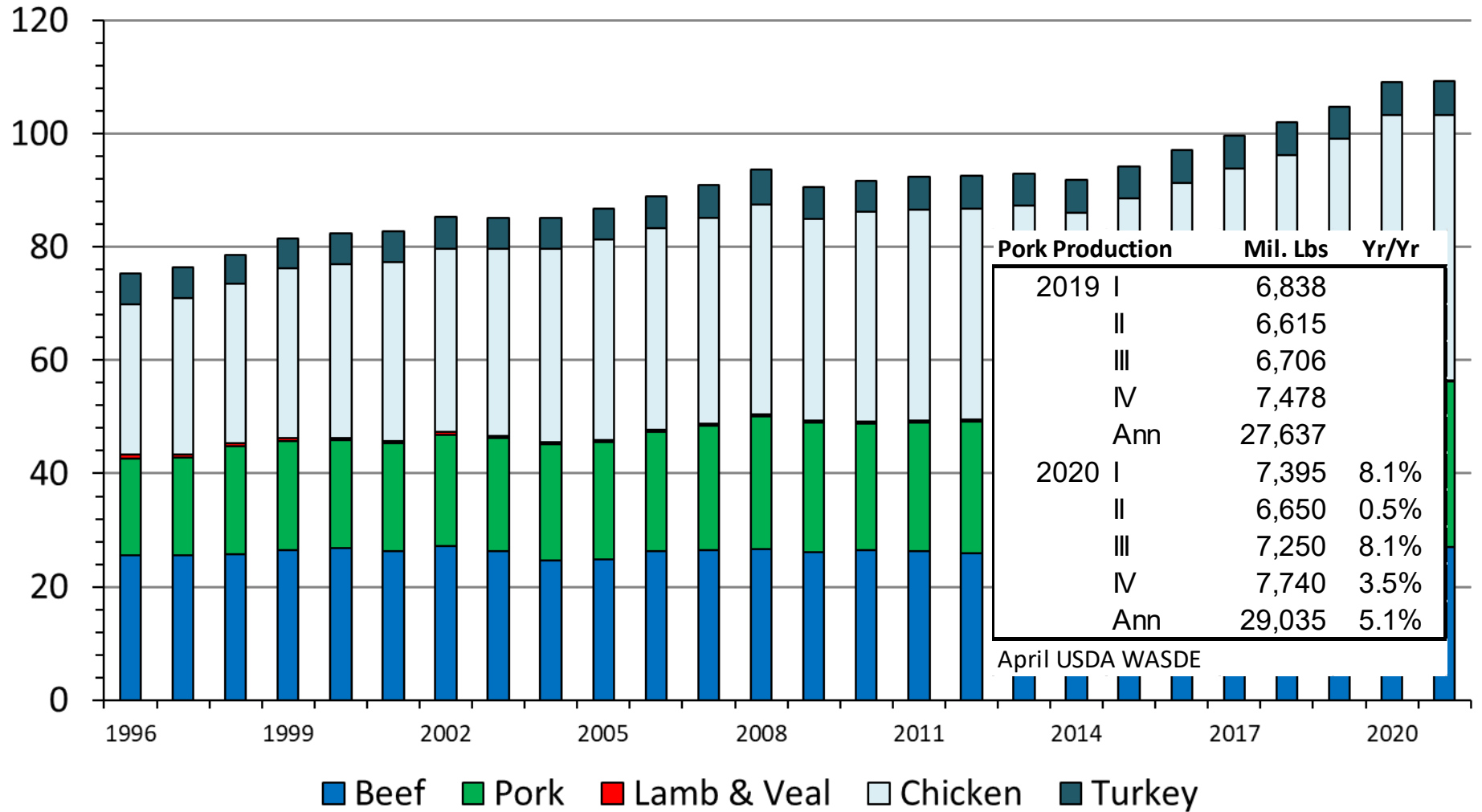
Average Weights



COMMERCIAL MEAT & POULTRY PRODUCTION

Bil. Pounds

By Type of Meat, Annual

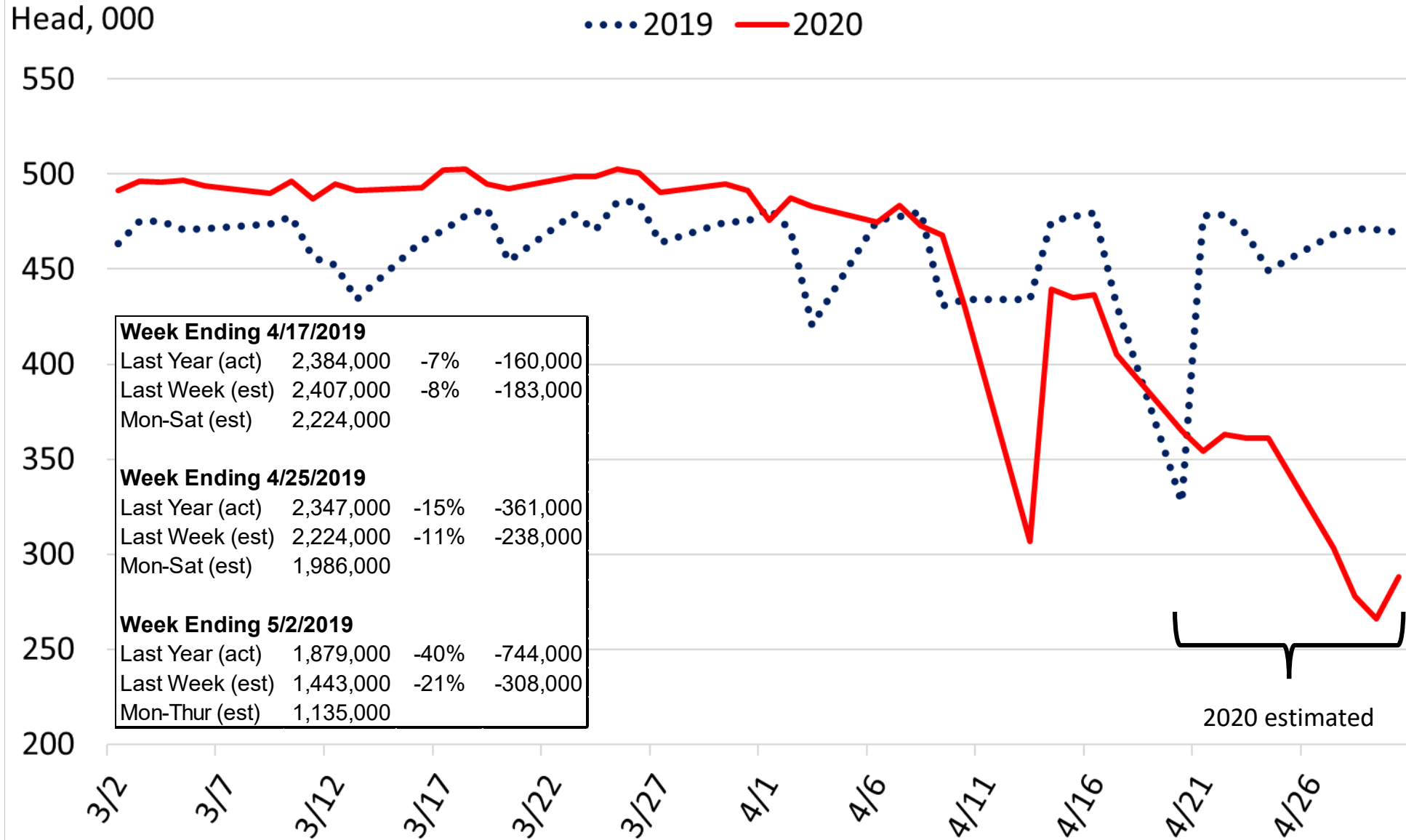


Data Source: USDA-NASS, Compiled & Forecasts by LMIC

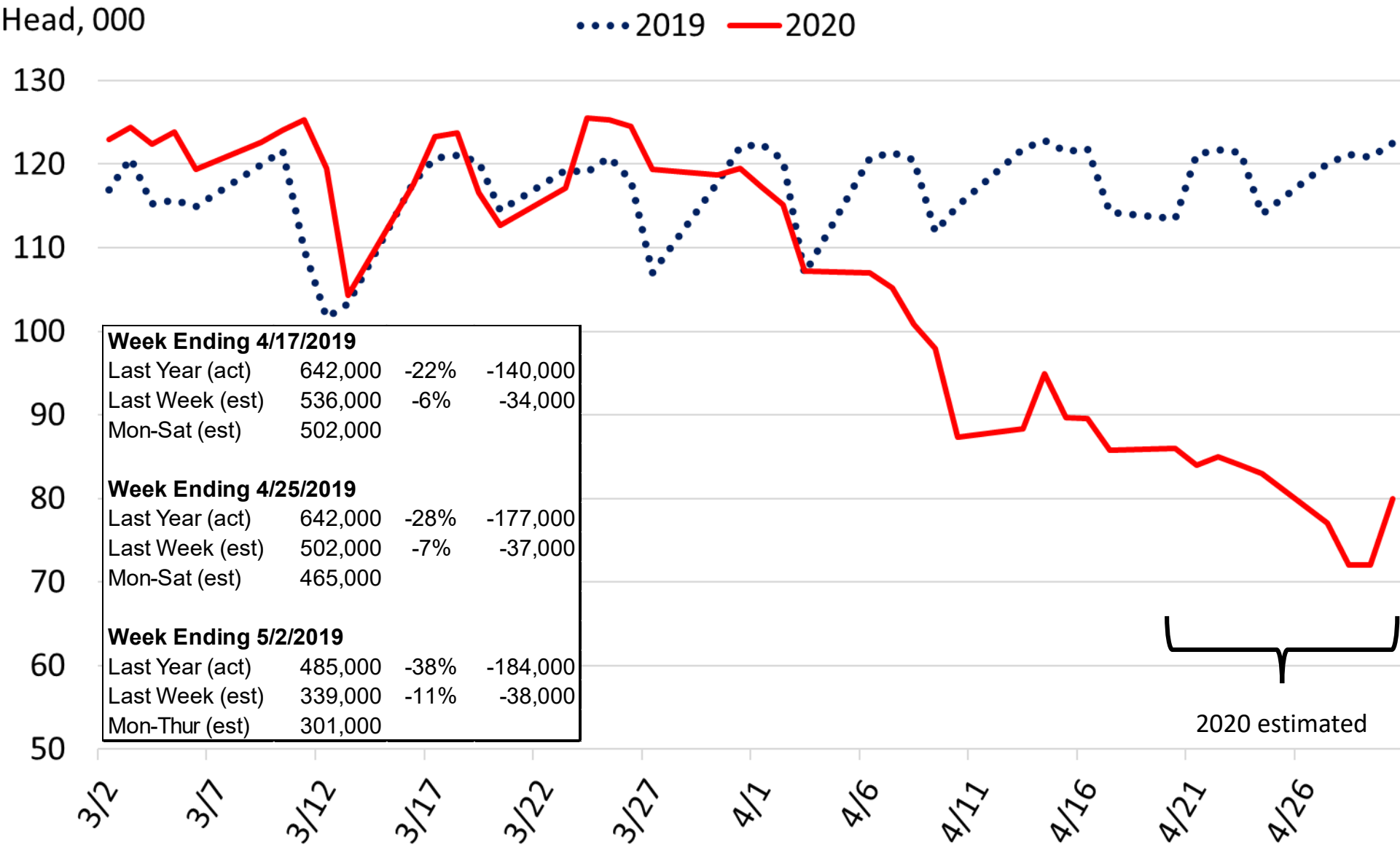
Livestock Marketing Information Center

M-S-03A
04/17/20

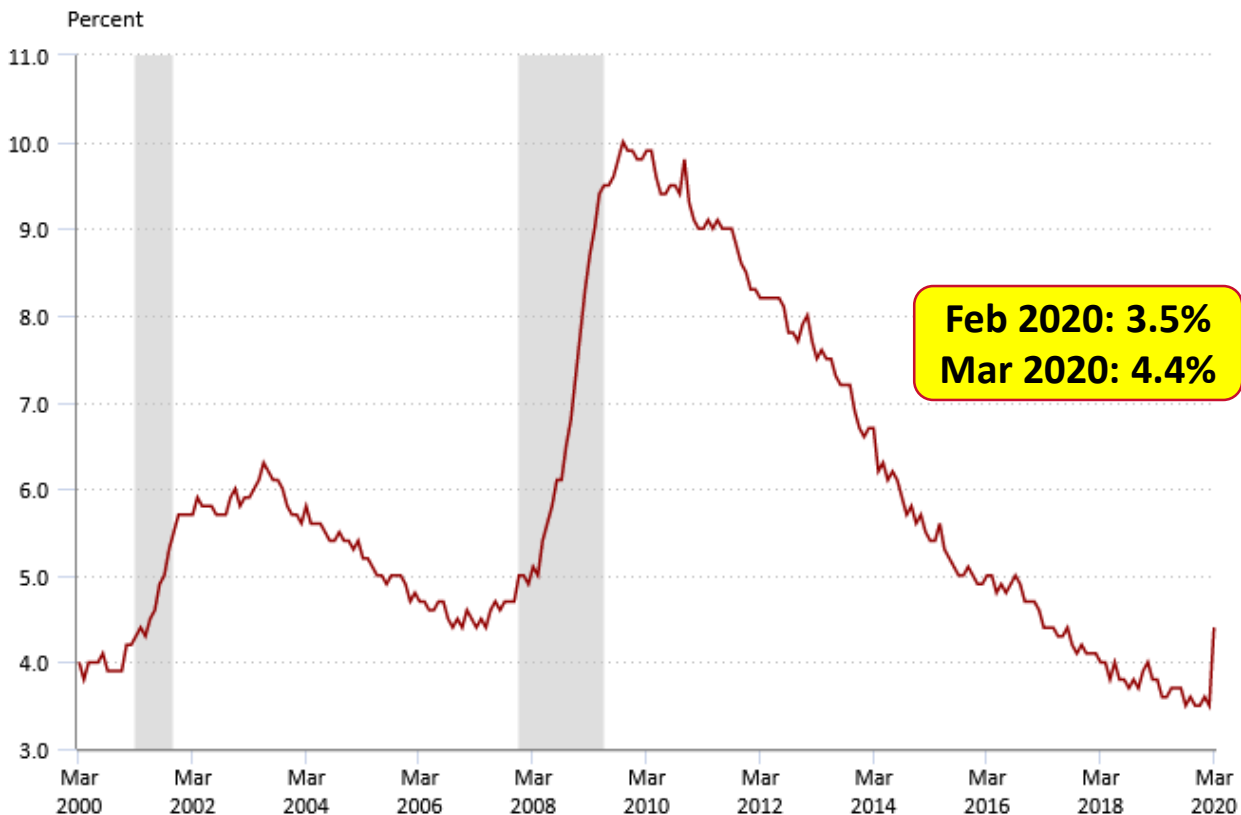
Daily FI Hog Slaughter, Weekdays



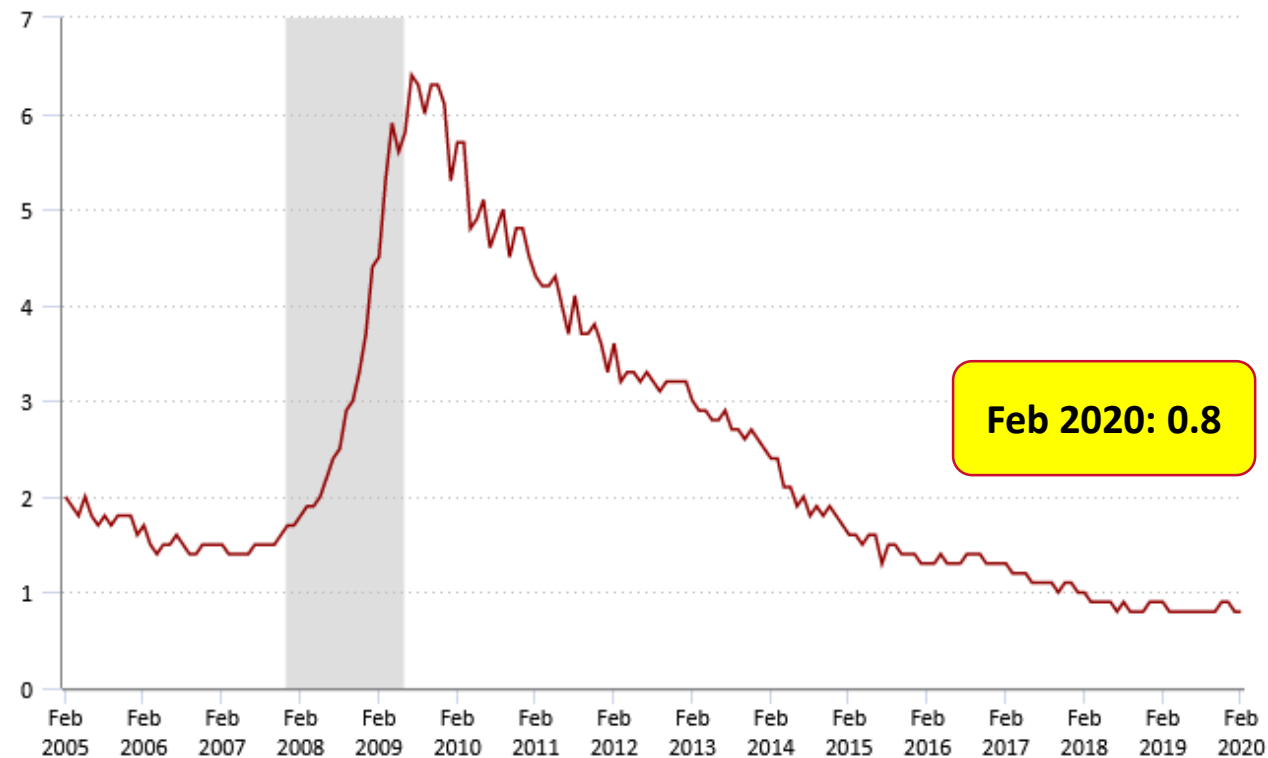
Daily FI Cattle Slaughter, Weekdays



Total Civilian Unemployment Rate, Seasonally Adjusted



Number of Unemployed Persons per Job Opening, Seasonally Adjusted

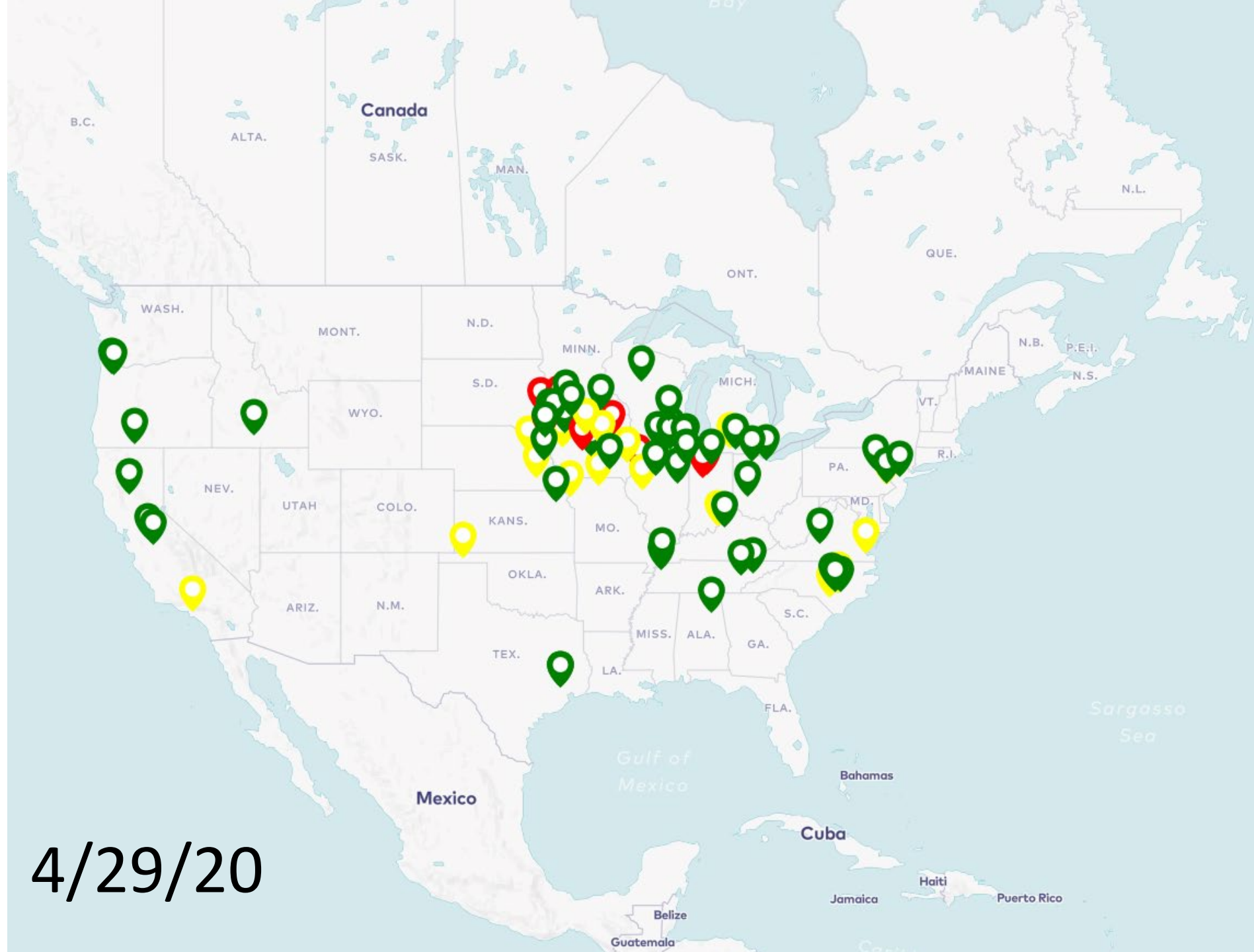




U.S. Pork Packers

- Green = Fully Operating
- Yellow = Under Capacity
- Red = Closed

	Smithfield Foods	10	<input type="radio"/>
	Tyson Foods	7	<input type="radio"/>
	JBS	5	<input type="radio"/>
	Seaboard/Triumph	3	<input type="radio"/>
	Clemens Food Group	2	<input type="radio"/>
	Indiana Packing Company	1	<input type="radio"/>
	Hormel	1	<input type="radio"/>
	Prestage Farms	1	<input type="radio"/>
	Other	29	<input type="radio"/>



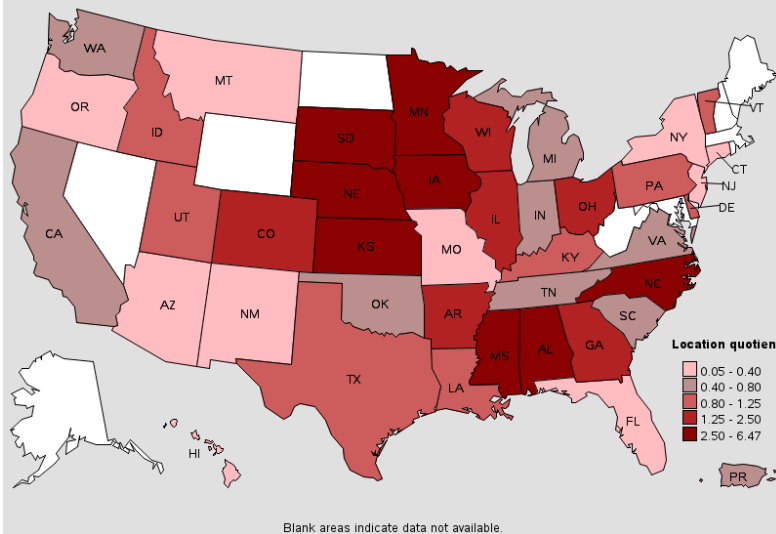
Occupational Employment and Wages, May 2019

Slaughterers and Meat Packers



U.S. BUREAU OF LABOR STATISTICS

