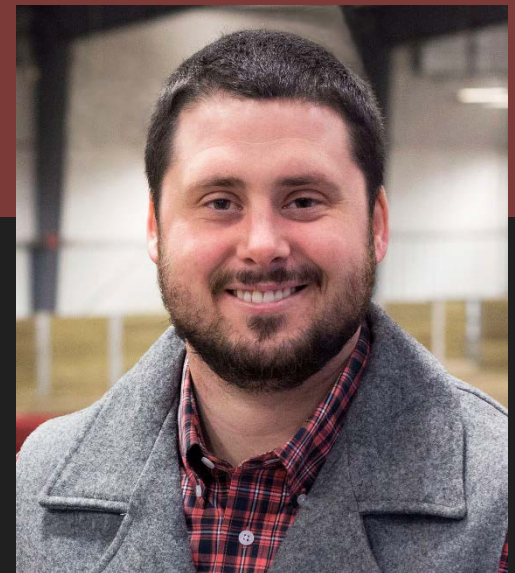


How to use LMR swine reports for risk management and to facilitate marketing

Lee Schulz, Associate Professor & Extension Economist
Iowa State University



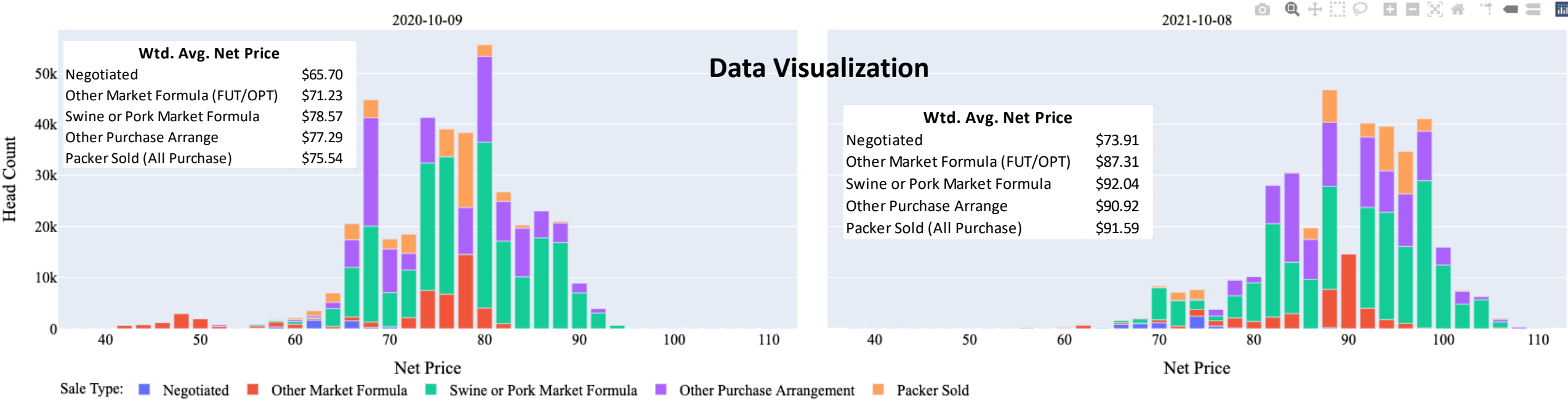
Hogs are NOT homogeneous, sold at different times/places, & nobody has full/perfect information

- LMR encourages competition in the marketplace by bringing transparency, breadth, and depth to market reporting
- Published prices can vary greatly. They are all correct.
 - Different purchase types generally represent different hogs and/or time periods
 - Variation often extreme during large supply or demand shocks
- The “law of large numbers” states that as a sample size grows, its mean gets closer to the average of the whole population

NATIONAL NET PRICE DISTRIBUTION

Barrows & Gilts

2021-10-08 2020-10-09



Sale Type	Head Count Sum		Wtd Avg Net Price	
	2020-10-09	2021-10-08	2020-10-09	2021-10-08
Negotiated	4,314	6,323	\$65.70	\$73.91
Other Market Formula	49,011	42,759	\$71.23	\$87.31
Swine or Pork Market Formula	205,085	194,074	\$78.57	\$92.04
Other Purchase Arrangement	105,128	100,565	\$77.29	\$90.92
Packer Sold	40,536	35,616	\$75.54	\$91.59

Relationship between cash prices and futures prices is critical for price risk management

Basis = Cash Price – Futures Price

- Being able to reliably forecast basis is key to successful hedging
- Moving averages of historical basis values provide a useful method for forecasting basis
- Moving averages (3-year, 5-year, etc.) appealing due to data availability and straightforwardness of implementation



Lean Hog Basis – Iowa/Minnesota

Ag Decision Maker
extension.iastate.edu/agdm

File B2-41

(Dollars/cwt.)

