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Feed Outlook: April 2022

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In this report:

Elevated Feed Grain Prices Continue for 2021/22

The outlook for 2021/22 U.S. corn markets in the April *World Agricultural Supply and Demand Estimates (WASDE)* report is for offsetting changes to domestic feed and residual use, and to food, seed, and industrial use from the March report. The result is projected ending stocks unchanged. The projected season-average farm price for corn in 2021/22 is raised to $5.80 per bushel. Sorghum food, seed, and industrial use is also raised, while barley exports are lowered. Projected ending stocks for 2021/22 are lowered for both sorghum and barley. The season-average price is also raised for sorghum and oats, while unchanged for barley.

The Russian military invasion into ***Ukraine*** continues to be the chief factor affecting global grain trade. Recent information and developments have been incorporated into an initial assessment of the consequences of the crisis and were presented in the March report. For a second month in a row, ***Ukrainian*** corn exports are sharply reduced. Since the beginning of the invasion, USDA projections for Ukrainian corn exports have dropped by about 30 percent. A drop in corn exports is also projected from ***Serbia***. The reductions are expected to be partly offset by higher exports of the other major corn suppliers. The main foreign market for Ukrainian corn in recent years has been ***China***, and it is unlikely that other corn suppliers can fully replace the drop in Ukraine's exports to the country. Chinese corn imports are thereby projected down.

Domestic Outlook

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Corn March 1 Inventories Reveal Strong Rates of Usage

The USDA's outlook for 2021/22 U.S. corn markets is for projected use at 14,935 million bushels in the April *World Agricultural Supply and Demand Estimates (WASDE)* report. The total use projection is unchanged from the March *WASDE* report. Despite the unchanged total supplies, the outlook adjusts the food, seed, and industrial and the feed and residual components of the market.

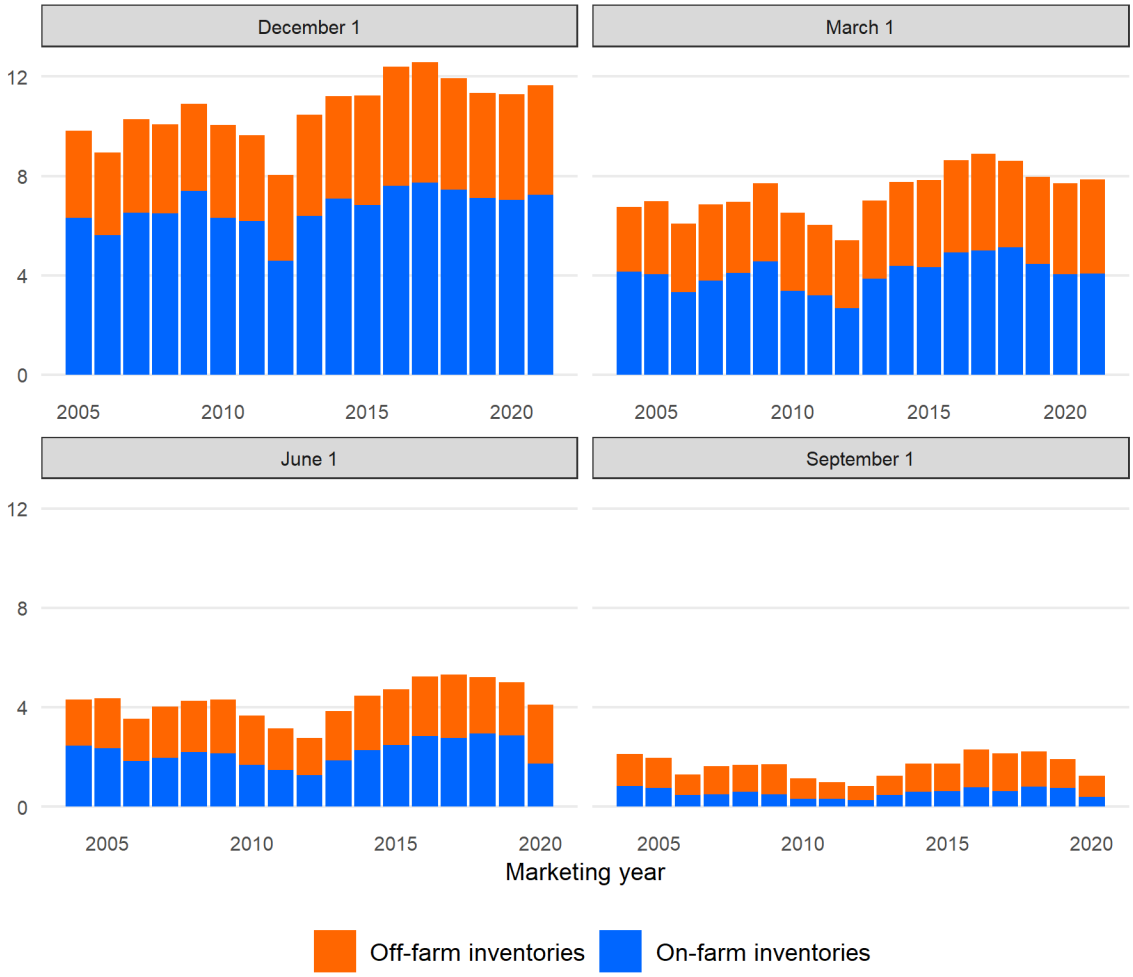
The National Agricultural Statistics Service (NASS) released its estimated March 1 corn inventories figure in the March 31 release of the *Grain Stocks* report. The United States had 7,850 million bushels of corn inventoried in 2022—down slightly from the previous year's level of 7,969 million bushels. Comparing the March 1 levels to the December 1 inventories, the estimate shows that total disappearance during the second quarter of 2021/22 was 5-percent higher than the same period in 2020/21. The higher rate of disappearance comes despite higher cash market prices in 2021/22—although the current marketing year has been characterized by both higher production and available supplies than the previous year.