Location quotient of slaughterers and meat packers, by state, May 2019



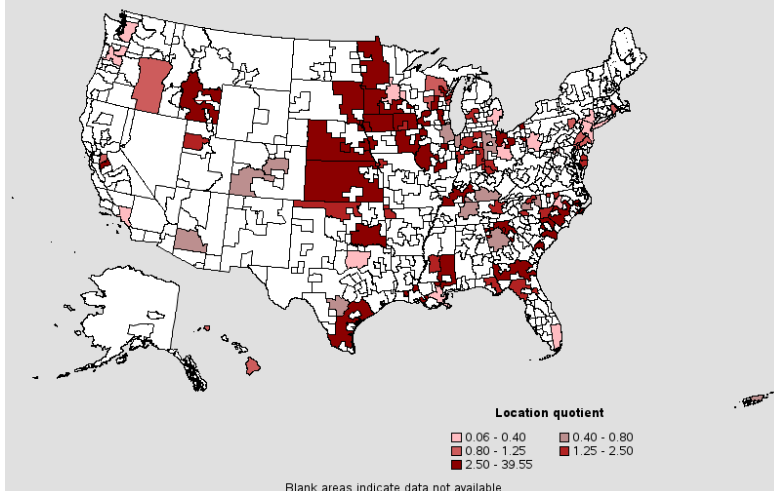
States with the highest concentration of jobs and location quotients in this occupation:

State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
Iowa	5,010	3.23	6.47	\$15.86	\$32,980
South Dakota	960	2.26	4.53	\$14.54	\$30,250
Nebraska	1,850	1.88	3.76	\$15.35	\$31,930
Minnesota	5,220	1.81	3.63	\$15.42	\$32,070
Alabama	3,370	1.71	3.42	\$10.86	\$22,590

Metropolitan areas with the highest concentration of jobs and location quotients in this occupation:

Metropolitan area	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
Sioux City, IA-NE-SD	1,290	15.24	30.49	\$15.97	\$33,220
Gainesville, GA	1,000	11.23	22.47	\$12.77	\$26,570
Modesto, CA	1,000	5.36	10.72	\$13.48	\$28,030
Omaha-Council Bluffs, NE-IA	1,110	2.26	4.52	\$13.81	\$28,730
Green Bay, WI	340	1.93	3.86	\$17.09	\$35,540
Grand Island, NE	80	1.88	3.77	\$15.08	\$31,380
Salisbury, MD-DE	170	1.06	2.13	\$15.58	\$32,400
Cincinnati, OH-KY-IN	1,080	0.99	1.99	\$13.14	\$27,340
Knoxville, TN	370	0.96	1.92	\$11.85	\$24,640
Waterloo-Cedar Falls, IA	80	0.93	1.86	\$16.35	\$34,000

Location quotient of slaughterers and meat packers, by area, May 2019



Hogs Federally Inspected Plants and Head Slaughtered by Size Group –United States: 2019