Market Period	Contract For Basis	3-year Average Futures	2014 Basis	2015 Basis	2016 Basis	2017 Basis	2018 Basis	2019 Basis	2020 Basis	3-year Average Basis	Standard Deviation
Jan 1-14	February	67.53	-7.16	-2.64	-5.30	-3.94	-4.73	-4.99	-6.80	-5.51	2.29
Jan 15-31	February	65.92	-6.36	1.26	-4.77	-0.17	-1.36	-1.36	-3.46	-2.06	2.33
Feb 1-14	February	62.09	-2.80	1.92	-1.39	-1.96	-2.30	0.54	1.66	-0.03	2.77
Feb 15-28	April	63.50	-9.36	-3.67	-5.34	4.16	-1.66	-1.70	-7.58	-3.64	3.67
Mar 1-14	April	63.71	-11.80	0.91	-5.55	1.32	-1.39	-4.57	-4.02	-3.33	2.99
Mar 15-31	April	65.60	-6.12	1.55	-5.47	0.03	0.49	-5.84	3.55	-0.60	5.10
Apr 1-14	April	58.66	-4.67	-2.24	-2.26	-0.35	2.30	-2.50	7.50	2.43	5.11
Apr 15-30	May	68.26	-9.46	-5.82	-8.70	-5.58	-6.32	-7.47	4.47	-3.11	6.56
May 1-14	May	72.56	-5.52	-3.80	-4.56	-3.35	-2.49	-3.95	3.21	-1.08	3.75
May 15-31	June	73.85	-9.86	-3.42	-5.07	-6.32	-7.17	-7.07	7.77	-2.16	7.22
Jun 1-14	June	69.32	-5.70	-3.16	-5.57	-5.11	-4.83	-2.04	4.62	-0.75	4.38
Jun 15-30	July	68.45	-11.62	0.07	-5.51	-1.68	-0.33	-2.09	1.10	-0.44	2.70

Where do cash prices come from?

- (LM_HG204) Iowa/Minnesota Daily Direct Prior Day Hog - Purchased Swine
 - Now included in LM_HG218

The critical basis for any hedger is the difference between the futures prices and his/her cash market. All that matters is whether the futures and his/her specific cash market move together.

Notes:

^{1/} Basis is calculated as Cash - Futures. A negative sign means that futures are greater than cash.

^{2/} Cash price is the producer sold total weighted average base price of all purchase types (negotiated, other market formula, swine/pork market formula, other purchase arrangement).

^{3/} 68% of the time basis is expected to fall within (+) or (-) one standard deviation of the average basis.

Market information needed to easily and quickly compare available marketing opportunities

- Develop expectations regarding current supply and demand conditions and where to begin price negotiations
- Published prices provide a means to evaluate alternative marketing agreements
 - “The best predictor of future performance is... past performance (or is the best we have)”

September 2021
21-PB 36

Hog Price and Volume Comparisons across Alternative Sale Types, Emphasis on COVID-19 Disruptions

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<https://www.card.iastate.edu/products/publications/synopsis/?p=1333>

What data allow for these comparisons?

- National Daily Direct Hog Prior Day Report - Slaughtered Swine (LM_HG201)
- National Daily Direct Hog Prior Day Report - Average Net Price Distribution (LM_HG215)