The 2021/22 ending stocks projection (representing September 1, 2022 inventories) is unchanged from the previous month and would represent a 17-percent increase from the previous year. The stocks-to-use ratio also remains unchanged from the March *WASDE* report at 9.6 percent.

Figure 1

U.S. corn inventories, quarterly, on-farm versus off-farm

Billion bushels



Source: USDA, National Agricultural Statistics Service.

Corn Used for Fuel Ethanol Higher Year Over Year, Through the First Half of 2021/22

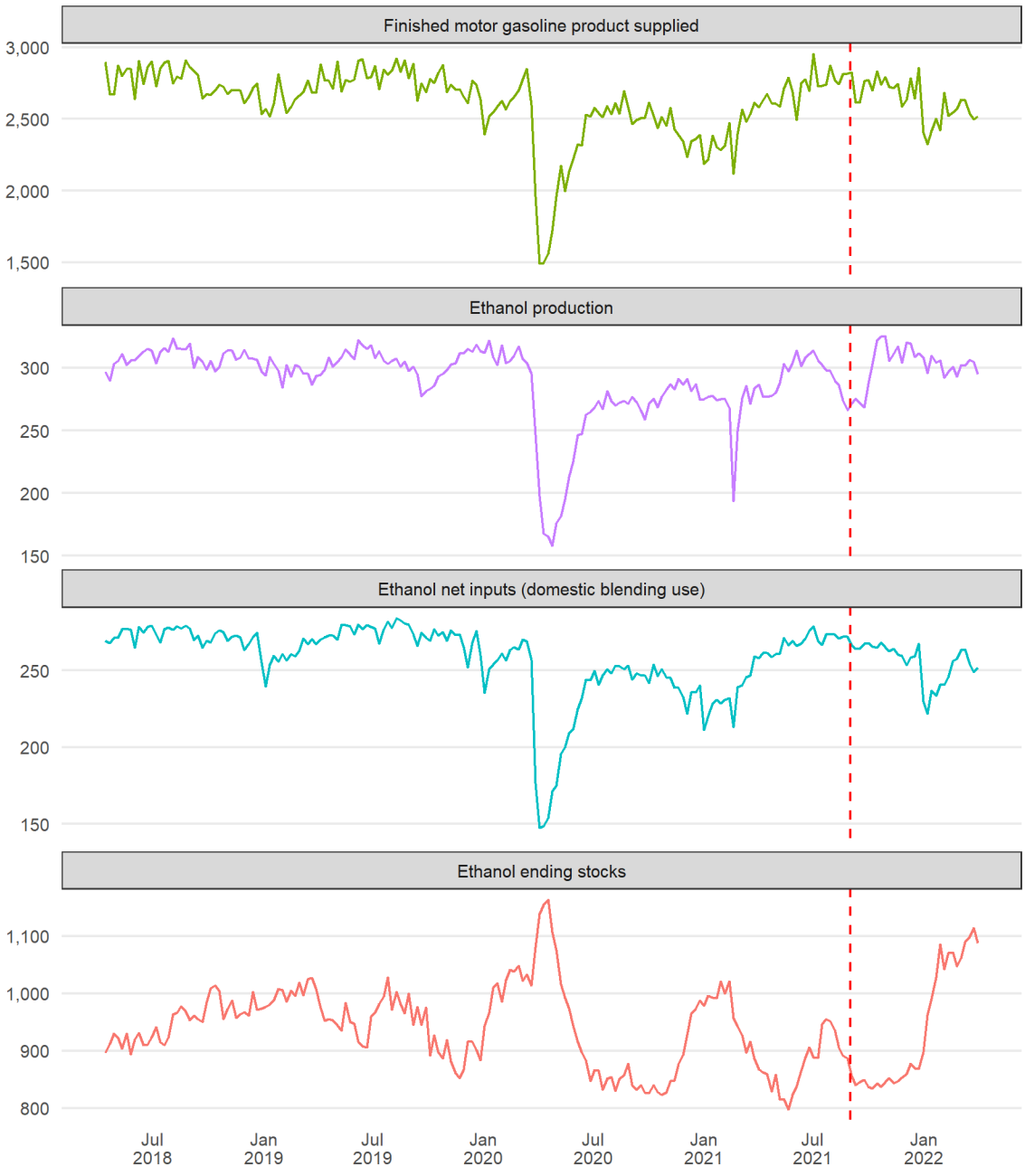
Corn used for food, seed, and industrial purposes is projected to be 6,810 million bushels in 2021/22—including corn used for fuel ethanol, projected at 5,375 million bushels. Fuel ethanol projections are raised 25 million bushels from the March *WASDE* report. According to NASS's *Grain Crushings and Co-Product Production* report, corn use for fuel ethanol production totaled 2,689 million bushels from September 2021 through February 2022. The 6-month total represents a 10-percent increase from 2020/21. Much of this increase is due to very strong production rates that occurred during the fall of 2021 (see the special article in this report). While not as strong as they were during the fall, the U.S. Department of Energy, Energy Information Administration's (EIA) weekly production figures show that ethanol production rates

remain robust, despite increasing gasoline prices and relatively lower driving rates, as implied by the weekly finished motor gasoline product supplied data.