<u>Size group</u>	Plants		Head	
	Num.	Pct.	Thou	Pct.
1 - 999	396	64.0%	125.4	0.1%
1,000 - 9,999	123	19.9%	337.9	0.3%
10,000 - 99,999	39	6.3%	1,529.4	1.2%
100,000 - 249,999	18	2.9%	2,967.6	2.3%
250,000 - 499,999	7	1.1%	2,501.0	1.9%
500,000 - 999,999	3	0.5%	2,074.1	1.6%
1,000,000 - 1,999,999	6	1.0%	7,849.1	6.1%
2,000,000 - 2,999,999	12	1.9%	31,794.8	24.6%
3,000,000+	15	2.4%	80,031.5	61.9%
Total	619		129,210.8	

Economies (Abilities) of Size

- “Normal” national processing capacity: ~500,000 head/day
- If because of plant closures/slowdowns, say 40% of capacity is absent
 - Then $500,000 * 0.4 = 200,000$ market-ready hogs are backed up on the farm
...**EVERY SINGLE DAY THE CAPACITY IS ABSENT**
 - Do that for 5 days: 1,000,000 head back up in a week
- Assume a small-ish 200 head/day packer *could* take hogs
- How many extra days would this plant have to run to make up for 1 day of a 20,000 head/day packer’s lost production?
 - $200,000 / 2,000 = 100$ extra days
 - Or, 100 brand new small-ish packing plants

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

Model: $\ln(\text{prices}) = f(\ln(\text{utilization}), \text{trend})$

✓ **1%** ↑ in packing plant utilization

✓ **1.82%** ↓ in hog prices

Scenario of ↓ capacity (↑ utilization)

