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Talk of hog supply contraction is premature

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

The United States Department of Agriculture’s December quarterly Hogs and Pigs report indicates the US hog industry was smaller and less productive in 2020 than in 2019. Whether the production slowdown continues remains to be seen, have you ever heard the saying “two data points do not a trend make”?

From producer surveys, USDA National Agricultural Statistics Service tallied the December 1, 2020 US breeding herd inventory 3.0% lower than a year earlier (Table 1). That was the third year-to-year quarterly contraction in 2020. Before that, March 1, 2016 was the last decline compared to a year earlier, and it was minute. The most recent sustained contraction occurred between June 2008 and December 2010. While smaller, the US breeding herd at 6.276 million head remains the third largest December 1 breeding herd in 22 years.

Many factors may be pushing some producers to tap the brakes. Other producers may be setting

the cruise. The list of drivers is long. Efforts to control COVID-19 fuel market volatility. Macroeconomic uncertainties persist in the US and global economies. Feed costs are up. Currency exchange rates and trade policy are in flux. These forces might reverse breeding herd growth since 2011, but potential also exists for stability in 2021 and for long-run growth.

Growth in litter rate slows

Breeding herd productivity, as measured by pigs saved per litter, dipped in the fall quarter. While causal factors are difficult to precisely pinpoint, lower litter rates could have come from higher disease incidence, labor challenges, and the makeup of the breeding herd. Litter size is usually smallest in the first litter, rises to a maximum between the third and fifth litter, and then remains constant or declines slightly with older parities.

Despite factors working against productivity, the 2020 marketing year (December 2019-November

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Handbook updates

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

Estimated Costs of Crop Production in Iowa – 2021 – A1-20 (13 pages)

Supplemental Coverage Option (SCO) and Enhanced Coverage Option (ECO) – A1-44 (2 pages)

2020 Iowa State University Farmland Value Survey – C2-70 (8 pages)

Please add these files to your handbook and remove the out-of-date material.

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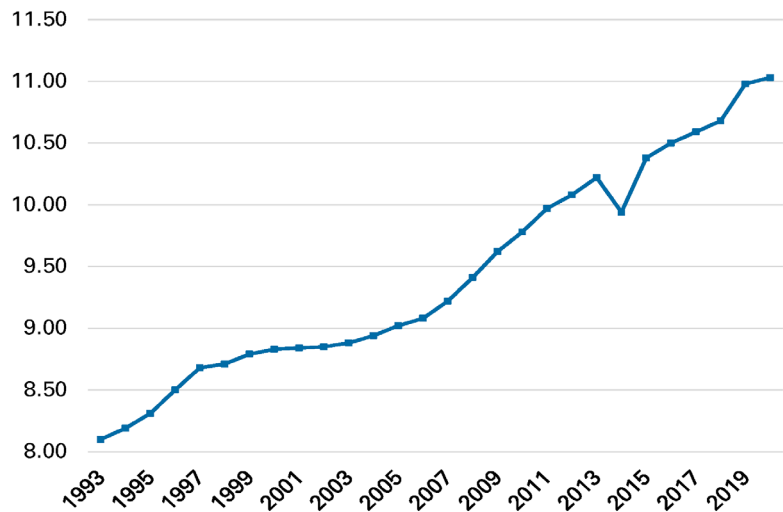
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2020) litter rate was still record high, at 11.03 pigs (Figure 1). This was up 0.5% from 2019 and the first time the annual litter rate eclipsed 11.0 pigs nationally. This, however, was the smallest annual increase since 2003.

An obvious question is, "will litter rates shrink?" Given continually improving genetics, technology, and management practices, it is probably safe to say that litter rates have not topped out.

Changes in litter rates vary among states. Culling under-producing females could explain, in part, the less than expected decrease in productivity or increase in productivity in some states. Producers idled some older operations that had health challenges before COVID-19. They may or may not be repopulated. Some producers permanently closed other sow farms to

Figure 1. US pigs saved per litter, marketing year December-November



Data Source: USDA NASS

Table 1. USDA Quarterly Hogs and Pigs Report Summary

	United States			Iowa		
	2019	2020	2020 as % of 2019	2019	2020	2020 as % of '19
December 1 inventory *						
All hogs and pigs	78,228	77,502	99.1	24,900	24,800	99.6
Kept for breeding	6,471	6,276	97.0	1,010	980	97.0
Market	71,757	71,226	99.3	23,890	23,820	99.7
Under 50 pounds	22,048	21,739	98.6	5,840	5,800	99.3
50-119 pounds	20,636	20,260	98.2	7,720	7,620	98.7
120-179 pounds	15,256	15,246	99.9	5,750	5,790	100.7
180 pounds and over	13,816	13,980	101.2	4,580	4,610	100.7
Sows farrowing **						
June-August	3,274	3,260	99.6	550	560	101.8
September-November	3,197	3,164	99.0	510	560	109.8
December-February ¹	3,068	3,118	101.6	500	530	106.0
March-May ²	3,149	3,123	99.2	500	530	106.0
September-November pigs per litter	11.09	11.05	99.6	11.35	11.30	99.6
September-November pig crop*	35,459	34,973	98.6	5,789	6,328	109.3

Full report: <https://downloads.usda.library.cornell.edu/usda-esmis/files/rj430453j/7d279j76f/g445d5751/hgpg1220.pdf>

*1,000 head

**1,000 litters

¹December preceding year, intentions for 2020/21

²Intentions for 2020

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create efficiencies and maximize productivity within a production system. Some producers first stocked new sow units, capturing high health status on superior genetics in state-of-the-art facilities. Higher state-level litter rates will translate into higher national averages.