Figure 2

Weekly totals of U.S. gasoline product supplied, ethanol production, net inputs, and ending stocks

Million gallons



Note: The red line notes start of 2021/22 marketing year.
Source: U.S. Department of Energy, Energy Information Administration.

Export Pace in 2021/22 Ahead of Previous Year, But Latter Half of the Year Not Expected To Match 2020/21 Record

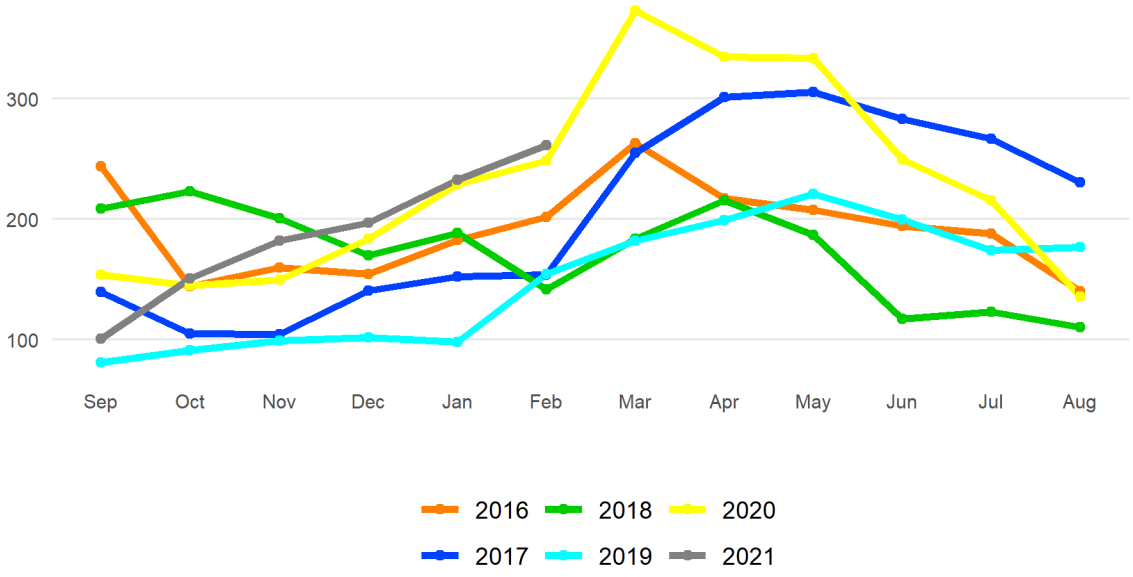
U.S. corn exports are projected to total 2,500 million bushels—unchanged from the March projection and 9-percent below the 2020/21 record-setting total. If realized, the current projection would be the second-largest export program for the United States.

Through February 2022, according the U.S. Bureau of the Census, the United States has exported 1,124 million bushels of corn. The total is 1-percent higher than the same period of the previous year. Exports in 2020/21 were characterized by record shipments during the March through May quarter—particularly to China. A surge of similar magnitude is not expected, based on preliminary shipment data from the USDA's Agricultural Marketing Service and Foreign Agricultural Service's (FAS) Export Sales Report data, however.

Figure 3

U.S. corn exports, total, monthly

Million bushels



Source: U.S. Department of Commerce, Bureau of the Census.

Feed and Residual For 2nd Quarter on Par With a Year Ago

Feed and residual for 2021/22 is projected at 5,625 million bushels—down 25 million bushels from the March *WASDE* report. Based on the data reported in the latest *Grain Stocks* report and other known-reported-use categories, feed and residual for the December through February quarter of 2021/22 is estimated at 1,423 million bushels. The estimate is essentially unchanged from the same period in 2020/21, which totaled 1,429 million bushels. The current 2021/22

projection would be a less-than-1-percent increase from 2020/21 current feed and residual estimates.