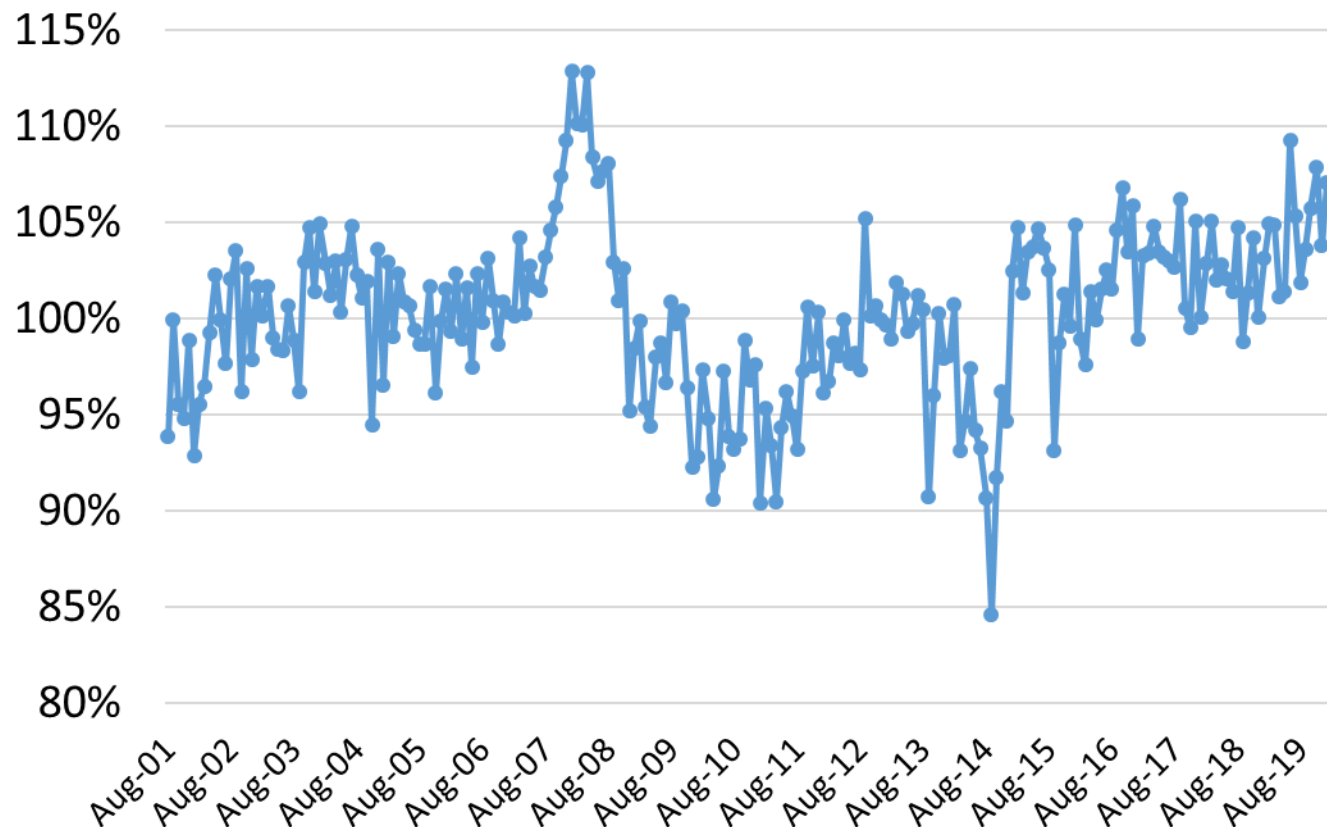
10%: anticipate hog prices to ↓ 18.2%

20%: ↓ 36.4%

30%: ↓ 54.6%

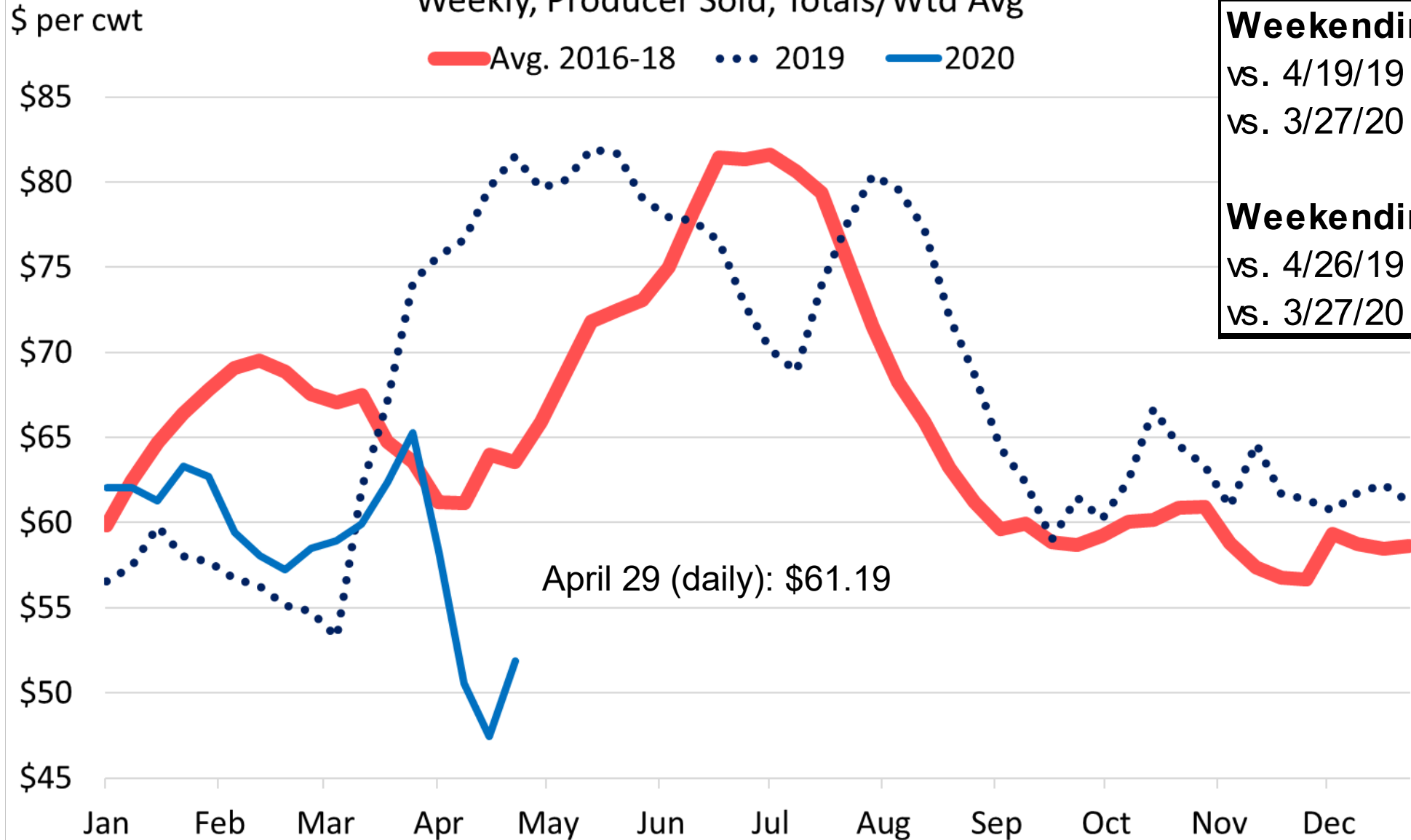
Est. Pork Packing Plant Utilization-to-Capacity

August 2001 - February 2020, Monthly



IOWA/MINNESOTA BARROW & GILT BASE PRICE

Weekly, Producer Sold, Totals/Wtd Avg



Iowa/Minnesota Daily Direct Prior Day Hog Report Based on State of Origin (LM_HG204)

Producer Sold	Wednesday, April 29, 2020		
Purchase Type	Head	%	Price
Negotiated	2,954	4%	36.80
Other Market Formula (Fut/Opt)	12,542	17%	60.38
Swine or Pork Market Formula	33,849	46%	62.60
Other Purchase Arrangement	24,031	33%	62.63
Totals/Wtd Avg	73,376		61.19

National Direct Delivered Feeder Pig Report: Week Ending Apr 24 2020

Weekly Summary of prices on a delivered farm to farm basis

RECEIPTS THIS WEEK: 88,006 LAST WEEK: 119,827 LAST YEAR: 99,724

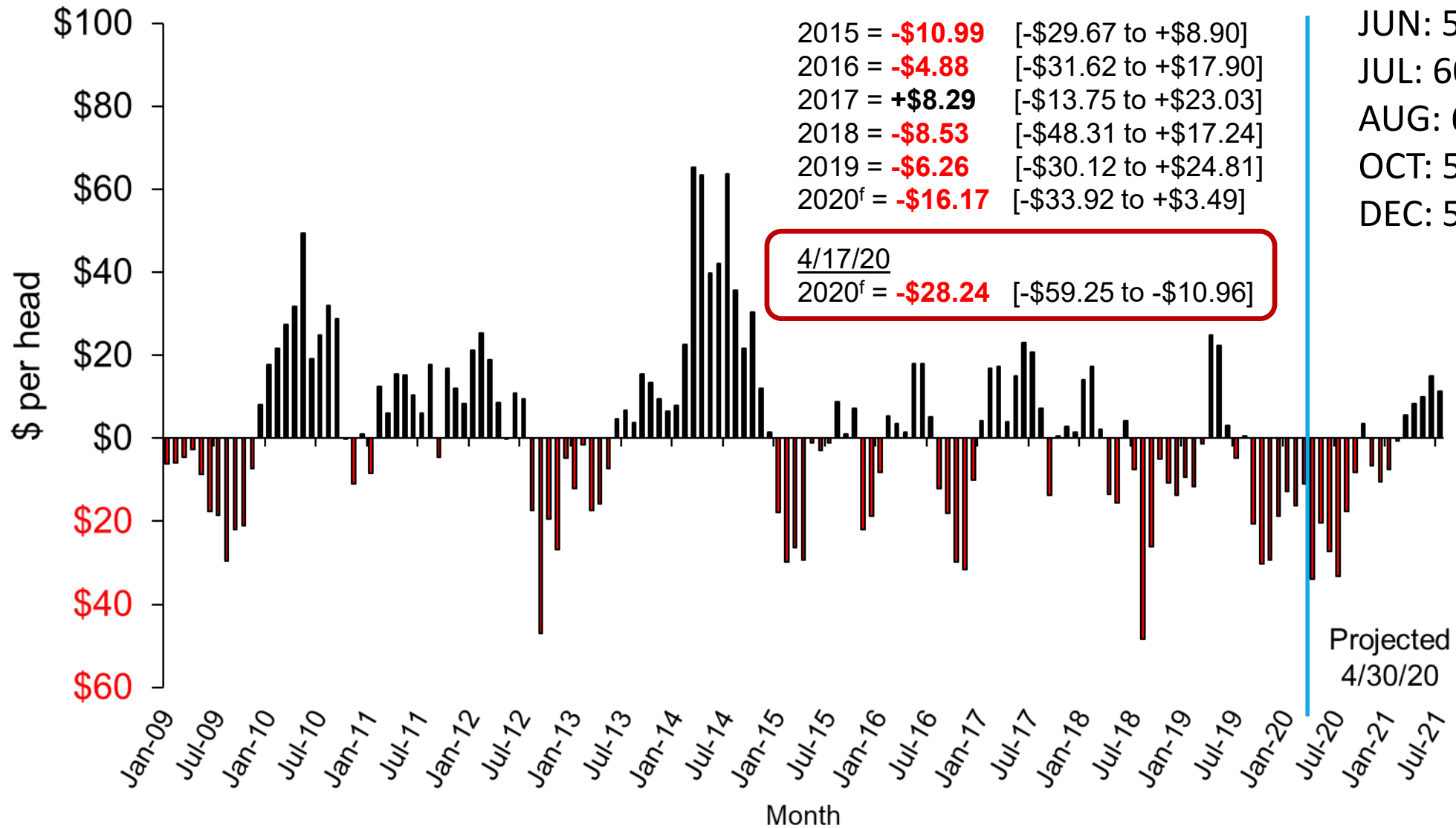
All Prices Quoted on Per Head Basis With An Estimated Lean Value of 50-54%