Canadian litter rates show room for growth in US rates. The 2015-2020 US average litter rate was 10.69 pigs. Canada averaged 11.58 pigs per litter. Part of the difference may be due to more favorable climatic conditions and the ability to space operations at greater distances than in the United States. Labor markets, work rules and management practices may contribute. The gap in productivity has been decreasing as genetics, technology and management are generally transferrable throughout North America.

Top managers excel in tough times

The sampling universe for USDA hog reports is hog owners and contractors with capacity to raise breeding or market hogs. USDA surveys large producers more heavily than small operations, but survey procedures ensure that all producers, regardless of size, have a chance to be included in the survey.

Until December 2017, USDA reported pigs per litter by size of operation. Unfortunately, this data series was discontinued. Those data showed the positive influence of large operations on the US litter rate. For example, in 2017 the average pigs saved per litter on all operations was 10.59. The average on operations with 5,000 or more head was 10.65.

Industry benchmark data show opportunities for further gains in productivity. PigCHAMP is one of many excellent swine production record software programs. [PigCHAMP's website](http://www.pigchamp.com), www.pigchamp.com, provides publicly accessible benchmark summaries.

Between 2015 and the third quarter of 2020, the mean litter rate in PigCHAMP data was 11.25 pigs, compared to 10.69 in USDA's Hogs and Pigs Reports for the same period. The median in the PigCHAMP data was 11.31. The upper 10th percentile turned out 12.17 pigs per litter. The bottom 10th percentile averaged 10.33 pigs per litter over the almost six-year period. That 1.84 pig spread says room exists for improvement.

Looking only at 2020, the median and mean litter rates in PigCHAMP data slowed compared to 2019. Interestingly, the upper 10th percentile surged year over year, while the lower 10th percentile fell. In difficult times, the most productive got more productive.

Litter rates will continue to be a key factor driving US pork production in 2021 and beyond. Biological and economic factors will help dictate productivity levels. As 2020 illustrated, it is important to understand that optimal financial efficiency can mean a slowdown in productivity.

Farrowings give mixed signals on slaughter prospects

September through November 2020 sows farrowing were 3.164 million head, 1.0% lower than a year ago. Producers saved 0.4% fewer pigs per litter than in 2019, trimming the quarterly pig crop 1.4%. That suggests lower slaughter-ready supplies in 2021 – but don't count on that happening.

December's second farrowing intentions for the December 2020-February 2021 quarter were 1.6% above 2019 and up slightly from what producers told USDA back in September. Follow through could boost slaughter.

If producers do follow through on these intentions, the ratio of December 2020-February 2021 sows farrowing to the December 1 breeding herd will be 50.8%, which would be the highest ratio ever for the quarter. This could indicate that the breeding herd estimate is too low, or the sows farrowing expectation too high. Historically actual sows farrowing have been higher than earlier intention estimates. Another explanation is the high ratio could be more a function of the revisions that USDA made to December 2019-February 2020 estimates in order to reflect the number of hogs that came to slaughter during summer 2020.

The first set of farrowing intentions for the March-May 2021 quarter was 0.8% lower than the same period in 2020. Follow through could trim slaughter supplies.

Overall, the farrowing intentions do not imply any significant supply reductions, but remember these are intentions. Even in stable times intentions are just educated guesses.

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Price signals also mixed

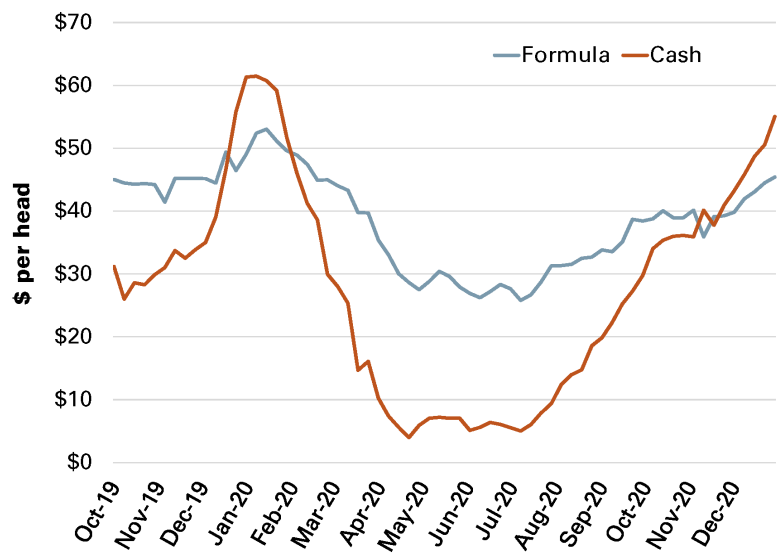
COVID-19 really hurt farms that sell feeder pigs (40 pounds) or weaned pigs (10-12 pounds). Disruptions weighed on these markets longest. Fourth quarter 2020 market hog prices averaged 9% higher than the same period in 2019. Feeder pig prices were 3% higher. Weaned pig prices advanced only 0.5%.

Fourth quarter 2020 formula weaned pig prices were 11% lower than in the same period in 2019 (Figure 2). Formula prices are often linked to the lean hog futures contract five months out. Differences in attitude at the two year ends were a huge factor. At the end of 2019 optimism for continued strong global and domestic pork demand hiked futures, which bolstered formula weaned pig prices. Such optimism did not exist in 2020's fourth quarter, which let formula prices sag.