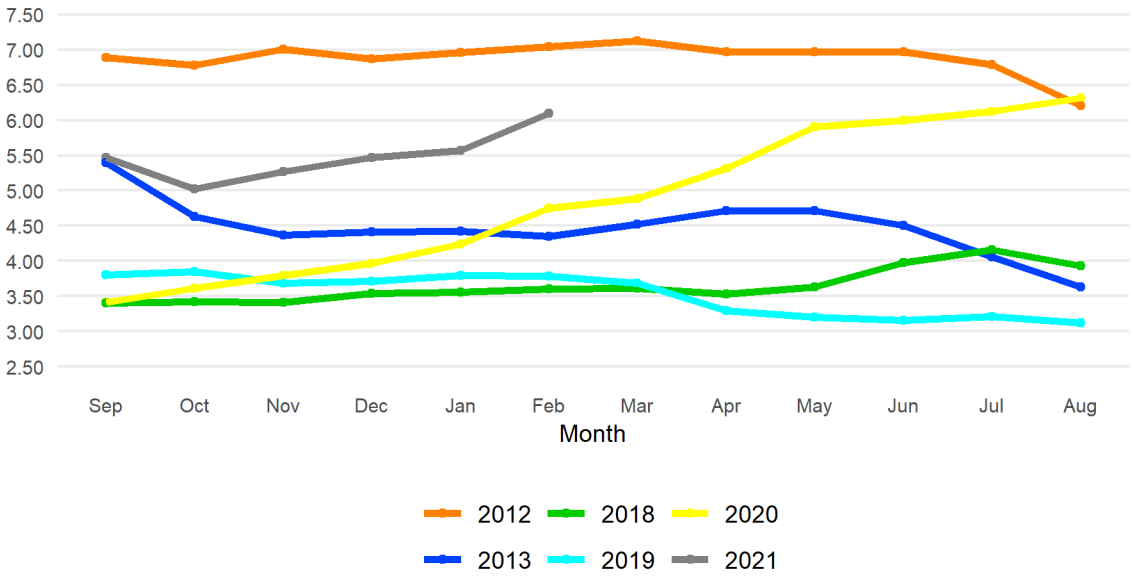
Projected 2021/22 Corn Price Raised, Cash Prices Remain Elevated Since Russian Invasion of Ukraine

The national season-average price received forecast for corn in 2021/22 is projected at $5.80 per bushel—a $0.15-per-bushel increase from the March projection. The raised price outlook is based on the monthly pace seen through February, as reported by NASS's *Agricultural Prices* report.

Figure 4

Price received for corn, monthly

U.S. dollars per bushel



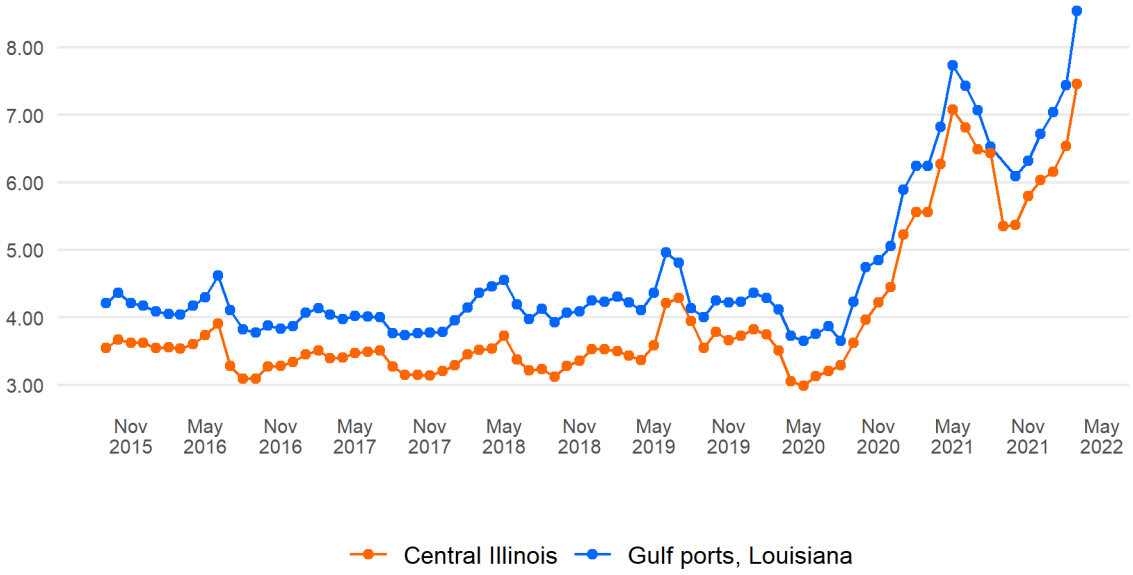
Source: USDA, National Agricultural Statistics Service.

Cash prices for corn throughout the United States have increased since the Russian military's invasion of Ukraine, which began on February 24, 2022. Global grain markets have since been operating at higher price levels and have seen increased levels of volatility. Corn prices at U.S. Gulf Export Terminals averaged above $8.50 per bushel in March. While interior cash prices have also increased considerably (most Terminal markets reported by the USDA's Agricultural Marketing Service (AMS) showed average cash prices above $7.00 per bushel in March 2022), substantial shifts in basis levels (the local cash price less the nearby futures contract price) have indicated that the corn markets' prices discovery processes have been driven by local market fundamentals.

Figure 5

U.S. cash-market prices for corn, monthly average

U.S. dollars per bushel



Source: USDA, Agricultural Marketing Service.

Increased Sorghum Inventories for the 2021/22 Marketing Year

The April sorghum balance sheet for the 2021/22 crop brings a small change in disappearance from the March release. U.S. Sorghum food, seed and industrial (FSI) use is revised up by 5 million bushels to 15 million bushels, due to an increase in ethanol production. Feed and residual use is left unchanged this month at 115 million bushels, for a total domestic use of 130 million bushels. Ending stocks are being reduced by 5 million bushels to 28 million bushels, due to the increase in domestic use.