Lot Size	Head	Formula Range	Formula Wtd Avg	Head	Cash Range	Cash Wtd Avg
EARLY WEANED Pigs 10-12 Pounds Basis:						
600 or less				3226	1.00-8.00	3.62
600 - 1200				3300	2.50-5.50	4.00
1200 or more	36298	17.63-40.50	28.64	30608	1.50-6.75	4.00
Total Composite	36298	17.63-40.50	28.64	37134	1.00-8.00	3.97
FEEDER Pigs 40 Pounds Basis:						
600 or less				2374	15.00-20.00	17.22
600 - 1200				2800	15.00-21.00	18.29
1200 or more				9400	15.00-22.00	17.59
Total Composite				14574	15.00-22.00	17.66

Jul-08: \$5.78
Aug-12: \$8.08

Estimated Returns to Wean to Finish, Iowa

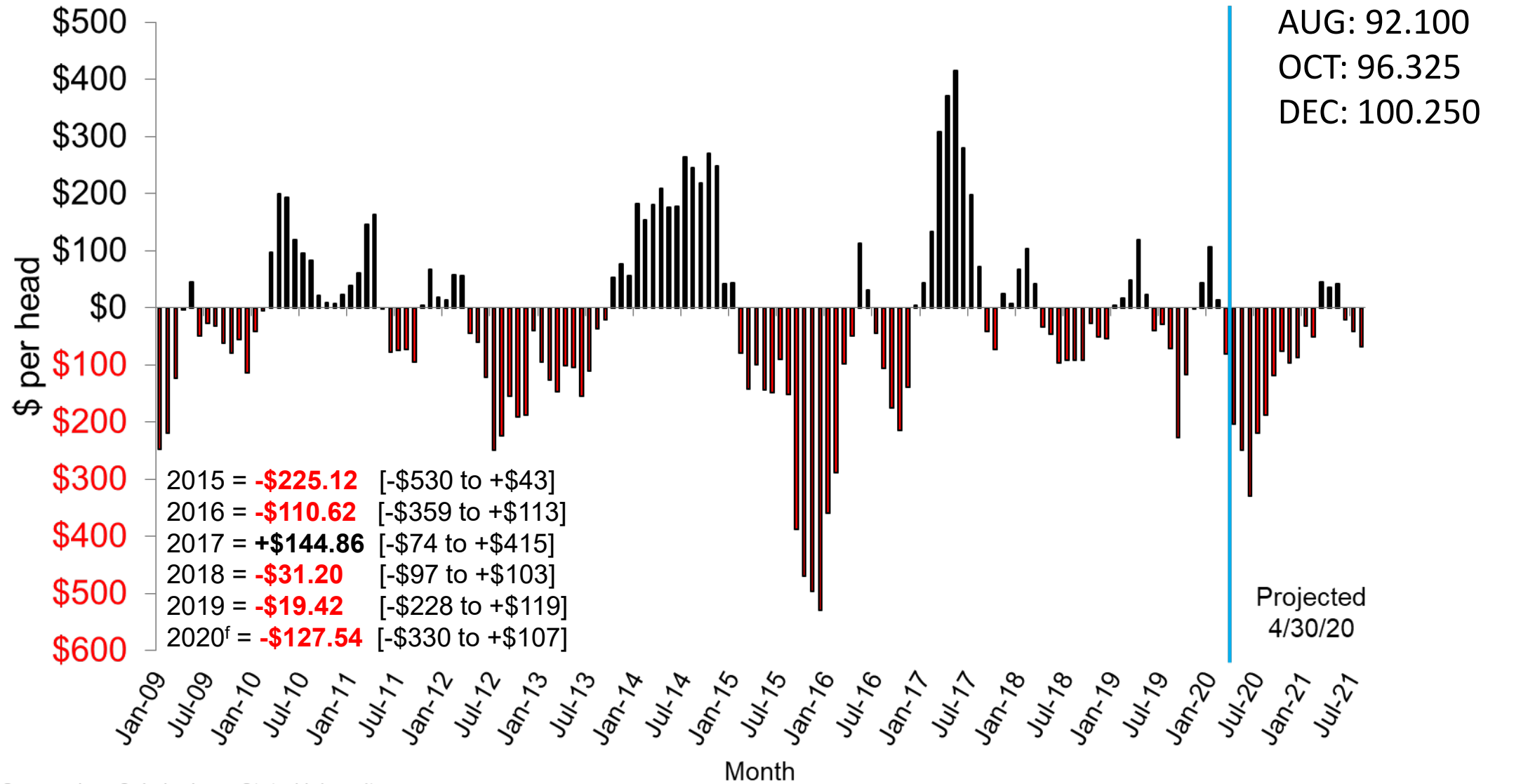
Past and Projected with Basis Adjusted Futures



Source: Lee Schulz, Iowa State University

Estimated Returns to Finishing Yearling Steers, Iowa

Historical and Projected with Basis Adjusted Futures



Meat Availability and Shortages Overview

Glynn Tonsor (gtonsor@ksu.edu) Kansas State University Department of Agricultural Eco
 Lee Schulz (lschulz@iastate.edu) Iowa State University Department of Economics
 Jayson Lusk (jlusk@purdue.edu) Purdue University, Department of Agricultural Economic

This week in Pork Retail

- Feature activity drastically lower than year ago
- Many locations suspended or reduced ads
- Prices mixed compared to year ago

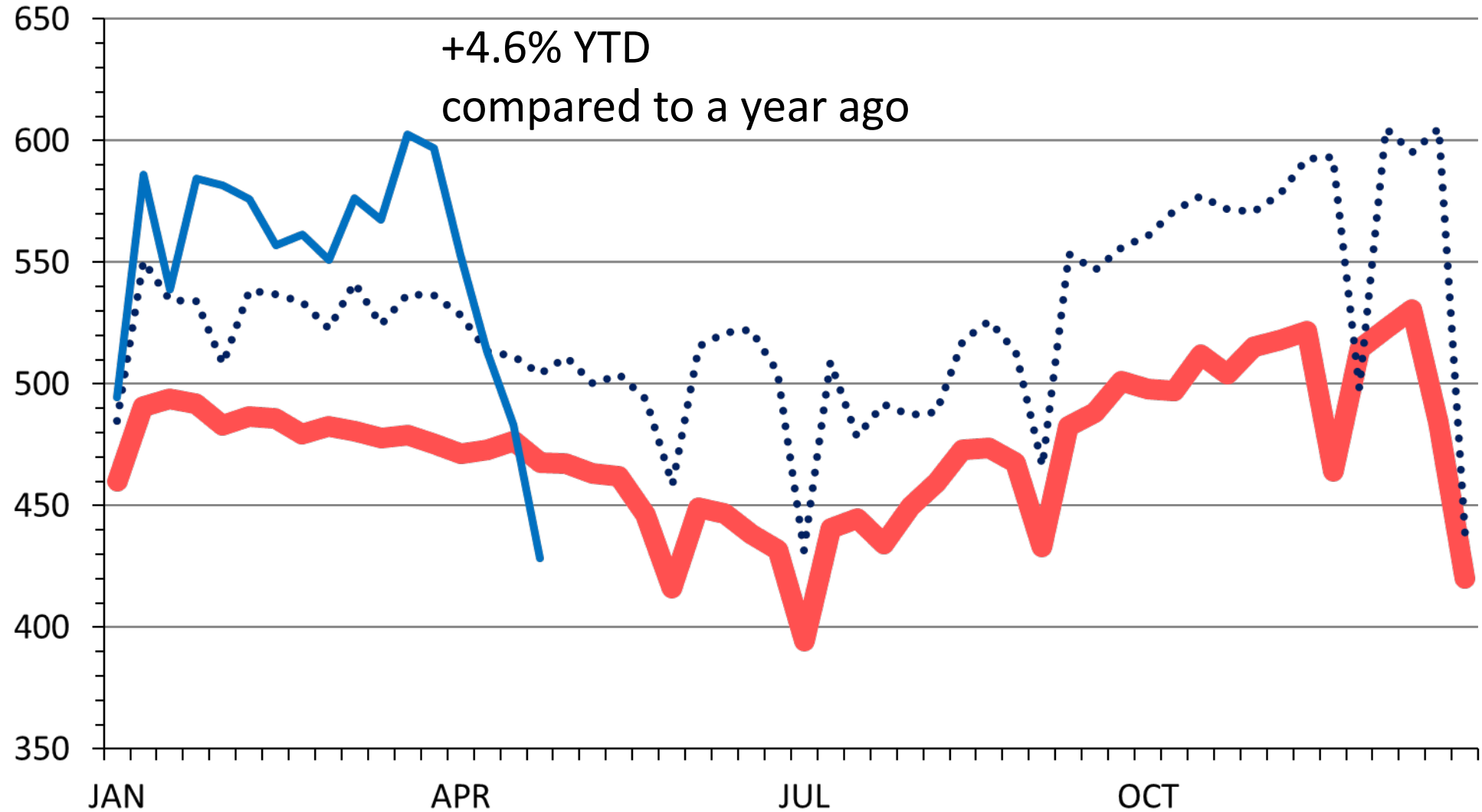
	NATIONAL SUMMARY					
	THIS WEEK		LAST WEEK		LAST YEAR	
	Stores	Wtd Avg	Stores	Wtd Avg	Stores	Wtd Avg
Whole Bone-In Loins	20	1.98	90	1.88	90	1.28
Bone-In Cc Loin			60	1.99	220	1.76
Loin Roast Bnls	920	2.34	2,430	2.07	2,950	2.02
Rib End Roast B/In	110	1.39			70	1.99
Sirloin End Roast B/In	210	1.76	180	1.49	170	1.49
Sirloin Roast Bnls	20	1.88	1,110	1.80	380	1.97
Rib End Chops B/In	180	2.45	50	3.49	2,160	2.82
Sirloin Chops B/In	710	1.77	340	1.42	650	1.33
Cc Chops B/In	1,930	3.00	2,070	2.78	5,050	2.66
Assorted Chops B/In	2,220	2.26	570	2.10	2,970	1.57
Rib Chops Bnls			270	3.99	350	3.02
Sirloin Chops Bnls	960	1.67	300	2.13	1,420	2.15
Cc Chops Bnls	3,480	3.25	1,820	3.21	3,330	3.23
Smoked Chops	400	6.27	90	5.64	400	3.57
Tenderloin, Fresh	1,800	3.28	1,980	4.58	3,000	3.50
Tenderloin, Marinated	1,430	4.97	480	5.76	2,330	5.55
Backribs	2,870	3.56	2,560	2.98	3,080	3.43
Picnic Fresh B/In	850	1.42	200	1.57	1,640	1.04
Porketta	60	2.99	140	2.89	70	2.79
Butt Fresh B/In	3,020	1.71	840	1.46	1,870	2.13
Butt Roast Bnls	140	1.50	170	2.09	670	1.79
Pork Steak	780	1.84	820	1.79	1,260	1.88
Country Style Rib B/In	1,000	1.93	1,520	1.85	4,810	2.05
Country Style Ribs Bnls	320	2.05	330	3.24	1,010	2.70
Spareribs	4,200	2.41	1,440	1.87	2,330	2.16