However, optimism persists in the cash market. Compared with October-December 2019, fourth quarter 2020, cash weaned pig prices were up 11% vs. down 11% for formula pigs. In December 2020 the spot cash market for weaned pigs was almost \$6 per pig higher than the average formula price.

Markets can be fickle, especially the spot cash market. Futures prices and spot cash prices often respond first to changes in the hog market and therefore can serve as a pulse of the industry. For

Figure 2. Weekly national early weaned pig (10-12 pound) prices



Data source: USDA-AMS

example, is finishing capacity adequate to support hog supplies? It currently appears to be. Should issues reoccur, pig prices may serve as a first signal of upcoming problems.

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

	Year-over-Year Change In Commercial Hog Slaughter	ISU Model Price Forecast, IA-MN Base Price, All Purchase Types	CME Futures (12/23/20) Adjusted for IA-MN Producer Sold Weighted Average Carcass Base Price for All Purchase Types Historical Basis
	(percent)	(\$/cwt)	(\$/cwt)
Jan-Mar 2021	-2.06	66-70	67.94
Apr-Jun 2021	6.57	73-77	74.64
Jul-Sep 2021	0.30	75-79	76.54
Oct-Dec 2021	-0.16	64-68	65.50



Factors driving prices

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

Crop prices have been on a tear since the derecho in August. Nearby corn futures have risen from \$3.25 per bushel then to nearly \$5 per bushel in the first week of January. Nearby soybean futures have gained nearly \$5 per bushel during that same time. The bulls have come out to play over the past five months.

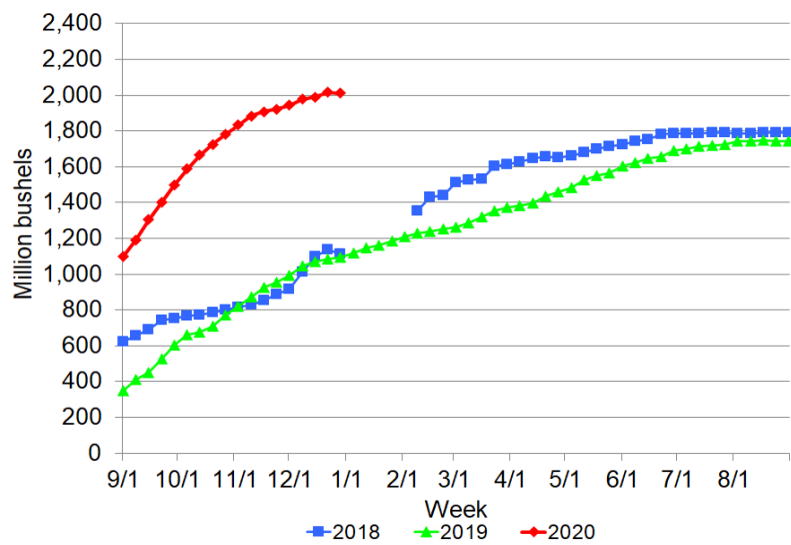
There are several factors supporting these runs. Concerns about drought continue to hang over production outlooks in both South America and the US. Labor disputes and a strike have hampered South American exports. But arguably, the two most important factors supporting US crop prices today are the pace of US export sales and speculator interest in the crop markets.

Let's start with the export sales.

Throughout the COVID pandemic, US agricultural exports have continued to move aggressively in global markets. As the 2020-2021 marketing years for corn and soybeans opened up in September, we saw the opening salvo of that surge. Figures 1 and 2 display the weekly export sales data for the 2018, 2019 and 2020 crops. The sales pace for the 2020 soybean crop has been phenomenal. Advance sales of the crop before harvest totaled roughly 1.1 billion bushels. Ten weeks into the marketing year, soybean sales had already surpassed the annual totals for 2018 and 2019. While the pace of sales has slowed sizably this winter, US soybean exports are still on a trajectory to reach record levels. China has been and continues to be the major player in this market, providing roughly 90% of the sales growth. And that's likely understated as sales to unknown destinations (which usually end up in China) are the second largest growth area. Mexico and Egypt have also substantially increased soybean purchases this year.

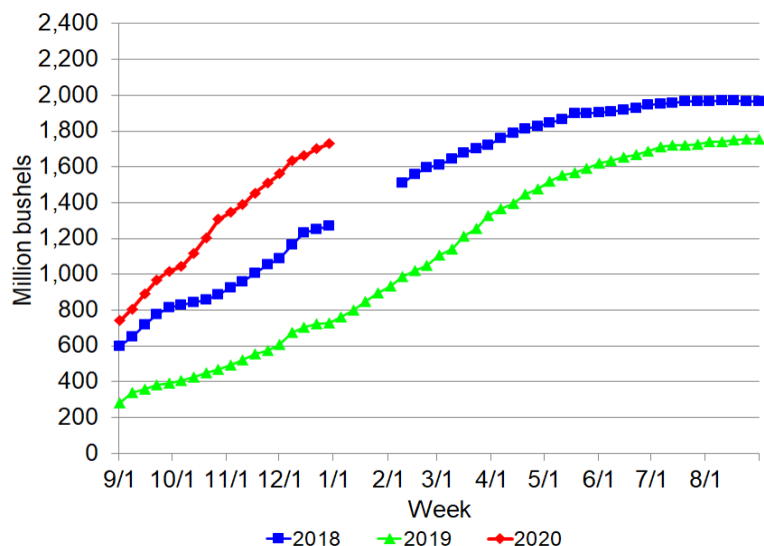
For corn, the advance sales weren't quite as strong, but recent purchases have remained stronger. As the marketing year began, corn export sales had already topped 700 million bushels. Since then, we've added another billion bushels in sales. With next week's data, sales will pass the 2019 total.

