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Push-n-pull supporting hog prices

By Lee Schulz, extension livestock economist, 515-294-3356, lschulz@iastate.edu

Two types of inflation can drive the overall price level higher. Cost-push inflation occurs when production costs rise or supplies fall. Either will boost prices as long as demand remains the same. “Too many dollars chasing too few goods” drives demand-pull inflation.

Demand-pull inflation tends to benefit farmers, whereas cost-push inflation tends to hurt them. Some sectors, automobile manufacturers for example, can more easily pass added costs on to consumers. Demand elasticities make doing so in agriculture more difficult. Fortunately, cost-push inflation in commodities is usually temporary.

Cost-push inflation would have left many pork producers in the red last year without government payments. Many still were. Cash receipts were down over 4% compared to 2019. Hog prices averaged more than 8% lower for the year.

Producers paid more, earned less

Pork producers use numerous inputs and services. The all production items index for agriculture compiled by the United States Department of Agriculture's National Agricultural Statistics Service was down 0.7% in 2020 compared to 2019. But that doesn't tell the whole story for pork producers.

The overall feed index rose 0.7%, but that was a combination of a 3.8% slump in feed grains, 1.9% dip in supplements, 2.6% rise in complete feeds and 4.0% higher concentrates. Hogs consume a lot of complete feeds and concentrates. Plus COVID-19 related disruptions delayed marketings. That upped per head feed costs. More importantly, it rapidly eroded profits as the cost for the next pound of gain climbs at an increasing rate as hogs reach, and exceed, optimal market weight.

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Handbook updates

For subscribers of the handbook, the following updates are included.

Historic Iowa Farm Custom Rate Survey Averages – A3-12 (4 pages)

Livestock Enterprise Budgets – B1-21 (20 pages)

Livestock Risk Insurance Plans for Cattle Producers – B1-50 (5 pages)

Farmland Value Survey, REALTORS® Land Institute – C2-75 (2 pages)

Please add these files to your handbook and remove the out-of-date material.

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The labor wage rate index was up 1.5% in 2020. Gains for farm workers were higher. According to USDA's Farm Labor survey, the national hired labor wage rate averaged \$15.49 per hour in 2020, up 3.9% from 2019. Farm managers made \$25.57 per hour, a 3.7% hike from 2019. Nationally, animal workers made \$14.35 per hour, up 4.4% from 2019. In the Illinois, Indiana, and Ohio region, animal workers averaged \$14.57 per hour. In Iowa and Missouri, animal workers made \$15.20 per hour.

Super demand-pull bolsters earnings

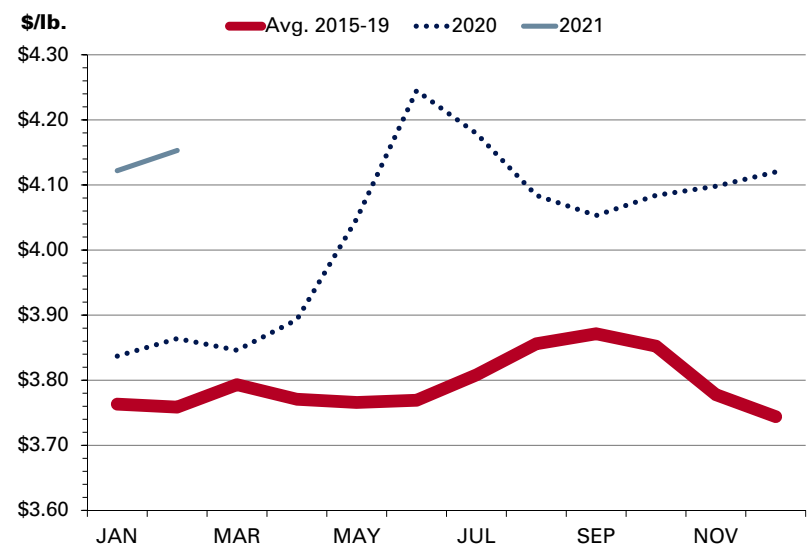
Demand-pull and cost-push factors have combined to lift hog prices. By late March 2021, many cash prices topped \$90 per cwt. Futures prices pushed through the century mark for the first time since 2014. Hog cash receipts are forecasted to be the highest since 2014.