PORK PRODUCTION

Federally Inspected, Weekly

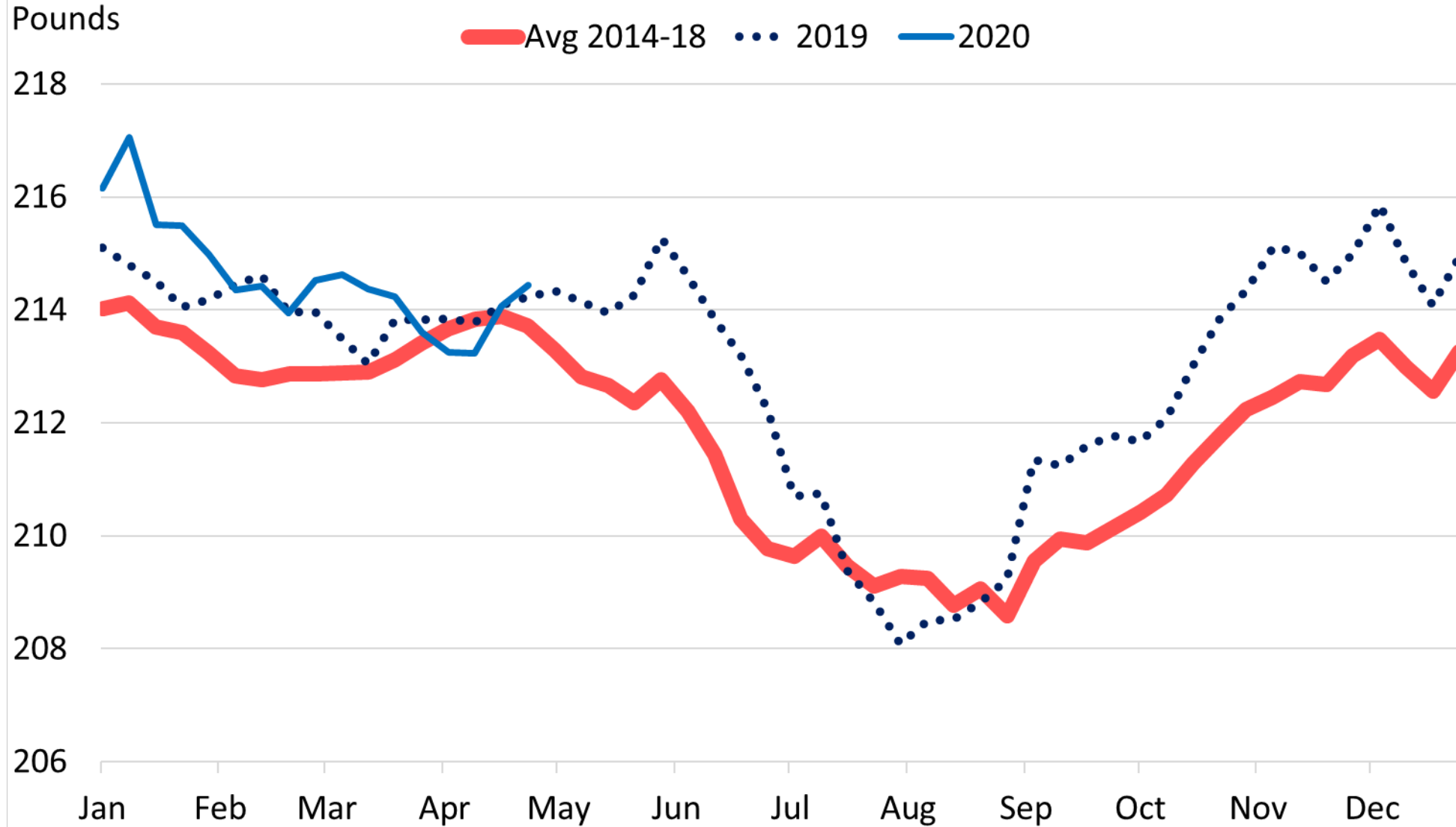
Mil. Pounds

Avg. 2014-18 2019 2020



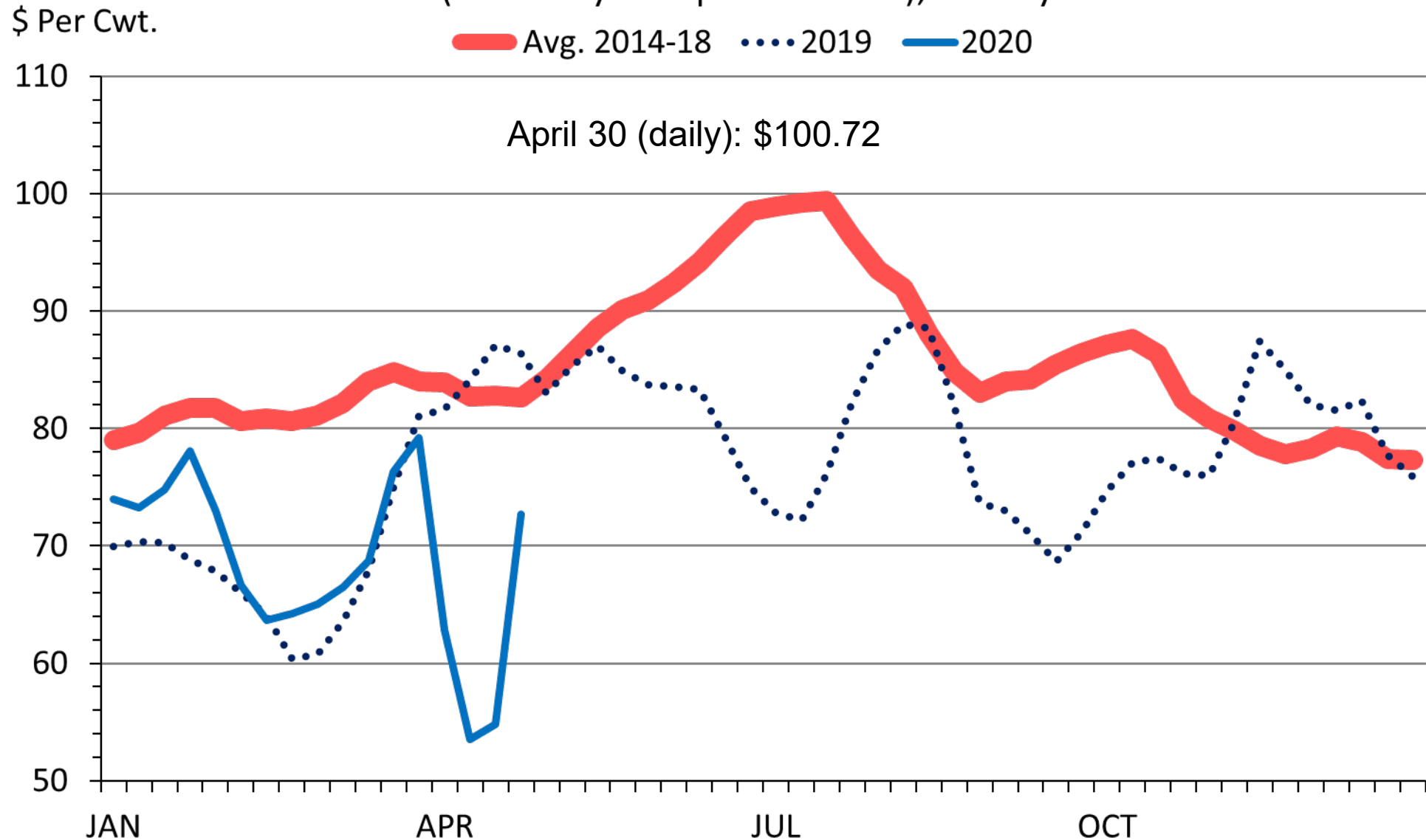
Average Carcass Weight, Weekly, Producer Owned