Figure 1. Soybean export sales



Source: USDA FAS

Figure 2. Corn export sales



Source: USDA FAS

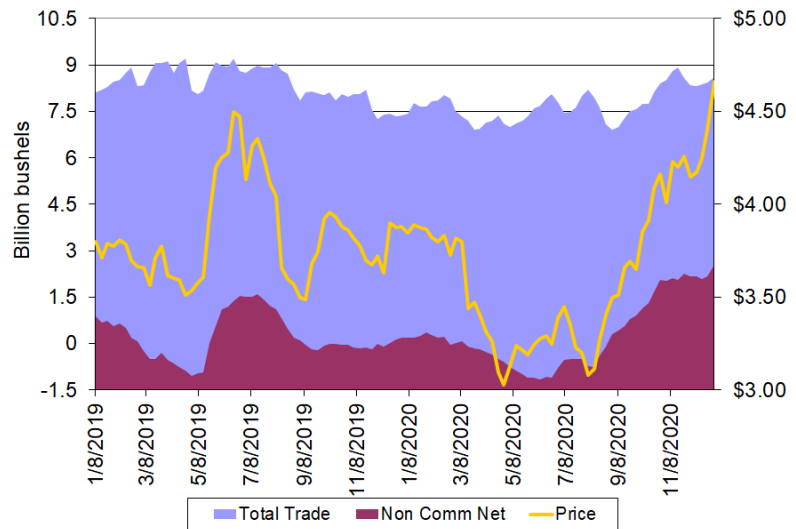
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USDA's projections show a record export year for corn as well. China is the top buyer for corn this year. However, unlike with soybeans, the rest of the world has ramped purchases also. Mexico is up 10% compared to last year at this time. Japan has nearly doubled its purchases at this point. In fact, all of the top six markets for US corn are showing at least double-digit percentage gains.

The strength of those export sales, combined with the smaller projections for the 2020 crops during the harvest season, provided supporting stories for speculators to buy into the crop markets. Figures 3 and 4 show the total trade and speculative interest in the corn and soybean futures markets, along with the nearby futures prices for the markets. I'm using non-commercial net trading positions to measure speculative interest. To provide some historical context, I included the data from the beginning of 2019. For corn, total corn futures trading covers roughly 8 billion bushels on average. Over time, speculators have played on both sides of the market. Sometimes being short (selling futures), looking for prices to fall. Other times being long (buying futures), looking for prices to rise. Through the first half of 2020, speculators gradually moved into increasingly short positions. But throughout the second half of the year, speculators reversed those positions and have established significant long positions in the market. This buying spree has definitely added fuel to the corn price rise.

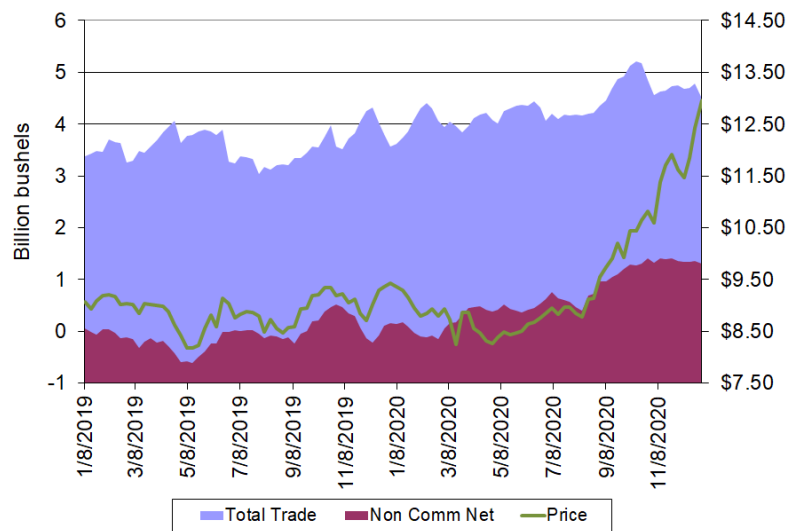
For soybeans, total quantities traded have been increasing over time. During most of 2019, the soybean futures market covered 3-4 billion bushels. Over 2020, it's been 4-5 billion bushels. Speculators have been more positive about the soybean market, holding long positions more often than in the corn market. But as with corn during the second half of 2020, the increase in non-commercial net long positions has aligned with the dramatic rise in prices.