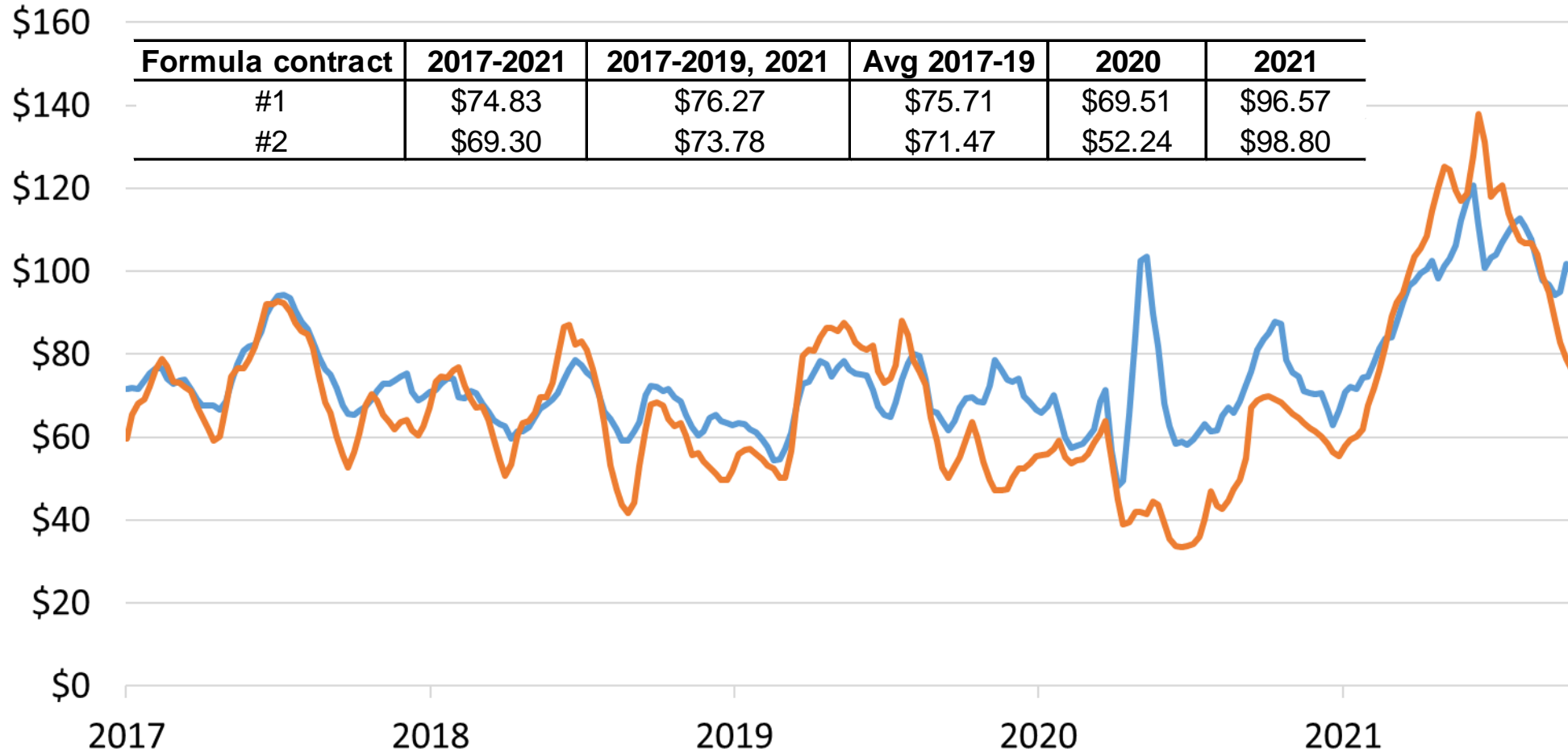
Sale Type	Year	Mean	Median	Min	Max	Coeff of Var
Negotiated	2010	75.04	76.14	59.72	89.67	10.59%
	2011	90.39	91.24	71.63	108.19	9.31%
	2012	85.07	84.57	65.98	104.53	8.40%
	2013	89.15	88.97	72.81	104.39	9.73%
	2014	104.19	107.01	75.58	134.07	16.26%
	2015	68.42	70.25	48.15	83.36	14.01%
	2016	61.99	63.58	41.71	83.95	18.19%
	2017	67.85	65.82	49.05	89.75	15.53%
	2018	61.32	61.47	37.92	85.38	18.21%
	2019	61.68	56.16	42.17	83.45	22.49%
2020	47.80	50.34	27.33	66.79	23.71%	
Other Market Formula	2010	70.53	70.96	57.98	78.63	8.05%
	2011	84.41	85.67	70.06	95.34	8.07%
	2012	87.58	88.07	78.07	99.12	6.84%
	2013	87.84	86.02	80.49	98.07	6.20%
	2014	96.94	98.22	81.55	114.04	9.15%
	2015	75.59	79.04	58.77	87.01	11.47%
	2016	68.22	68.25	51.35	82.14	12.92%
	2017	69.42	67.07	61.01	85.23	9.37%
	2018	67.70	68.78	55.22	81.87	11.22%
	2019	72.53	71.60	56.79	87.56	12.03%
2020	65.76	65.46	51.73	77.63	7.69%	
Swine or Pork Market Formula	2010	75.36	76.23	61.77	88.74	9.95%
	2011	90.12	90.80	72.29	107.88	8.54%
	2012	85.48	84.50	67.56	103.25	8.28%
	2013	89.48	88.59	74.05	104.32	9.74%
	2014	105.18	108.29	78.13	134.20	15.78%
	2015	70.41	72.47	53.07	83.27	12.63%
	2016	65.38	66.17	47.60	85.21	15.59%
	2017	71.74	69.39	54.58	93.08	14.23%
	2018	65.40	65.43	45.74	86.29	14.65%
	2019	67.80	64.00	51.99	84.93	15.83%
2020	60.95	60.50	45.08	79.24	15.06%	
Other Purchase Arrangement	2010	74.80	74.64	66.88	83.19	6.64%
	2011	88.75	89.18	74.03	101.46	6.88%
	2012	87.57	86.82	79.28	100.82	5.13%
	2013	90.63	89.19	80.73	102.21	7.12%
	2014	100.22	102.55	78.68	122.85	12.88%
	2015	73.72	74.80	61.48	81.62	7.31%
	2016	69.26	69.04	57.43	84.50	10.22%
	2017	73.94	71.40	61.66	92.85	11.24%
	2018	69.13	68.90	55.94	84.47	9.37%
	2019	71.37	69.07	58.76	84.20	9.75%
2020	67.78	66.82	56.65	81.06	8.10%	
Packer Sold	2010	76.95	76.87	65.20	88.21	9.06%
	2011	90.62	90.79	74.26	108.85	7.38%
	2012	85.99	85.18	71.03	102.41	7.52%
	2013	90.79	89.46	76.17	105.25	9.04%
	2014	106.98	110.39	79.89	134.75	15.13%
	2015	71.53	73.05	53.85	84.77	12.35%
	2016	66.26	67.41	46.66	86.73	16.18%
	2017	70.95	68.68	52.09	93.18	14.96%
	2018	64.35	64.53	41.81	86.58	16.22%
	2019	65.41	60.51	47.55	86.72	20.31%
2020	58.75	57.79	39.90	77.23	15.71%	

Swine or Pork Market Formula Comparisons

Example presented for illustration purposes only,
not meant to replicate any specific packer formula contract offerings

\$/cwt

— Formula contract #1 — Formula contract #2



Recent “shocks” have reinforced the importance of LMR market information

- Document and corroborate impacts
- Better understand disruptions and anticipate impacts

Received: 11 August 2020 | Revised: 29 September 2020 | Accepted: 16 November 2020