Retail pork prices rose 4.8% in 2020 based on USDA Economic Research Service calculations using data from Bureau of Labor Statistics and USDA's Agricultural Marketing Service. The February 2021 retail pork price was \$4.15 per pound, up 7.5% from February 2020 and up 0.8% from January 2021 (Figure 1). This is the fifth highest price in the data series. June 2020 holds the record price at \$4.25 per pound.

Measuring demand is tricky. When prices rise but volume drops, the higher price may be simply a response to lower supply. But rising prices on higher supply are a sure sign of rising demand.

The 2020 retail pork price index value advanced from 2019, as higher prices offset a very slight dip in annual per capita consumption. Last year's per capita pork consumption was the second highest in almost two decades at 51.9 pounds per person (retail weight), and prices were the highest ever. The January 2021 demand index was higher than one year earlier. The demand outlook for 2021 is optimistic, with retail pork demand remaining strong and expectations the food service rebound will accelerate.

Figure 1. Monthly Retail Pork Price



Data Source: USDA-ERS, BLS, USDA-AMS

Surging first half 2020 exports to China pushed 2020 US pork export volume record high, shattering the 2019 record. Pork export value also ran record high. China was not the only success story in 2020. Maintaining record exports to diverse world pork markets would make 2021 a big win.

Hog inventories slip

The Quarterly Hogs and Pigs report released by USDA's National Agricultural Statistics Service on March 25, 2021, shows smaller inventories of market hogs and breeding animals (Table 1). So, despite stronger hog prices, are producers really this cautious about expanding production? Only time will tell.

Biology prevents hog producers from rapidly responding to price changes, either higher or lower. Pork consumed today came from decisions producers made roughly 10 months ago during the throes of the coronavirus pandemic last spring. Back then, lean hog futures pointed to spring 2021 hog prices in the mid-\$60s. Plus, cash prices hit 17-year lows.

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Table 1. USDA Quarterly Hogs and Pigs Report Summary

	United States			Iowa		
	2020	2021	2021 as % of 2020	2020	2021	2021 as % of 2020
March 1 inventory *						
All hogs and pigs	76,179	74,773	98.2	24,400	23,800	97.5
Kept for breeding	6,375	6,215	97.5	980	940	95.9
Market	69,804	68,558	98.2	23,420	22,860	97.6
Under 50 pounds	21,571	21,288	98.7	5,830	5,640	96.7
50-119 pounds	19,353	19,118	98.8	7,460	7,210	96.6
120-179 pounds	15,086	14,705	97.5	5,500	5,500	100.0
180 pounds and over	13,793	13,446	97.5	4,630	4,510	97.4
Sows farrowing **						
December-February ¹	3,068	3,041	99.1	500	530	106.0
March-May ²	3,149	3,070	97.5	500	510	102.0
June-August ²	3,260	3,124	95.8	560	510	91.1
December-November pigs per litter	11.00	10.94	99.5	11.25	11.30	100.4
December-February pig crop*	33,745	33,270	98.6	5,625	5,989	106.5

Full report: <https://downloads.usda.library.cornell.edu/usda-esmis/files/rj430453j/7p88db205/mw22w1890/hgpg0321.pdf>

*1,000 head

**1,000 litters

¹December preceding year

²Intentions for 2021

Trade chatter indicates that the industry is dealing with more PRRS and PEDV this year compared to last year, including a virulent strain of PRRS. The 10.94 average pigs saved per litter in December 2020-February 2021 compares to 11.00 a year earlier. This was the first December-February year-over-year decline since 2013-2014, but continues the declines reported for the previous two quarters. Productivity improvements could be on the horizon. The December litter rate was down 1.4% year-over-year and January was down 0.5%, but February 2021's 11.11 pigs saved per litter was 0.4% above February 2020 levels.

Risk vs. reward drives expansion

The recent price and production environment of more variability in inputs and outputs may have altered the risk-reward relationship as some producers consider expansion. If one assumes most producers are averse to risk and uncertainty, for a given level of expected profit, they would logically invest less.

Farrowing intentions reflect caution on expansion. For the March-May 2021 quarter, producers indicated 2.5% lower year-over-year farrowing intentions. This is a decline of 53,000 sows or 1.7% from the first intention estimate made in December. First intentions for June-August 2021 indicate that producers intend to farrow 4.2% fewer sows and gilts than in the same quarter last year. This is over three percentage points smaller, or almost 110,000 sows fewer than the average of pre-report expectations. Bear in mind that, as the name implies, these are intentions or educated guesses. June-August farrowing numbers have been extremely large, including in 2020. So comparing to a large number last year will alter interpretation. Finally, only one time since 2010 has the final June-August sows farrowing number been lower than the first intention estimate. That was in 2013. On average over that period the final June-August sows farrowing number has been over 60,000 sows or 2.1% more than the first intentions estimate.