Figure 3. Corn futures trade and prices



Sources: CFTC and CME Group

Figure 4. Soybean futures trade and prices



Sources: CFTC and CME Group

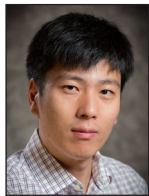
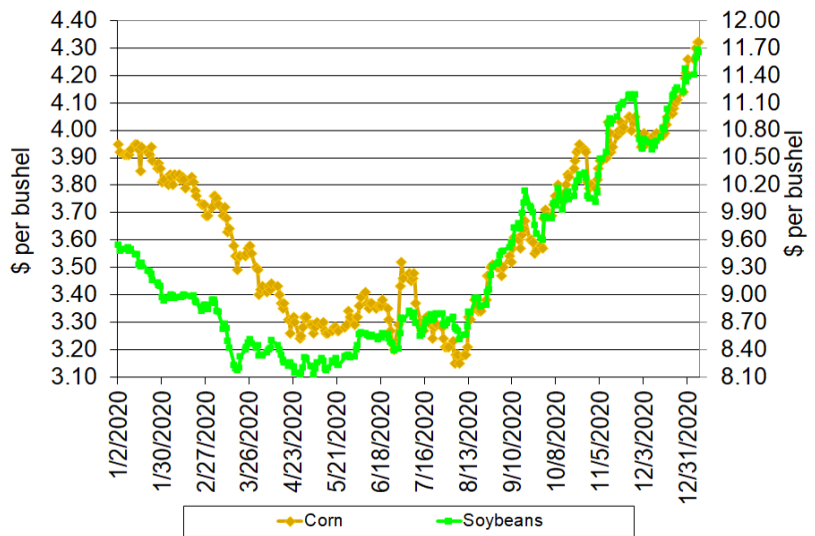
The combined firepower of export sales and speculative interest has lit a fire underneath both crops' prices. Before the derecho, futures pointed to 2020-2021 season-average prices of \$3.15 per bushel for corn and \$8.50 per bushel for soybeans. Now, futures indicate season-average prices of \$4.30 per bushel for corn and \$11.75 per bushel for soybeans. These prices have significantly exceeded USDA's current estimates of \$4 per bushel for corn and \$10.55 per bushel for soybeans.

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Factors driving prices, continued from page 6

The question going forward is, can these factors continue to shove prices higher. At some point, the price increases will start to limit export desires. That may already be happening with soybeans, given the data from the last few weeks. And speculators will be quick to liquidate if they sense any weakness in the markets. For example, look back at the corn price run in May and June of 2019 and the quick turnaround in July that same year. Enjoy the run while it lasts. Luckily, for both of these factors, we get weekly updates on export sales and futures trading to monitor the situation.

Figure 5. 2020/21 projected season-average prices (derived from futures)



Outlook for land values in 2021 and beyond: results from the 2020 Iowa land value survey

By Wendong Zhang, extension economist, 515-294-2536, wdzhang@iastate.edu

The Iowa farmland market saw its third, albeit modest, increase in the past six years. The estimated \$7,559 per acre statewide average for all qualities of land in Iowa represents a 1.7% increase in nominal land values from November 2019. If we examine the inflation-adjusted land values, this would represent a \$59 per acre, or 0.9%, increase from one year ago. In nominal terms, the \$7,559 per acre value in 2020 represents a 13% loss off the peak land value of \$8,716 in 2013. After adjusting for inflation with the Consumer Price Index (CPI), it represents a 22% decline from the 2013 peak.

The increase is likely a result of record-level federal ad hoc payments, drastic cuts in interest rates by the Federal Reserve, recent surges in agricultural exports and commodity prices, and limited land supply. Although this recent rise is very modest in magnitude, the farmland market in Iowa and across the Midwest is holding up remarkably well despite significant uncertainty due to the COVID-19 pandemic and the devastating derecho.

According to the USDA Economic Research Service's [December 2020 farm income forecast](https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast), www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast, US net farm income is forecast to increase \$36.0 billion (43.1%) from 2019 levels to \$119.6 billion in 2020 (in inflation-adjusted terms, a 41.3% rise). Notably, this increase is largely due to a record-level \$46.5 billion in direct government payments, which are largely the supplemental and ad hoc disaster assistance for COVID-19 relief. In other words, the growth in farm income is almost entirely driven by the substantial COVID-19-related government payments such as CFAP (Coronavirus Food Assistance Program). Despite the recent commodity price rallies due to stronger exports, the economic fundamentals of the US farm economy have not substantially improved yet. In these trying times with significant uncertainty, the strong federal government payments and drastic cuts in interest rates by the Federal Reserve have injected stability into the farmland market.

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Put simply, land value is the net present value of all discounted future income flows. With certain assumptions imposed, one could think of land value being net income divided by interest (discount) rate. To understand the changes in land value over time and across space, it is useful to examine how net income and interest rates will change over the next few years. Improving commodity prices, rising farm income, and lower interest rates tend to exert upward pressures on land values.

From this perspective, the recent modest increase and overall stabilization of the farmland market is consistent with reports on rising farm income as well as several other underlying supply and demand factors. First, the [surges in international sales](http://www.extension.iastate.edu/agdm/articles/hart/HartDec20.html), www.extension.iastate.edu/agdm/articles/hart/HartDec20.html, especially to China, have led to projected record-high corn exports this marketing year, and a doubling of soybean sales compared to this time last year. Due to the Phase 1 trade deal and China's hog recovery effort, China also bought record levels of US beef and pork. Our [research](http://www.card.iastate.edu/products/publications/synopsis/?p=1303), www.card.iastate.edu/products/publications/synopsis/?p=1303, shows that China is projected to import a record-level \$31 billion in US agricultural products in 2020. The major upward swings in exports led to rosier price outlooks: USDA forecasts the 2020 season-average corn and soybean prices at \$4 per bushel and \$10.40 per bushel, respectively, the highest levels since 2013. As a result, both crops now offer comfortable profit margins based on the [2020 Iowa Cost of Production](#)

[estimates](http://www.extension.iastate.edu/agdm/crops/pdf/a1-21.pdf), www.extension.iastate.edu/agdm/crops/pdf/a1-21.pdf. Second, the Federal Reserve drastically cut the [federal funds rate to near-zero levels to combat COVID-19](http://www.chicagofed.org/research/dual-mandate/the-federal-funds-rate), www.chicagofed.org/research/dual-mandate/the-federal-funds-rate. Many respondents to the 2020 survey reported much lower rates for 20-year farmland mortgage and operating loans when compared to estimates one year ago. Lower interest rates kept the increase in interest expenses at modest levels and supported farm profitability. Third, the farmland market has always been a thin market with few farmland sales; however, in the past six years, the farmland market has been extremely tight. In this year's survey, only 38% of respondents reported more sales activity, while 19% and 43% reported less or similar sales activities, respectively. The percent of respondents reporting more sales is higher than recent years, but it is still fairly low. The limited farmland supply helped buoy market prices in many areas across the state. Fourth, despite the devastating derecho that caused heavy damage in the central and east central districts, the Iowa corn and soybean yields remain decent and stronger than expected. In November 2020, USDA forecasted corn yields of 184 bushel per acre and soybean yields of 52 bushel per acre for Iowa. Nationally, we will see the third-largest corn crop and the fourth-largest soybean crop on record.