DOI: 10.1002/agr.21674

RESEARCH ARTICLE

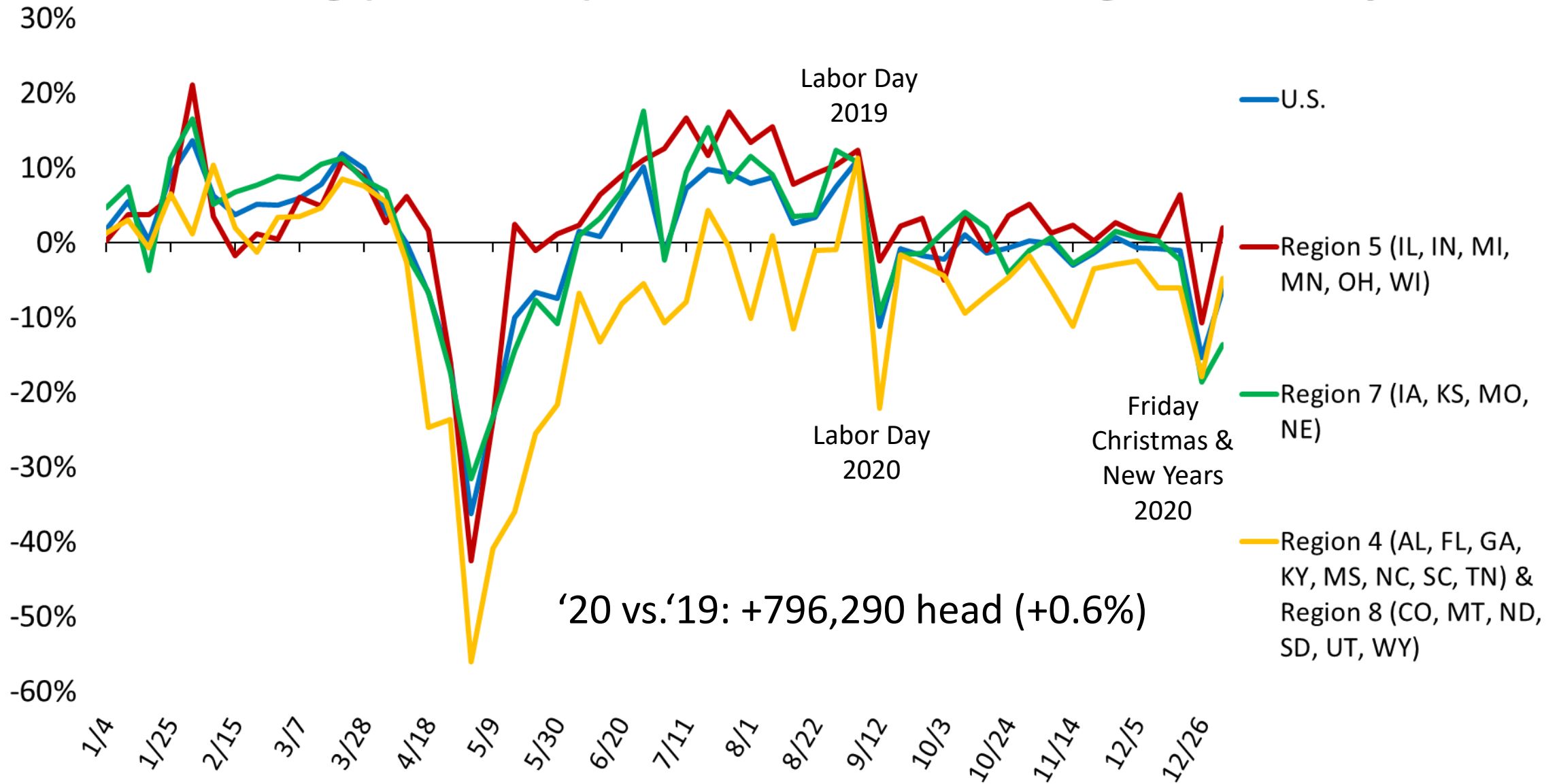
Agribusiness WILEY
An International Journal

A descriptive analysis of the COVID-19 impacts on U.S. pork, turkey, and egg markets

Dermot J. Hayes  | Lee L. Schulz  | Chad E. Hart  |
Keri L. Jacobs 

<https://onlinelibrary.wiley.com/doi/10.1002/agr.21674>

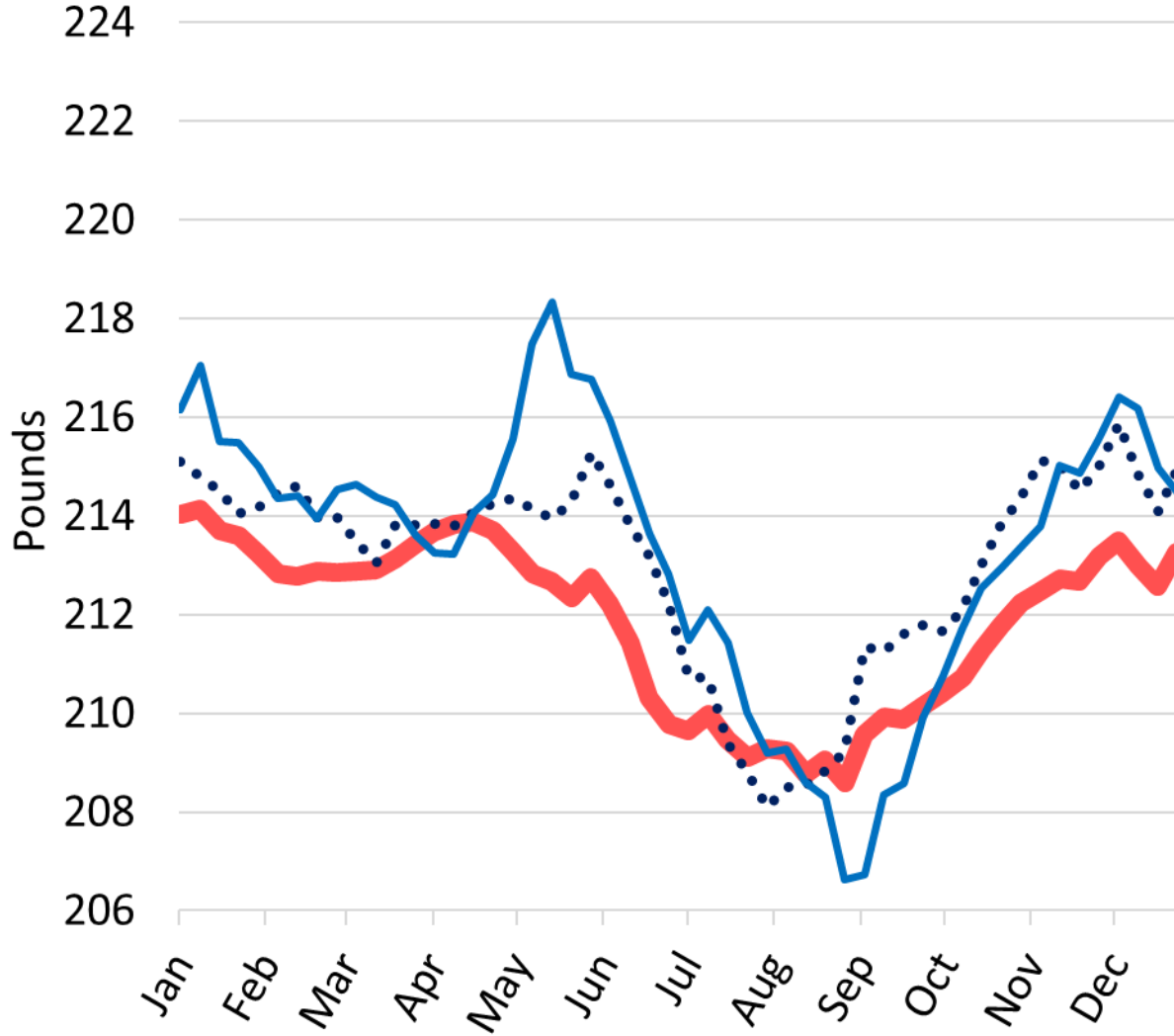
Pct. Chg ('20 vs. '19) in FI Barrow & Gilt Slaughter, Weekly