According to the NASS *Grain Stocks* report released on March 31, the estimated U.S. sorghum stocks are 207 million bushels, a 51 percent increase from the same period in the 2020/21 marketing year.

Figure 6

U.S. sorghum inventories, quarterly, on-farm versus off-farm

Million bushels

Source: USDA, National Agricultural Statistics Service.

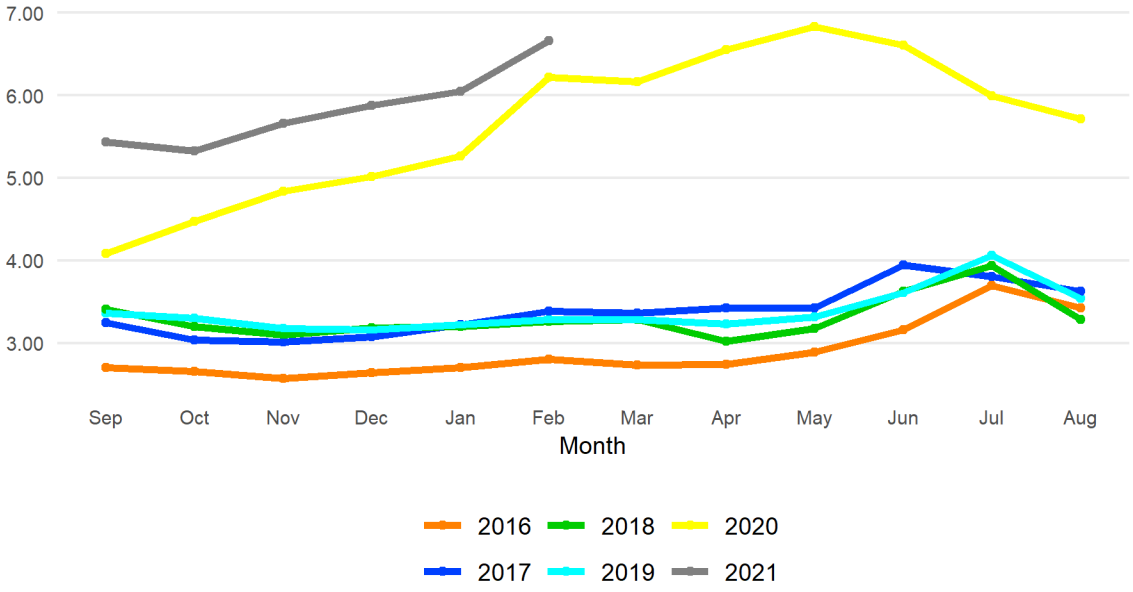
NASS estimated that March 1 sorghum stocks are up in all major sorghum producing States, with Texas having the largest increase at 99 percent—followed by Missouri, Nebraska, and Kansas; up 58, 64, and 36 percent, respectively. While Texas has the largest percentage increase in stocks, Kansas leads the United States in total stocks with 135.9 million bushels, followed by Texas at 39.4 million bushels.

The season-average farm price for sorghum is projected to be $5.85 per bushel in 2021/22, up 7 percent from the 2020/21 marketing year. NASS's latest Agricultural Prices report shows the national farm price received for sorghum increased to $6.66 per bushel in February 2022.

Figure 7

Price received for sorghum, monthly

U.S. dollars per bushel



Source: USDA, National Agricultural Statistics Service.

Barley Supplies Remain Tight, Feed Use Higher

Drought conditions in key-growing regions in the Northern Plains during the summer of 2021 weighed significantly on U.S. barley production. Total barley supplies in 2021/22 of 200 million bushels are down 22 percent from last year. Barley use is revised higher in the April *WASDE* report at 135 million bushels, on increased feed use, as barley remains a competitive feed option where it is grown, compared to costlier, lower-supply alternatives. U.S. barley exports are lowered 2 million bushels, to a projected total of 9 million, based on a weaker pace of shipments seen in the December-to-February quarter. Total on-farm and off-farm barley stocks fell to 72.6 million bushels on March 1, according to the NASS *Grains Stocks* report, which was 40 percent lower than the same quarter in 2021. Barley inventories in the third quarter of 2021/22 are more closely aligned with the average quarterly stocks that are typically seen by the fourth quarter in June, further emphasizing the dramatic decline in barley availability for the current marketing year. Total barley ending stocks for the year are revised down in the April *WASDE* report to 56 million bushels, the lowest level in at least 60 years. The season-average farm price of barley is unchanged from the March projection at $5.25 per bushel in 2021/22, the highest level since 2015/16. Tight barley supplies and strong demand for feed grains, compounded by recent global geopolitical tensions, have been supportive for barley cash prices since the beginning of the new marketing year in June 2021.

Figure 8

U.S. barley inventories, quarterly, on-farm versus off-farm

Million bushels

Source: USDA, National Agricultural Statistics Service.

Projected Total Feed Availability Lower for 2021/22, Along With Implied Feed Demand

Total feed grain and wheat feed and residual is projected at 148.7 million metric tons (MT) for 2021/22. This level is a less-than-1-percent decline from the 2020/21 estimate of 149.6 percent. Higher availability for corn—by far the largest component of the measure—is offset by less availability of wheat, which is reduced from an estimated 3.7 million MT in 2020/21 to 1.3 million MT projected for 2021/22.