Table 1. Iowa farmland values and percentage change by district and land quality, November 2020

District	Average Value	% Change	High Quality	% Change	Medium Quality	% Change	Low Quality	% Change
Northwest	\$9,536	2.0%	\$10,780	0.2%	\$8,993	4.2%	\$6,486	6.4%
North Central	\$7,927	0.2%	\$8,889	0.3%	\$7,350	1.4%	\$5,297	-0.5%
Northeast	\$7,525	2.7%	\$9,182	1.5%	\$6,980	2.2%	\$5,213	8.5%
West Central	\$7,859	3.9%	\$9,159	1.6%	\$7,433	5.0%	\$5,492	11.0%
Central	\$8,485	1.8%	\$9,800	0.5%	\$7,883	3.1%	\$5,793	6.0%
East Central	\$8,524	0.6%	\$10,199	-2.1%	\$7,959	1.7%	\$5,599	6.1%
Southwest	\$6,112	-0.9%	\$7,484	-3.7%	\$5,843	0.0%	\$4,055	5.5%
South Central	\$4,658	3.8%	\$6,408	-0.1%	\$4,563	4.4%	\$3,262	10.4%
Southeast	\$6,935	1.0%	\$9,299	-0.4%	\$6,639	0.3%	\$4,134	9.1%
STATE (average)	\$7,559	1.7%	\$9,068	-0.1%	\$7,119	2.6%	\$5,078	6.7%

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Outlook for land values in 2021 and beyond, continued from page 8

Table 1 shows that across the nine crop reporting districts and 99 counties, land value patterns were localized and mixed, driven by changes in local land supply and demand. While land values could be thought of as net income divided by interest rates, net income tends to be localized while interest rates are more universal. All crop reporting districts except for the southwest district reported an increase in land values, and 78 of 99 counties in Iowa reported a rise in land value. While high-quality land in Iowa saw an overall decrease of 0.1%, the value of low-quality land statewide grew 6.7%, with the northeast, west central, south central, and southeast districts all reporting increases of 8% or more. This disparity could be a result of multiple factors: the derecho mainly affected the central and east central districts, where cropland acres are more concentrated, and the initial shocks from the COVID-19 pandemic led to greater loss of livestock and declining ethanol prices. In contrast, strong demand for recreational tracts continues to create a surge in low-quality land values across central Iowa, especially as hunting grounds and other tracts allowing outdoor social-distancing become more appealing. It is also important to note that a relatively small dollar change results in a high percent change for low-quality land values; furthermore, [our previous research](http://www.card.iastate.edu/products/publications/pdf/20wp612.pdf), www.card.iastate.edu/products/publications/pdf/20wp612.pdf, shows that experts' estimates are less informative and noisier for low-quality land, suggesting that more trust should be put in the Iowa State University Land Value Survey for high-quality land values than for low-quality land values. The 2020 Iowa State University Land Value Survey also shows that 69% of farmland sales were to existing local farmers, and they typically only look for land sales near their farm, or at least in the same county. Due to the limited land supply, this suggests that local conditions of the land market, especially the competitiveness of the land market and desirability of land parcels, explain the variations in land value patterns across districts, counties, and land quality classes.

In general, the results from the 2020 Iowa State University Land Value Survey echo results from other surveys, which all showed relatively stable farmland market trends with recent signs of growth due to recent surging commodity prices and agricultural exports. In November 2020, the [Federal Reserve Bank of Chicago](http://www.chicagofed.org/publications/agletter/2020-2024/november-2020), www.chicagofed.org/publications/agletter/2020-2024/november-2020, reported a 1%

increase in Iowa's "good" farmland values from October 2019 to October 2020. In September, the [REALTORS Land Institute](https://rliiowachapter.com/wp-content/uploads/2020.09-Press-Release-1.pdf), <https://rliiowachapter.com/wp-content/uploads/2020.09-Press-Release-1.pdf>, reported an overall 0.1% increase in Iowa cropland values from September 2018 to September 2019. In contrast, [USDA June Area Survey](http://www.nass.usda.gov/Publications/Todays_Reports/reports/land0820.pdf), www.nass.usda.gov/Publications/Todays_Reports/reports/land0820.pdf, reported a 1.7% decline in Iowa's agricultural real estate values (land and building) from June 2019 to June 2020, reflecting uncertainty due to the pandemic.