Push-n-pull supporting hog prices, continued from page 4

Production capacity is one important factor that will help dictate the trajectory of future hog inventories. Market hog inventories reached all-time highs on September 1, 2019. At that time the breeding herd was the largest in 20 years. Today US farms have over 3.5 million fewer market hogs and 216,000 fewer breeding animals compared to September 2019.

Demand will ultimately dictate how much and how rapidly producers adjust inventories. However, contracts – both production and marketing – and high fixed costs of operating facilities are just two of multiple factors that will help drive short-to medium-term inventories.

Commercial slaughter and price forecasts

Table 2 contains the Iowa State University price forecasts for the next four quarters. Prices are for the Iowa-Minnesota producer sold weighted average carcass base price for all purchase types. Basis forecasts along with lean hog futures prices are used to make cash price projections. The table also contains the projected year over year changes in commercial hog slaughter.

Table 2. Commercial hog slaughter projections and price forecasts, 2021-2022

	Year-over-Year Change In Commercial Hog Slaughter	ISU Model Price Forecast, IA-MN Base Price, All Purchase Types	CME Futures (3/25/21) Adjusted for IA-MN Producer Sold Weighted Average Carcass Base Price for All Purchase Types Historical Basis
	(percent)	(\$/cwt.)	(\$/cwt.)
Apr-Jun 2021	6.08	98-102	100.26
Jul-Sep 2021	-2.92	90-94	92.94
Oct-Dec 2021	0.16	74-78	77.04
Jan-Mar 2022	-2.09	73-77	75.92



What is the difference between weather and climate?

By Don Hofstrand, retired extension value-added agriculture specialist

Reviewed by Dr. Eugene Takle, retired professor emeritus Iowa State University

This article is the second in a series focused on the causes and consequences of a warming planet

People often ask, "What is the difference between climate and weather?" Although climate and weather are closely related, there are some important differences. The simple explanation is **weather** is what you get today and **climate** is what you get over the long-term.

An analogy may help to explain. Most of us have heard of the famous baseball player Babe Ruth. He hit a high percentage of home runs over his career. But when he stepped up to the batter's box in a game, you didn't know if he would hit a home run or strike out (which he was also famous for). What happens at that individual "at bat" is weather. The statistics of home runs and strikeouts over his career are climate.

If you don't remember Babe Ruth, here is another example. Imagine a woman walking her dog on the beach. As they pass by, you can see their tracks in the sand. The woman's tracks are in a straight line. But the dog's tracks may show an erratic pattern. Depending on the length of the dog's leash, the dog's tracks show a pattern of darting back and forth over the woman's track as it investigates various spots on the beach. The dog's tracks are weather and the woman's tracks are climate.

How can the planet be warming considering the cold spells we sometimes experience in the US? The US only makes up 2% of the Earth's surface and only 7% of the Earth's land area. The temperature over the rest of the world can easily more than offset the temperature in the US. During a US cold snap, temperatures in much of the rest of the Earth may be above average.



The climate can be tipped in a different direction, often by relatively small external influences. Returning to Babe Ruth, a bit of arthritis in an elbow or a small change in eyesight could greatly impact his batting average.

You may ask, "If scientists have difficulty predicting tomorrow's weather, how can they predict climate far in the future?" Weather is short-term and chaotic, and is determined by current atmospheric systems that may soon be replaced by other systems, so it is difficult to predict weather more than a few days in advance.

Conversely, climate is the average weather over a long period of time, typically 30 years or more. It is determined by large-scale forces like the level of greenhouse gases in the atmosphere, so it is easier to predict long-term changes in climate than short-term changes in weather.

A listing of USDA and university websites focused on weather and climate can be found on the [Ag Decision Maker Outlook page](http://www.extension.iastate.edu/agdm/outlook.html#weather), www.extension.iastate.edu/agdm/outlook.html#weather.