NATIONAL AVERAGE CARCASS WEIGHT

Weekly, Barrows & Gilts, Producer Owned

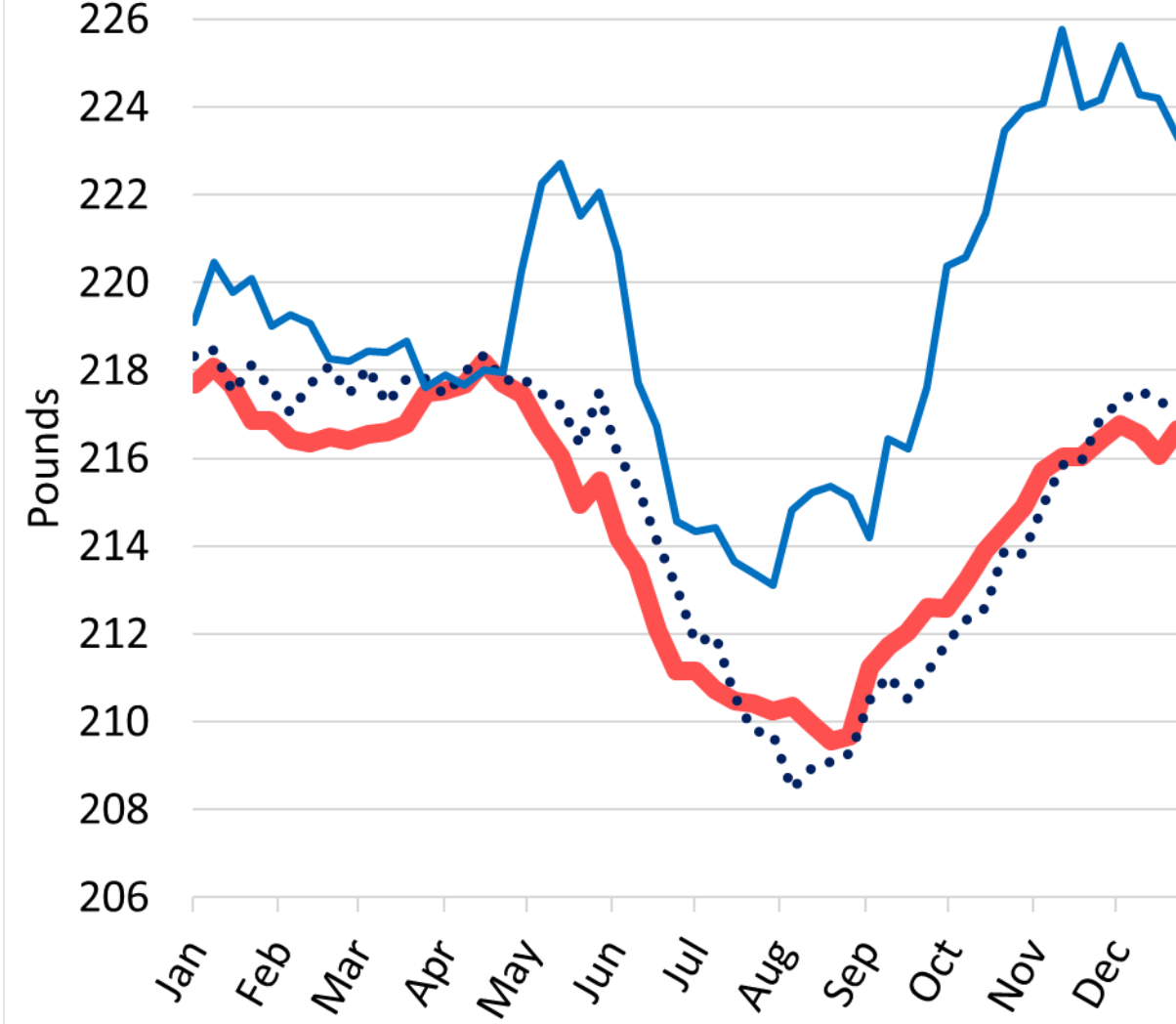
Avg 2014-18 2019 2020