National, Prior Day Slaughter, LM_HG201



PORK CUTOUT VALUE

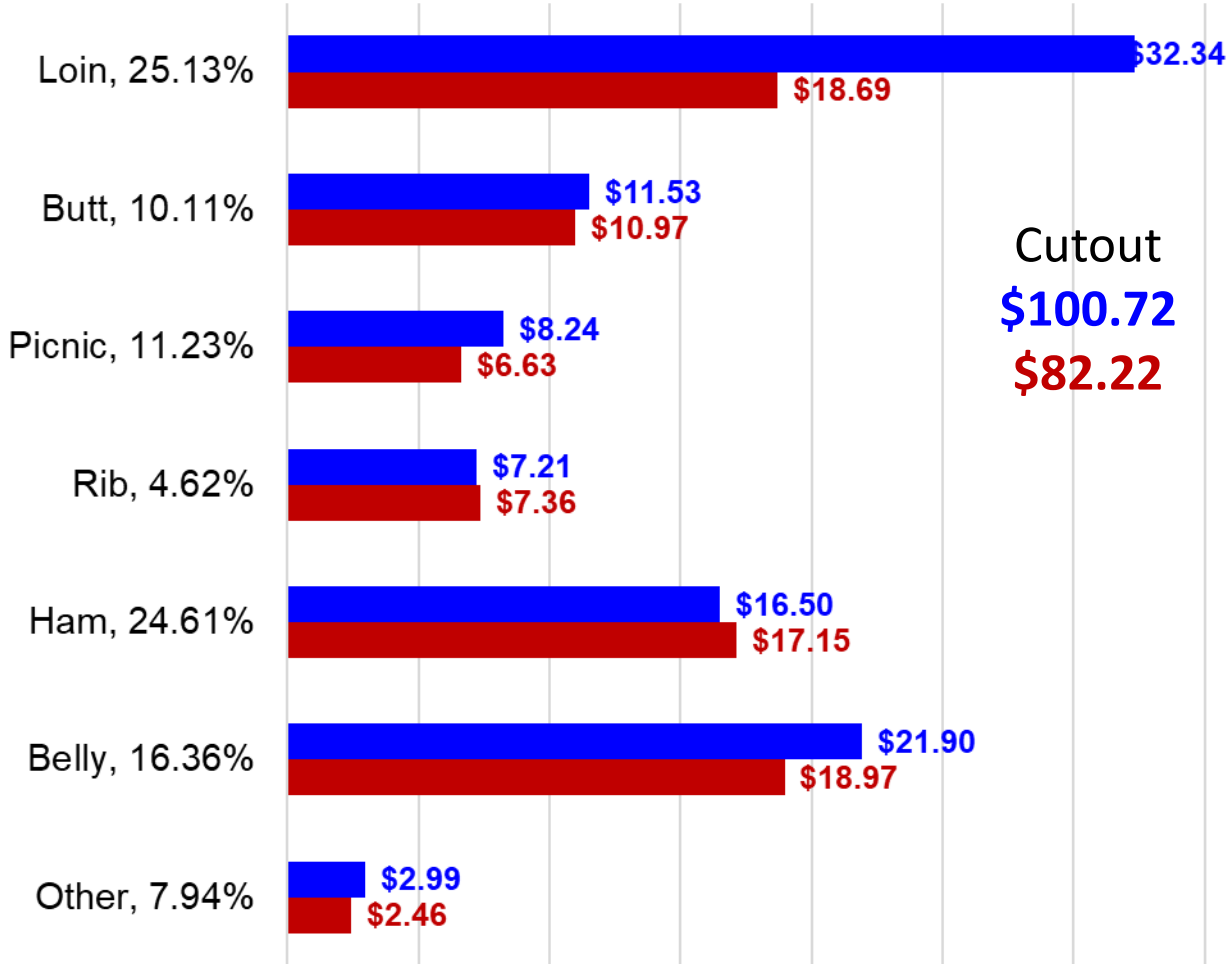
(Voluntary data prior to 2013), Weekly



Contribution of Each Primal to Change in Value of the Pork Cutout

USDA-AMS, LM_PK600, Daily

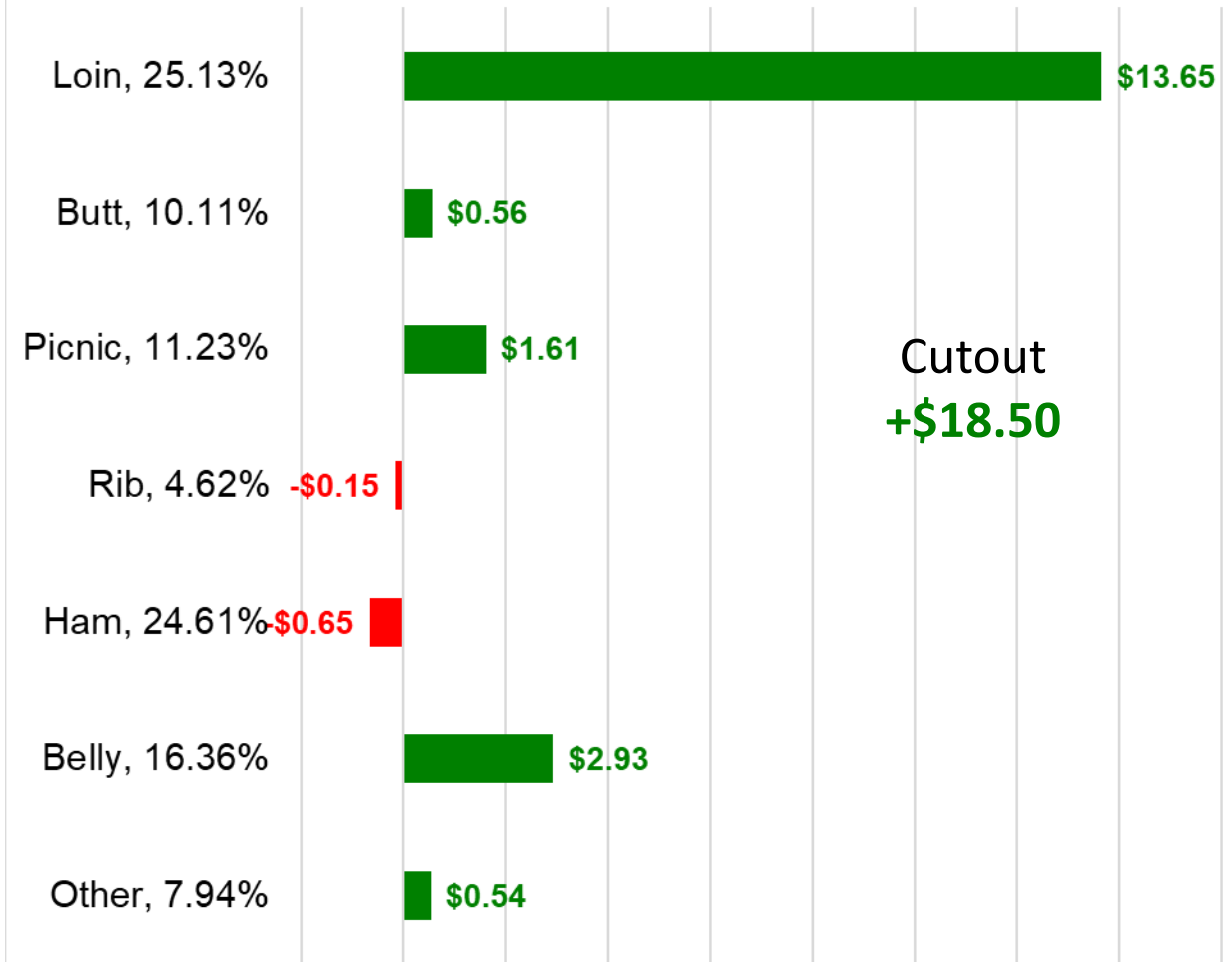
■ 4/30/2020 ■ 4/30/2019



Contribution of Each Primal to Change in Value of the Pork Cutout

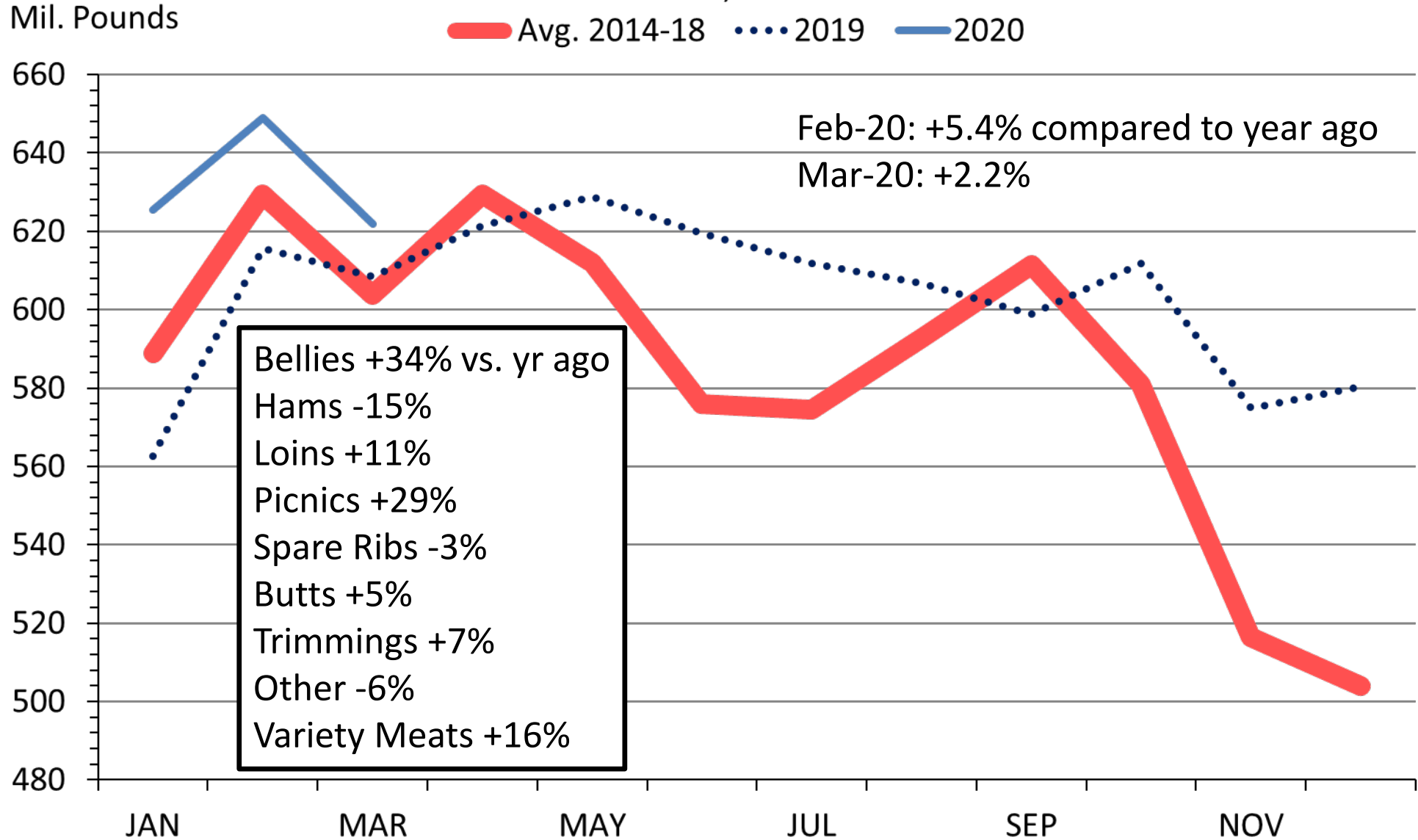
USDA-AMS, LM_PK600, Daily

April 30, 2020 vs April 30, 2019



PORK IN COLD STORAGE

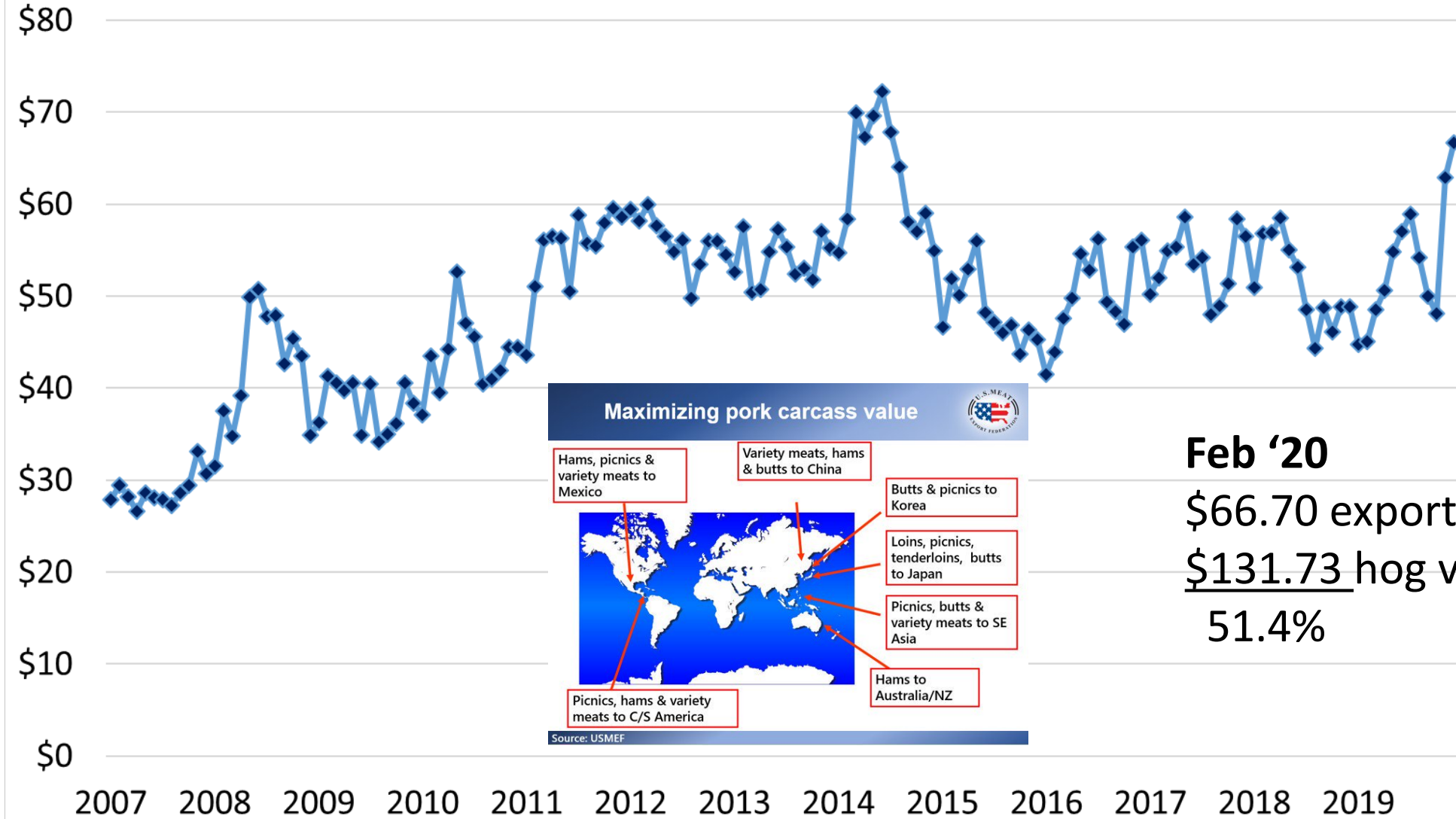
Frozen and Cured, End of the Month



PORK EXPORT VALUE PER HEAD SLAUGHTERED

Average, Monthly

\$ per Head



Maximizing pork carcass value

- Hams, picnics & variety meats to Mexico
- Variety meats, hams & butts to China
- Butts & picnics to Korea
- Loins, picnics, tenderloins, butts to Japan
- Picnics, butts & variety meats to SE Asia
- Hams to Australia/NZ
- Picnics, hams & variety meats to C/S America

Source: USMEF

Feb '20
 \$66.70 export value
\$131.73 hog value
 51.4%

FRESH, CHILLED, OR FROZEN MUSCLE CUTS OF **PORK** OUTSTANDING EXPORT SALES AND EXPORTS BY COUNTRY, 2020 vs. 2019

1000 METRIC TONS as of April 23, 2020

DESTINATION	OUTSTANDING SALES				ACCUMULATED EXPORTS				TOTAL COMMITMENTS			
	THIS WEEK	YR AGO	Diff	%	THIS WEEK	YR AGO	Diff	%	THIS WEEK	YR AGO	Diff	%
All	361.9	269.0	93	35%	682.3	392.2	290	74%	1,044.2	661.2	383	58%
Mexico	70.4	67.8	3	4%	165.3	114.6	51	44%	235.7	182.4	53	29%
Japan	40.5	12.5	28	224%	79.9	43.4	37	84%	120.4	55.9	65	115%
S. Korea	40.1	24.4	16	64%	53.6	59.0	-5	-9%	93.7	83.4	10	12%
Canada	12.0	10.6	1	13%	37.3	25.1	12	49%	49.3	35.7	14	38%
China	150.2	106.4	44	41%	274.1	59.9	214	358%	424.3	166.3	258	155%
Hong Kong	1.1	6.9	-6	-84%	4.1	14.3	-10	-71%	5.2	21.2	-16	-75%
Australia	15.3	12.1	3	26%	16.8	20.7	-4	-19%	32.1	32.8	-1	-2%
All Other	32.3	28.3	4	14%	51.2	55.2	-4	-7%	83.5	83.5	0	0%

CME:HEV2020, D 57.800 ▲ +1.300 (+2.3%) O:56.500 H:58.100 L:56.225 C:57.800



CME:LEV2020, D 96.325 ▲ +0.700 (+0.73%) O:95.000 H:97.100 L:94.800 C:96.325



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Upcoming Webinars

US-China Agricultural Trade and Shifting Consumption Patterns in China

11:00 to 11:45am CT, Tuesday May 5th

Over the past two years, policy actions have had major impacts on trade in agricultural products between the US and China. In addition, shifts in the consumption patterns are changing the demand for agricultural products by Chinese consumers. Nick Paulson will be joined by Wendong Zhang, assistant professor in Agricultural Economics at Iowa State University, for a discussion of these issues and how they impact the outlook for U.S. agricultural exports.