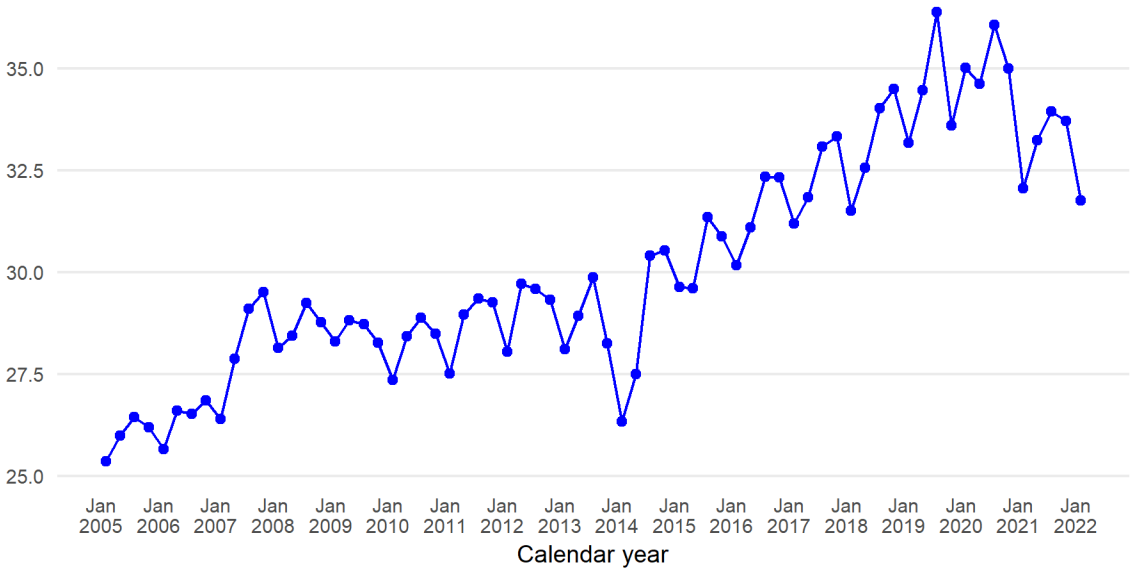
Grain consuming animal units (GCAUs) are projected to be 100.0 million units in 2021/22. This number is a sharp reduction from the 2020/21 estimate of 101.2 million. The annual decline is primarily due to fewer units from the hog sector. The U.S. pig crop has been lower since the

December 2020 through February 2021 quarter. This reduction is at least partially due to hog slaughter and processing capacity bottlenecks that occurred subsequent to the COVID-19 pandemic in the United States. According to the latest NASS *Hogs and Pigs* report, released on March 30, the pig crop between December 2021 and February 2022 was 31.7 million head—a 1-percent decrease from the previous year. However, the 2020/21 quarterly total was 8-percent lower than 2019/20. As a result, the pipeline for hogs to be fed to a full marketing weight has been considerably reduced. The reduction comes after a considerable period of U.S. hog herd expansion that occurred from 2010 to 2019. Hogs typically account for about 30 percent of the total GCAU value, falling from an estimated 31.4 million units in 2020/21 to a projected 30.3 million units in 2021/22.

Figure 9

Quarterly U.S. pig crop inventory

Million head



Note: The data point is located on the final month of the three-month quarter.
Source: USDA, National Agricultural Statistics Service.

Special Article: U.S. Ethanol Market 2021 Summary and Focus on Operating Margins

Steven Ramsey
Michael McConnell

U.S. Ethanol Production Trends Prior to 2021

The U.S. ethanol market in 2021 showed a continued recovery in operating margins, despite high prices for feedstock, based on a continued recovery in gasoline demand. Dynamic market fundamentals for ethanol resulted in swings in production during the 2021 calendar year, as the U.S. corn market transitioned from the 2020/21 market year to the 2021/22 market year. Analyzing and evaluating these dynamics not only helps understand the past, but also helps identify the major drivers likely to influence the U.S. ethanol market in 2022 and beyond.