The projections are shifting fast

By Chad Hart, extension economist, 515-294-9911, chart@iastate.edu

In my previous article for the [Ag Decision Maker newsletter](http://www.extension.iastate.edu/agdm/articles/hart/HartMar21.html), www.extension.iastate.edu/agdm/articles/hart/HartMar21.html, we worked through the United States Department of Agriculture's preliminary outlook for the 2021 crops. Since then, USDA has released four major reports which have shaken up that outlook. With the March and April World Ag Supply and Demand Estimates (WASDE) reports, USDA has provided the markets a sense of the shifting nature of crop usage going into the 2021 growing season. With the March releases of the Grain Stocks and Prospective Plantings reports, USDA revealed the tightening of crop stocks as we go into planting and the differences between farmers' planting intentions and USDA's early projections on crop acreage. To summarize how these reports have adjusted the 2021 outlook, I have combined the latest crop usage estimates for the 2020 crops from the April WASDE report, the new estimates for 2021 plantings from the Prospective Plantings report, and the yield and 2021 crop usage estimates from the Ag Outlook Forum to create tentative balance sheets for corn and soybeans. Take these balance sheets with a healthy dose of salt (more than one grain, possibly an entire salt block) as USDA will likely make several significant adjustments to the 2021 crop usage estimates, starting in the May WASDE report (the first WASDE report that will have 2021 crop estimates). But these balance sheets do provide a good starting point for discussing the opportunities and challenges for the upcoming crops.

Let's start with corn. Corn usage has remained robust, even as corn prices have moved higher. The March stocks report verified that and the April WASDE report reflected that as well. Looking at the annual numbers, USDA boosted 2020 feed and residual usage by 50 million bushels, ethanol usage by 25 million, and exports by 75 million. The combination lowers 2020-21 ending stocks to 1.35 billion bushels, 150 million bushels below previous estimates. So corn supplies going into 2021-22 are smaller. And the Prospective Plantings report showed

fewer corn acres than both USDA and the trade expected, further tightening 2021-22 corn supplies. USDA's initial estimate for 2021 corn plantings was 92 million acres. The Prospective Plantings survey found farmers intend to plant 91.1 million acres of corn. Keeping the ratio of planting to harvested acres and the yield from the Ag Outlook Forum and combining that with the new estimates of corn area leads to an adjusted 2021 production estimate of 15 billion bushels, down 140 million from the earlier projection. Add that to the lower corn stocks and total corn supplies for the 2021 marketing year are projected to be 290 million smaller than the Ag Outlook Forum estimates.

If USDA were to stick with their Ag Outlook Forum 2021 corn usage estimates, then feed and residual usage is projected to be 150 million bushels higher, corn usage for ethanol would rise by 225 million bushels, but exports would fall by 25 million. Total corn usage would exceed production by roughly 120 million bushels, implying another year-over-year drop in ending stocks. And where USDA had first thought the 2021-22 season average price would be lower than the 2020-21 price, these shifts would likely lead to continued higher prices for the upcoming crop year.

Table 1. Corn Supply and Use

(Sources: USDA-WAOB, USDA-NASS, calculations)

Marketing Year (2020 = 9/1/20 to 8/31/21)		2019	2020	2021
Area Planted	(million acres)	89.7	90.8	91.1
Yield	(bushels/acre)	167.5	172	179.5
Production	(million bushels)	13,620	14,182	15,009
Beginning Stocks	(million bushels)	2,221	1,919	1,352
Imports	(million bushels)	42	25	25
Total Supply	(million bushels)	15,883	16,127	16,386
Feed & Residual	(million bushels)	5,897	5,700	5,850
Ethanol	(million bushels)	4,857	4,975	5,200
Food, Seed, & Other	(million bushels)	1,430	1,425	1,425
Exports	(million bushels)	1,778	2,675	2,650
Total Use	(million bushels)	13,963	14,775	15,125
Ending Stocks	(million bushels)	1,919	1,352	1,261
Season-Average Price	(\$/bushels)	3.56	4.30	?.??