NATIONAL AVERAGE CARCASS WEIGHT

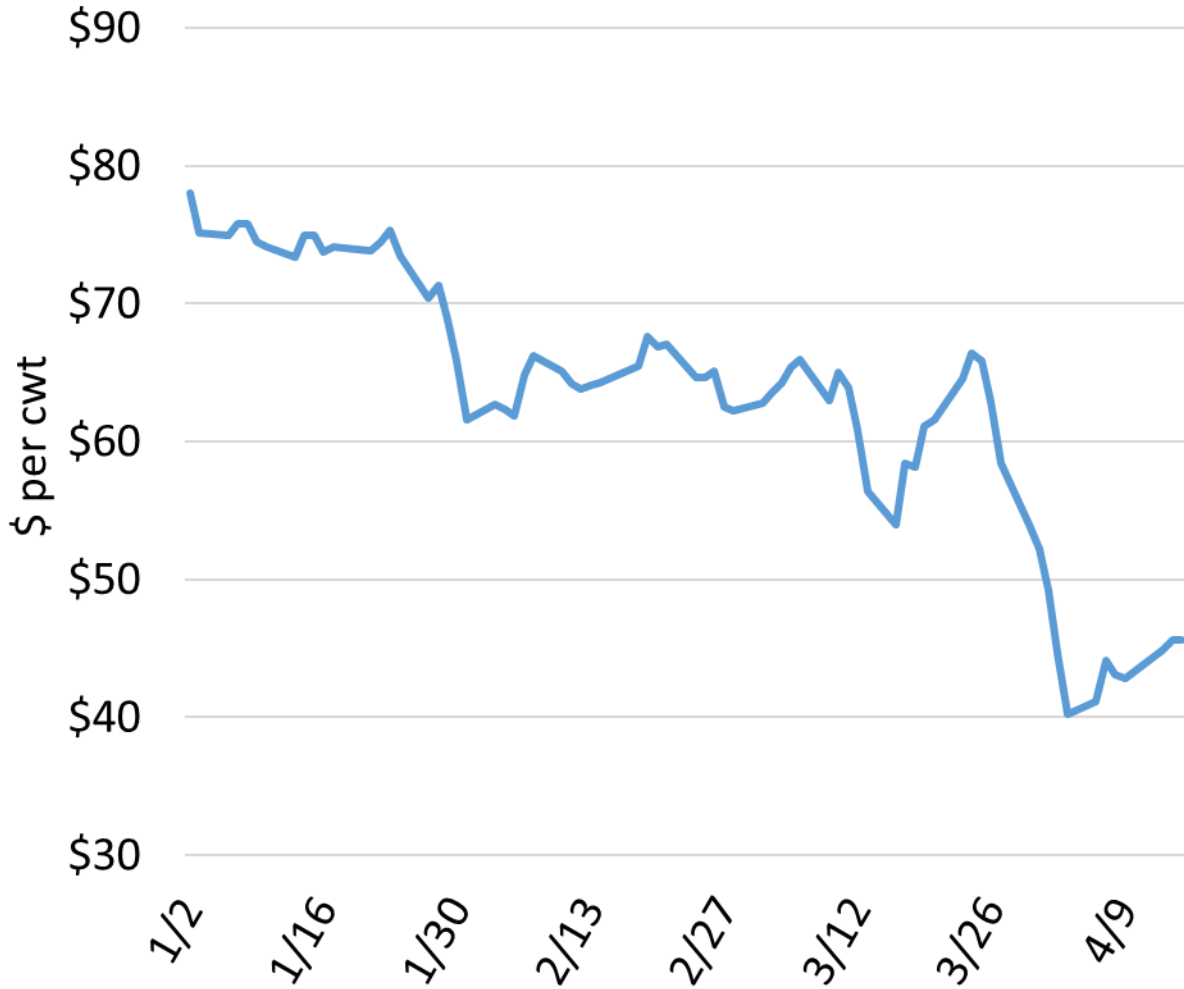
Weekly, Barrows & Gilts, Packer Owned

Avg 2014-18 2019 2020



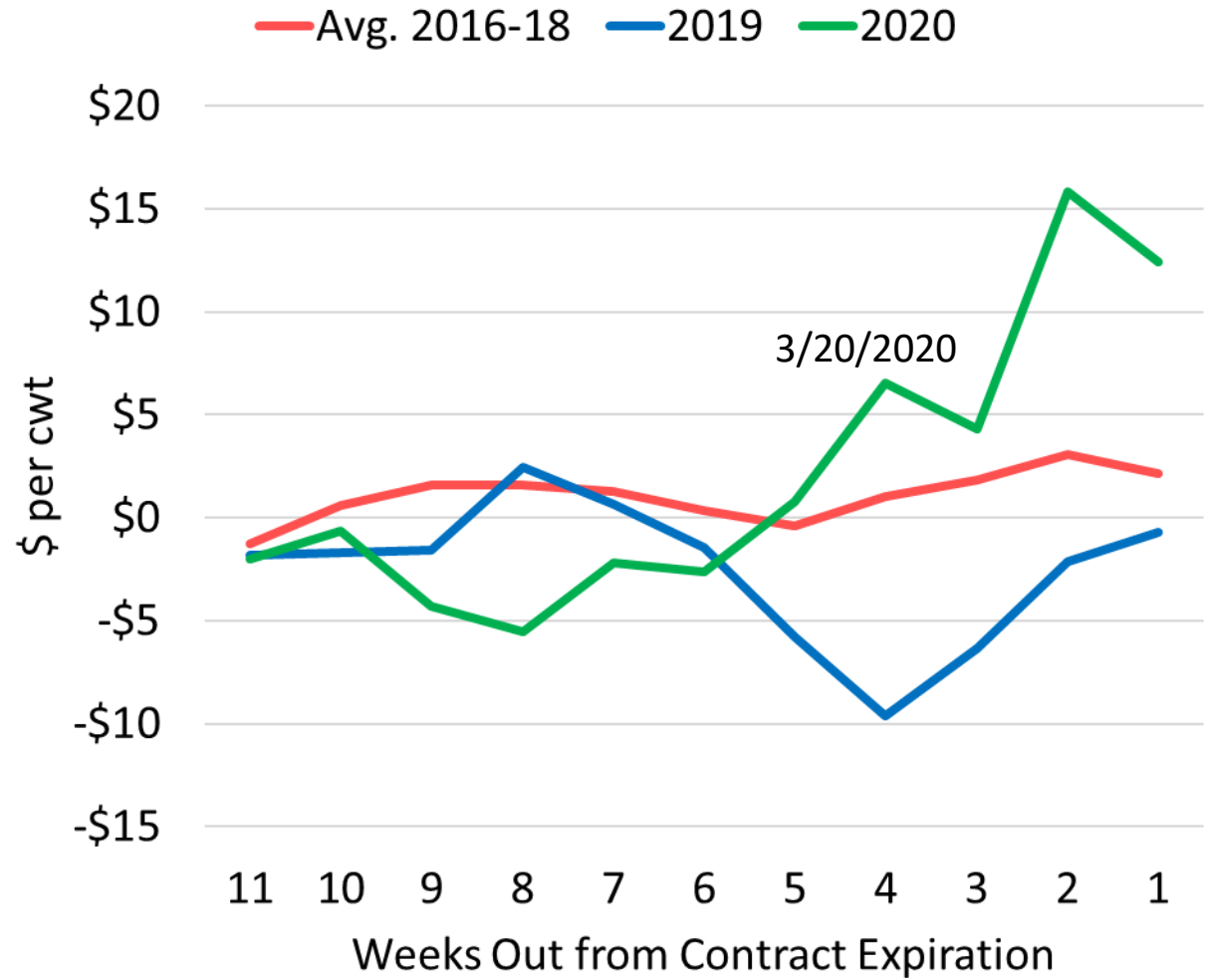