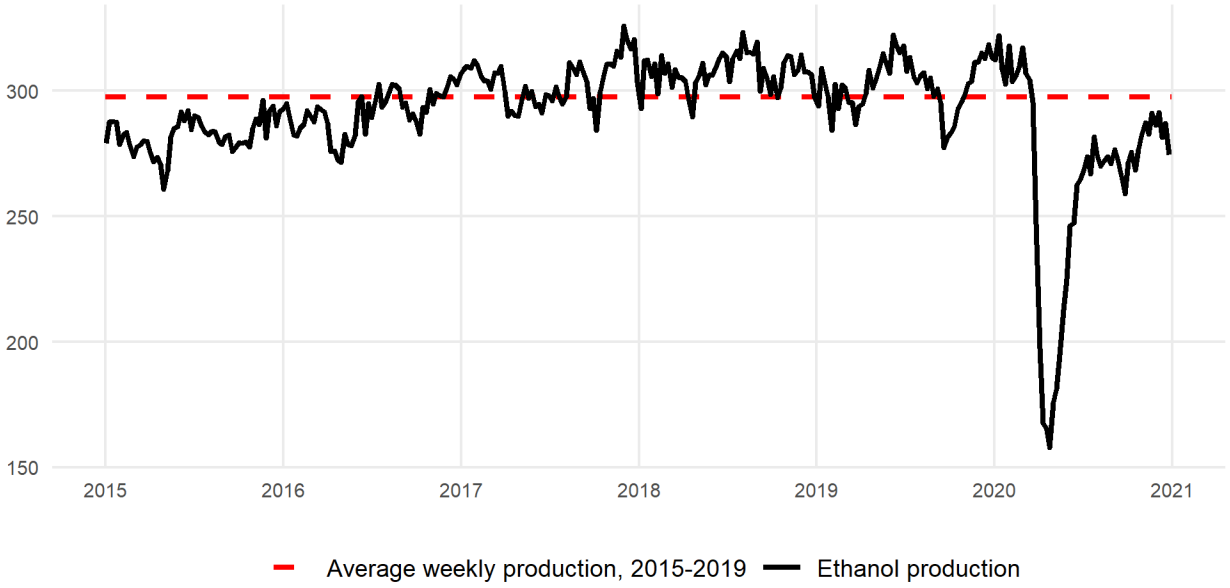
The U.S. ethanol market contended with a major shock in 2020 (stemming from COVID-19), after nearly a decade of growth that began with the implementation of the 2005 and 2007 Renewable Fuel Standard (RFS). During the 2015–2019 period, weekly U.S. ethanol production saw a slight upward trend from 2015 through 2016, before leveling off around the period average of 297 million gallons per week[1]. The first 12 weeks of 2020 saw average production slightly above the 2015–2019 average at 309 million gallons per week. However, with the onset of COVID-19-induced lockdown measures and other social distancing efforts, weekly ethanol production fell for the next 5 weeks, before bottoming out at 158 million gallons in late April of 2020. From there, ethanol production would go on to increase for the next 11 weeks to reach 274 million gallons in late June. Production continued to follow a mostly upward trend for the rest of 2020, averaging 277 million gallons per week.

[1] Data are from the U.S. Department of Energy, Energy Information Administration. Raw data are provided weekly and in units of 1,000 barrels per day. Total gallons for the week were calculated by multiplying the raw data by 7 (days per week), by 42 (gallons per barrel), and by 1,000 (units of 1,000 barrels per day).

Figure SA1

U.S. oxygenate plant production of fuel ethanol

Million gallons



Source: U.S. Department of Energy, Energy Information Administration.

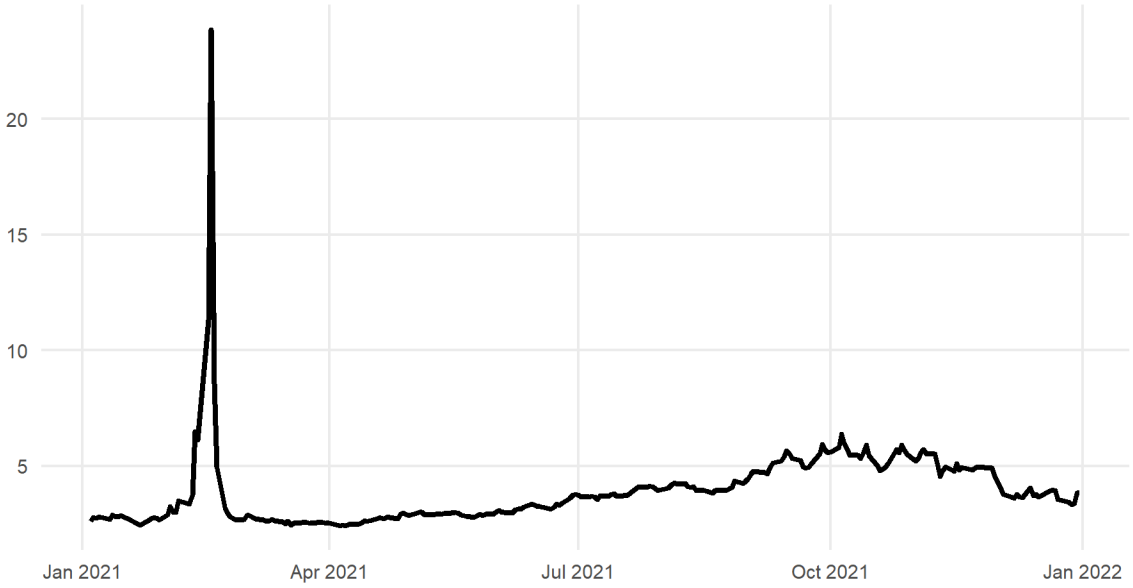
Higher Margins Help Push Production to Pre-COVID-19 Levels

Ethanol production began 2021 at the same pace as the second half of 2020, averaging 276 million gallons per week over the first 8 weeks. However, production slipped to 268 million gallons in the second week of February and then to a calendar-year low of 193 million gallons in the third week. This drop has been attributed to both extreme-cold weather throughout the United States (Hill & Shi, 2021) and widespread power grid failures in some regions of the Midwest. The weather and power infrastructure conditions led to a spike in natural gas prices (an input into ethanol production) from $3.76 per million British thermal units (btu) on February 10th to $23.86 per million btu on February 17th. As a result, some ethanol producers sold natural gas back to the market, rather than using it to produce ethanol (Hill & Shi, 2021). This impact, however, was not as severe as the impact of the 2020 COVID-19 induced drop and was also more transitory, with production increasing to 250 million gallons by the end of February and back to 276 million gallons in the first week of March.