Across the Corn Belt and Great Plains, the land market saw mixed signals, yet remained relatively stable in general. Many neighboring states also experienced stable trends and some also saw recent increases in land values, especially in surveys conducted in recent months in light of commodity market rallies. The [Illinois Society of Professional Farm Managers and Rural Appraisers](https://s3-us-west-2.amazonaws.com/clients-ispfmra/wp-content/uploads/2019/07/29164253/2019-lv-book-final-copy.pdf), <https://s3-us-west-2.amazonaws.com/clients-ispfmra/wp-content/uploads/2019/07/29164253/2019-lv-book-final-copy.pdf>, and University of Illinois reported in March 2020 that Illinois land values have been stable for excellent quality land and lower-quality land declined 1%-3% from January 2019 to January 2020. The March 2020 [Nebraska report](https://agecon.unl.edu/research/2020-NE-Farm-Real-Estate-Report.pdf), <https://agecon.unl.edu/research/2020-NE-Farm-Real-Estate-Report.pdf>, indicated the average market value of farmland increased by 3% compared to one year earlier. The January 2020 [Minnesota report](https://landeconomics.umn.edu/), <https://landeconomics.umn.edu/>, showed statewide average farmland sales prices declined by 2.5% from 2018 to 2019. The 2020 land value survey conducted by [Purdue University](https://ag.purdue.edu/agecon/Documents/PAER/PAER_2020_July.pdf), https://ag.purdue.edu/agecon/Documents/PAER/PAER_2020_July.pdf, reported a 1.0% and 1.7% decline for Indiana's statewide top- and medium-quality farmland values, respectively, from December 2019 to June 2020; however, their report also showed overall 3%-6% growth in Indiana land values due to higher land values in late 2019. The quarterly [AgLetter report](http://www.chicagofed.org/publications/agletter/2020-2024/november-2020), www.chicagofed.org/publications/agletter/2020-2024/november-2020, by the Chicago Federal Reserve Bank issued in November 2020 indicated a 2% increase in Illinois, a 1% increase in Iowa, and 3% and 6% growth for Wisconsin and Indiana, respectively, for the period of October 1, 2019, to October 1, 2020. It also reported an overall 2% growth over the last quarter for the

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seventh district and a 2%-3% increase for Indiana and Iowa land values. The quarterly [Ag Credit survey](http://www.kansascityfed.org/en/research/indicatorsdata/agcreditsurvey/articles/2020/11-12-2020/farm-financial-outlook-improves), www.kansascityfed.org/en/research/indicatorsdata/agcreditsurvey/articles/2020/11-12-2020/farm-financial-outlook-improves, conducted by the Kansas City Federal Reserve Bank, published in November 2020, revealed that the values of non-irrigated cropland across the tenth district grew 3% from the previous year.

The stabilization in the land market and recent commodity market rallies offered our respondents' optimism and confidence in the future farmland market, especially in the medium term. Forty-five percent of respondents forecasted an increase in their local land market in one year, while 22% expected a lower land value and 32% forecasted no change. Looking five years ahead, a vast majority of the respondents (83%) expect a higher land value than current levels, with only 6% forecasting a decline. This is consistent with respondents' corn and soybean price forecasts – respondents expect a substantial export-driven hike in both corn and soybean cash crop markets. The [Ag Economy Barometer](https://ag.purdue.edu/commercialag/ageconomybarometer/charts/), https://ag.purdue.edu/commercialag/ageconomybarometer/charts/, led by Purdue University, a nationwide monthly agricultural producer survey, showed the highest farmer ag economy sentiment index reading since 2015. That survey showed that 54% of the surveyed farmers expect higher farmland prices five years from now. These opinions are also consistent with farmers' sentiments about trade with China: although the sentiment has declined in recent months, 50% of farmers still believe that the trade dispute with China will ultimately be resolved in a way that benefits US agriculture.

There are at least two unique factors at play for the current and future land markets. While it is now cliché to call the COVID-19 pandemic unprecedented, it did lead to several new changes: (a) institutional food demand (e.g., schools and catering) and food consumption away from home were decimated due to changes in food demand patterns; (b) demand for ethanol was severely affected due to travel restrictions and consumers being less willing to travel; (c) the COVID-19 pandemic resulted in shifts from face-to-face land auctions to private listings or brokered sales and online auctions; and, (d) the COVID-19 pandemic

both triggered [further deterioration in US-China relations](http://www.extension.iastate.edu/agdm/articles/zhang/ZhaNov20.html), www.extension.iastate.edu/agdm/articles/zhang/ZhaNov20.html, and, at the same time, made the Phase 1 trade deal even more politically significant as other high-level communication channels all vanished. Only time will tell how permanent these factors are, but long-term shifts in farm income will eventually be capitalized in future land values.

At the same time, the Federal Reserve implemented drastic cuts in March 2020 to combat COVID-19 economic uncertainties, which resulted in a near-zero federal funds rate and a further reduction of average farmland loan rates from 5% to 4.5% or lower. In this year's survey, favorable interest rates was the most frequently mentioned factor supporting Iowa farmland values (26% of respondents). In addition, [our recent research](http://www2.econ.iastate.edu/faculty/zhang/publications/working-papers/2020-Basha-Zhang-Hart-AFR-Interest-Rate-Land-Value.pdf), www2.econ.iastate.edu/faculty/zhang/publications/working-papers/2020-Basha-Zhang-Hart-AFR-Interest-Rate-Land-Value.pdf, also suggests the long-lasting impacts of interest rate changes on farmland values – the large cut in the federal funds rate in 2020 will fully offset the 2015-2018 federal funds rate hikes made by the Federal Reserve, and the 2020 rate cut will dominate the interest rate impact for the foreseeable future.

Farmland has historically been a fairly robust investment that generates relatively stable returns, especially when [compared with other investments, such as stocks](http://www.extension.iastate.edu/agdm/articles/zhang/ZhaJul19.html), www.extension.iastate.edu/agdm/articles/zhang/ZhaJul19.html. This stability becomes even more appealing in 2020, as the stock and bulk commodity markets exhibited substantial volatility with the unfolding of the COVID-19 pandemic. Since 1941, the nominal and inflation-adjusted Iowa farmland values have averaged a 6.4% and 2.5% increase per year, respectively. Farmland values have increased 72% of years, decreased 26% of years, and remained unchanged for three years between 1910 and 2020. While 29% of farmland in Iowa is primarily owned for family or sentimental reasons, the strong robust returns for farmland have, and will continue to, attract interested farmers and investors to invest in the farmland market.