Daily Lean Hog Futures Prices

April 2020 Contract



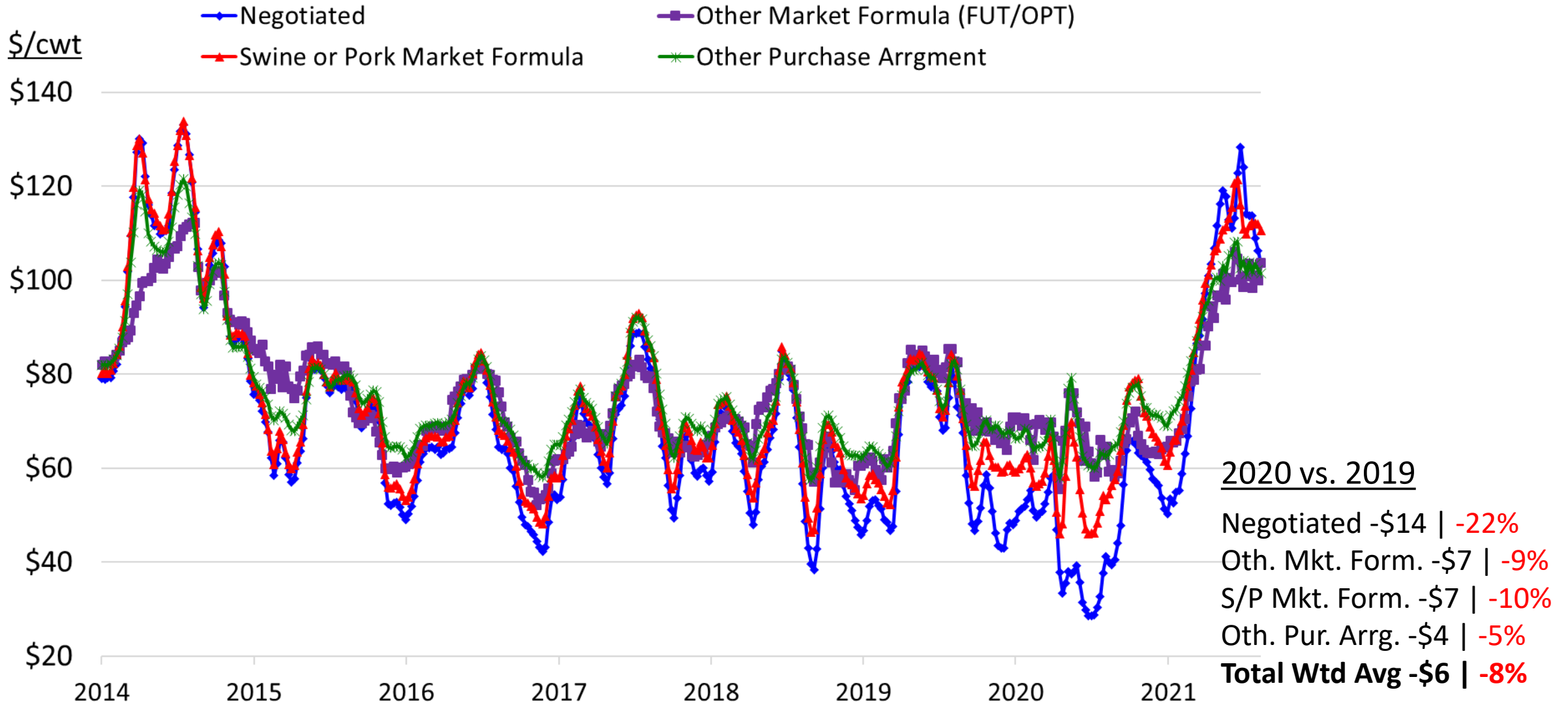
Weekly National Lean Hog Basis (Cash - Futures)