The projections are shifting fast, continued from page 6

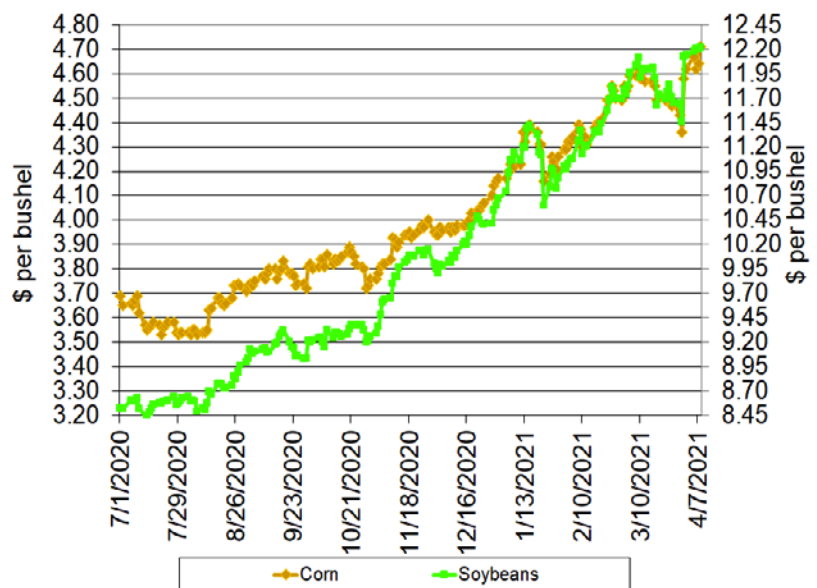
For soybeans, the usage adjustments are smaller than for corn, but the shift in projected acreage is significant. Looking at the 2020 crop, domestic crush of soybeans was lowered by 10 million bushels and residual usage was reduced by 20 million. However, soybean exports were increased by 30 million bushels to completely offset these changes. So we are still entering into the 2021-22 marketing year with a projected stock of 120 million bushels of soybeans.

Soybean planting intentions came in at 87.6 million acres, well below USDA's initial estimate and trade expectations. Given the new acreage estimate, projected soybean production fell by roughly 140 million bushels, which has really tightened up an already tight market. At the Ag Outlook Forum, USDA outlined 2021 domestic crush demand at 2.21 billion bushels, with exports taking 2.2 billion bushels. If USDA held to those usage estimates now, 2021-22 ending stocks would plummet to 24 million bushels, well below historical levels. So I expect some major adjustments to both the 2021 soybean usage forecasts and the 2021-22 season-average price estimate.

The string of USDA reports provided a boost to corn and soybean prices. Prior to the end of March, traders had been preparing for sizable acreage increases for both crops and the larger projected supplies that come with that acreage. Once the acreage projections showed smaller gains than expected, both markets enjoyed a strong jump in futures prices. Figure 1 shows 2021-22 projected prices based on the futures markets. Through the month of March, those price projections had worked their way lower. Now, with these latest reports in hand, the bulls in the marketplace have found renewed reason for optimism. Both crops are sitting at the highest projected prices for the year thus far, with futures pointing to \$4.70 per bushel for corn and \$12.20 per bushel for soybeans.

Marketing Year (2020 = 9/1/20 to 8/31/21)		2019	2020	2021
Area Planted	(million acres)	76.1	83.1	87.6
Yield	(bushels/acre)	47.4	50.2	50.8
Production	(million bushels)	3,552	4,135	4,404
Beginning Stocks	(million bushels)	909	525	120
Imports	(million bushels)	15	35	35
Total Supply	(million bushels)	4,476	4,695	4,559
Crush	(million bushels)	2,165	2,190	2,210
Seed & Residual	(million bushels)	105	106	124
Exports	(million bushels)	1,682	2,280	2,200
Total Use	(million bushels)	3,952	4,575	4,534
Ending Stocks	(million bushels)	525	120	24
Season-Average Price	(\$/bushels)	8.57	11.25	??.??

Figure 1. 2021-22 projected season-average prices (derived from futures)



Updates, continued from page 1

Internet Updates

The following [Decision Tools](#) have been updated on www.extension.iastate.edu/agdm:

- Historic Iowa Farm Custom Rate Survey Averages – A3-12 (Decision Tool)
- Livestock Enterprise Budgets – B1-21 (11 Decision Tools)
- Comparison of Customer, Competition or Cost Based Pricing – C1-55 (Decision Tool)
- Cash Flow Budget (short form - 12 periods) – C3-14 (Decision Tool)
- Net Worth Statement (short form) – C3-19 (Decision Tool)

Current Profitability

The following [profitability tools](#) have been updated on www.extension.iastate.edu/agdm/info/outlook.html:

- Corn Profitability – A1-85
- Soybean Profitability – A1-86
- Iowa Cash Corn and Soybean Prices – A2-11
- Season Average Price Calculator – A2-15
- Ethanol Profitability – D1-10
- Biodiesel Profitability – D1-15

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