There are several new uncertainties worth watching over the next year or two. First, several of our respondents mentioned the political uncertainty due to the 2020 presidential and senate races, and

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more broadly, what the agricultural, trade, and conservation policy priorities will be under a Biden administration. Key issues include environmental regulations, possible new trade agreements, and policies related to renewable energies and agricultural-climate policies. Second, even with the availability of vaccines, the pandemic's duration and trajectory are not entirely clear, and the same can be said for the speed of the US and global economic recoveries. Third, China has once again proven itself to be an indispensable trading partner of US agriculture; however, their record level purchases are still projected to fall below the [Phase 1 trade deal target](#), www.card.iastate.edu/products/publications/synopsis/?p=1303. Trying bilateral relations, negative news about the trade deals, and the possible cancellation of commodity shipments will have significant impacts on farm income and land values. Fourth, it is interesting to see whether the farm policy continues on the path of massive federal ad

hoc payments, such as trade aid through the Market Facilitation Program or COVID-19 relief through the CFAP program. Arguably, these represent a major redirection of farm policy away from Congress's decoupling efforts that started with the 1996 Farm Bill. Finally, it is critical to watch for whether the uncertainty posed by the pandemic leads to landowners' growing interest in selling land, or more stressed sales from financially stressed producers.

This recent modest increase in the Iowa farmland market is a result of lower interest rates, substantial government payments, strong demand, and limited land supply. The increase is modest, but indicates the stability of the farmland market. The interest rate cuts and agricultural export surges will have significant implications on commodity prices, farm incomes, and farmland values. While no one can predict the future, it seems that Iowa farmland values have proved resilient during the pandemic.



Virtual farm bill meeting series for 2021 decisions

By Alejandro Plastina, extension economist and assistant professor in economics, 515-294-6160, plastina@iastate.edu; Ann Johanss, extension program specialist, 515-337-2766, aholste@iastate.edu

Iowa producers have until March 15, 2021 to make their annual election for Price Loss Coverage or Agriculture Risk Coverage (at the individual and county levels) under the 2018 farm bill. The 2021 annual decision is unlike the previous Farm Bill when producers made a one-time decision for their operation that was in place for the life of the farm bill.

The basic choices continue to be Price Loss Coverage, and Agriculture Risk Coverage (at the individual and county levels). A farmer's choice will depend on the type of operation, and the county and region where the farm is located. PLC payments are triggered when the marketing year average price falls below the reference prices of \$3.70 per bushel for corn and \$8.40 per bushel for soybeans. Current USDA projections for 2021 are close to \$4 per bushel for corn and \$10.55 per bushel for soybeans. Whereas, ARC-CO payments are triggered when actual county revenue for the crop is less than the benchmark guarantee.

In order to help Iowans analyze the options for 2021, Iowa State University Extension and Outreach is offering a series of webinars. The lead webinar on

February 19 at 1 p.m. will feature staff from USDA Farm Service Agency (FSA) addressing program logistics, changes for 2021, and how producers can best work with their county FSA staff and offices that may remain closed to the public through the sign-up date. Alejandro Plastina, associate professor in economics and extension economist at Iowa State University, will review the analysis process on February 5 at 1 p.m. The two statewide-focused webinars will be followed by farm management field specialists holding regional webinars February 9-19, going through examples with the most recent price projections, and answering questions on specific concerns by landowners and producers.

"While payments may not have the financial impact we have seen in previous years, producers should still review the decision for this risk management option with benchmark data as well as price projections for the current marketing year," said Ann Johanss, program specialist in economics with ISU Extension and Outreach. "If a producer does not make a change by March 15, the election from the previous sign-up is retained."

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More Information

There is no cost to join the live webinars, and all virtual sessions will be recorded and available for viewing on the Ag Decision Maker website the day following the live session. With guidelines on in-person programming evolving, some in-person sessions may be offered in areas of the state. See the [Ag Decision Maker webpage](http://www.extension.iastate.edu/agdm/info/farmbill.html), www.extension.iastate.edu/agdm/info/farmbill.html for details on the webinar series and a calendar of in-person programming.

Farm Transitions in 2021 and Beyond

In addition to the farm bill-focused webinars, the monthly January webinar to held on January 21, 2021 at 7 p.m is on "Farm Transitions in 2021 and Beyond". David Baker, director of the Beginning Farmer Center at Iowa State University, will dive into the initial planning stages for farm transitions: values, vision, and goals, as well as offer tips to address communication issues that often arise. Melissa O'Rourke, farm and agribusiness management specialist with ISU Extension and Outreach, will discuss taking inventory and crunching the numbers, understanding federal estate and Iowa inheritance tax issues, and building your professional team. See the [Ag Decision Maker events](#) page to register or view replays of past webinars, www.extension.iastate.edu/agdm/info/meetings.html.

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Internet Updates

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

- Estimated Costs of Crop Production in Iowa 2021 – A1-20 (Decision Tools)
- USDA Season-Average Commodity Prices – A2-15 (1 page)
- Historical Farmland Value Survey Iowa State University – C2-70 (Decision Tool)
- Historical Iowa Farmland Value Survey by County – C2-72 (10 pages)
- Marketing Outlet Analyzer – C5-32 (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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