April Contract, Total Wtd Avg All Purchase Types



NATIONAL NET CARCASS PRICES

Weekly, Barrows & Gilts, Producer Sold



NATIONAL NET PRICE DISTRIBUTION

June 22, 2020, Barrows & Gilts

Head Count

25,000

20,000

15,000

10,000

5,000

0

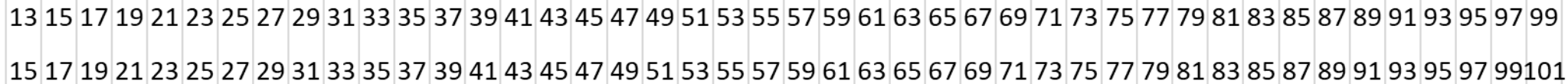
Price

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

The Impact of COVID-19 on Iowa's Corn, Soybean, Ethanol, Pork, and Beef Sectors

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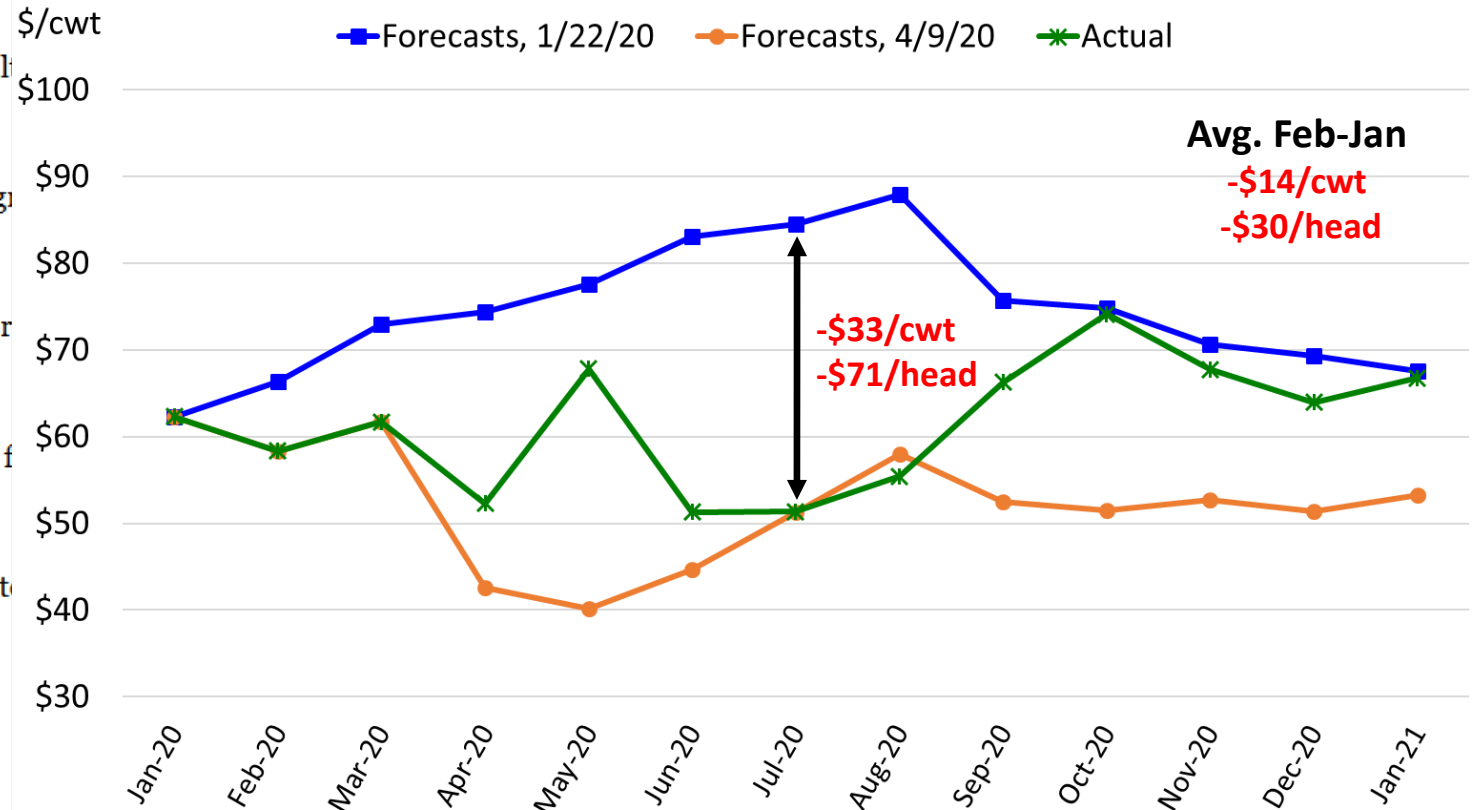
<https://www.card.iastate.edu/products/policy-briefs/display/?n=1301>

Where do cash prices come from?

- (LM_HG204) Iowa/Minnesota Daily Direct Prior Day Hog - Purchased Swine
 - Now included in LM_HG218

Basis Adj. Futures Price Forecasts and Actual Prices

IA-MN, Producer Sold B&G, All Purchase Types



Avg. Feb-Jan
-\$14/cwt
-\$30/head

-\$33/cwt
-\$71/head

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

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

- ✓ Decision-oriented agricultural business “toolbox” designed for farmers, lenders, farm managers, agriculture instructors, and others
- ✓ Monthly livestock market outlook column provides information, analysis, and economic perspective on issues impacting cattle producers

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Estimated Livestock Returns

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

- ✓ Monthly barometer of swine production and cattle feeding costs and returns

ISU Livestock Crush Margins

Iowa State University
Extension and Outreach

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

- ✓ Weekly hog production and cattle feeding “crush margins” and tracked changes serving as an indicator of risk management opportunities