Agricultural Law Issues and the COVID-19 Pandemic

11:00 to 11:45am CT, Friday May 8th

The COVID-19 pandemic has sent shockwaves through the agricultural production system and raised unique legal issues for input suppliers, crop and livestock producers, and processors. This webinar will explore the pandemic's impact on the legal enforceability of agricultural contracts, protections afforded under commodity specific statutes such as the Perishable Agricultural Commodities Act and the Packers and Stockyards Act, regulatory compliance issues with potential large-scale euthanasia of livestock, state-level meat inspection laws, application of the Defense Production Act in the agricultural context, and a new generation of farm foreclosure moratorium laws.

Thank You for joining us!

Please submit your questions



The screenshot shows the farmdoc website interface. At the top, there's a navigation bar with 'ILLINOIS', 'EXTENSION', 'farmdocDAILY', and 'Farm Policy News'. Below that, the 'farmdoc DECISION OUTREACH CENTRAL' logo is on the left, and navigation links for 'Market Prices', 'Sections', 'Tools', 'Publications', 'Events', 'Sponsors/Donate', and 'About Us' are on the right. The main content area is titled 'Coronavirus and Ag'. It features a paragraph about the team's focus on the impact of the coronavirus and a 'Submit Questions' button. Below this, there's a section for 'farmdoc daily live: Coronavirus and Ag' with links to 'View All', 'See Upcoming', and 'Register For Series'. The page displays a grid of 12 video thumbnails, each with a title, date, and 'Watch Video'/'Download Slides' buttons. The thumbnails cover topics like 'Setting the Stage', 'Lessons from Infectious Disease and Livestock', 'Financial Perspectives on Agriculture and Coronavirus', 'Global Transportation and Cash Flow Considerations', 'Outlook and Farm Policy Moving Forward', 'Acreage Decisions 2020', 'Impacts of Covid-19 on Agricultural Assets and Lending Markets', 'Scott Irwin and Jeff Bunting on Crop Supply Logistics this Spring', 'Rural Economy Stimulus: CARES and PPP Funding', 'Getting the 2020 Crop Planted', 'The Impact of the Coronavirus Pandemic on Food Prices and Retail Food Sector', and 'An Update on Policy and Political Outlook for Coronavirus Pandemic Relief'.

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