Figure SA2

Henry Hub natural gas spot price, daily

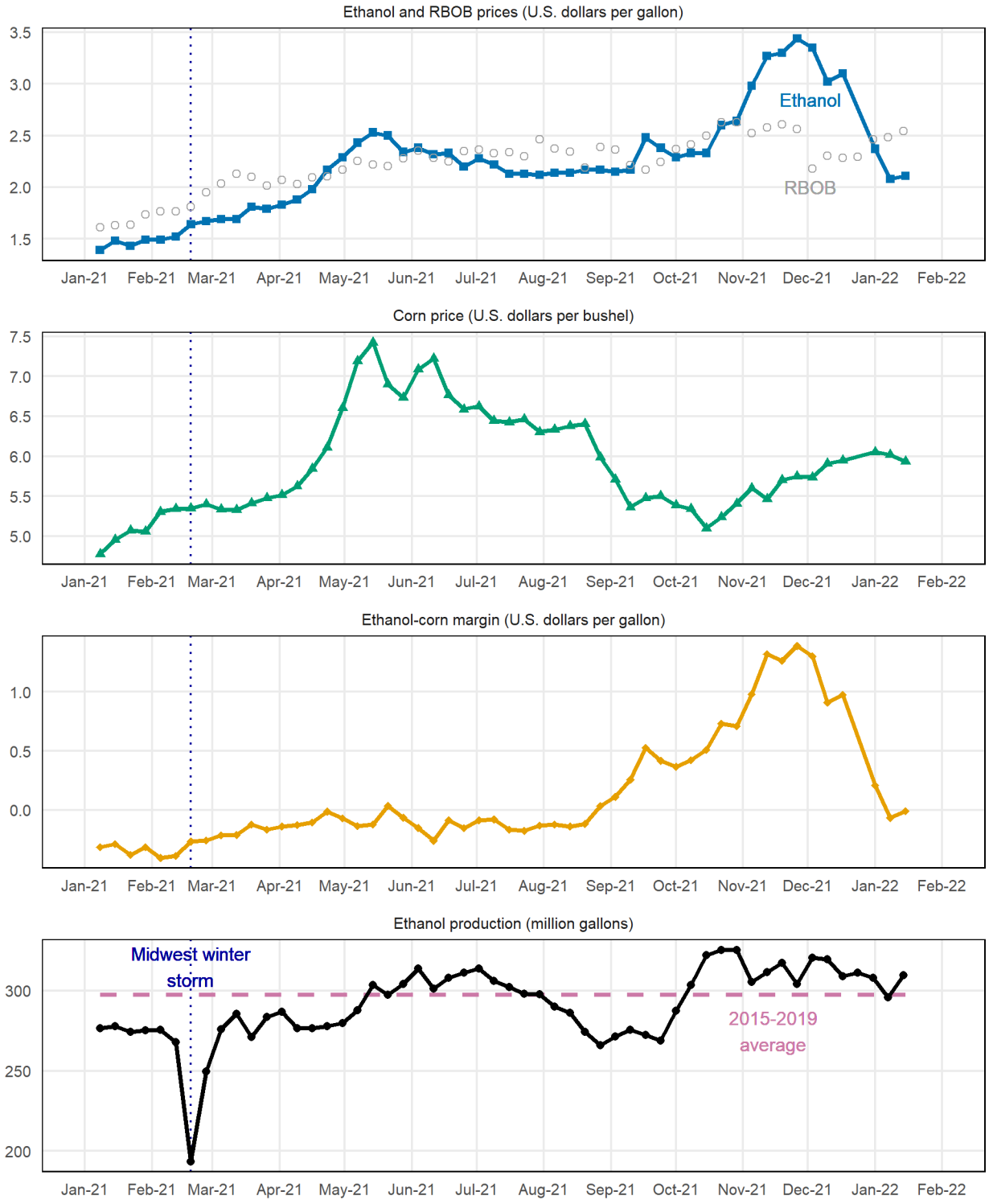
U.S. dollars per million British thermal units



Note: The Henry Hub is a natural gas pipeline in Erath, Louisiana and is the official delivery point for natural gas futures.
Source: U.S. Department of Energy, Energy Information Administration.

Figure SA3

West Iowa corn prices, ethanol prices, ethanol-corn margin, Los Angeles reformulated RBOB prices, and U.S. oxygenate plant production of fuel ethanol



Note: RBOB = Reformulated Gasoline Blendstock for Oxygenate Blending. Los Angeles prices are tracked because Los Angeles is a major market for reformulated gasoline, for which RBOB is a component.
Source: U.S. Department of Agriculture, Agricultural Marketing Service and U.S. Department of Energy, Energy Information Administration.

Ethanol production levels are influenced by operating margins—revenues minus operating costs. A proxy for these margins is the ethanol-corn margin, which is the price per gallon of ethanol minus the corn cost per gallon of ethanol. Other factors affect operating margins, such as the revenue generated from co-products like corn oil and dried distillers' grains, as well as the prices of both natural gas and electricity. Comparing the ethanol-corn margin, however, is a good illustration of the main market factors affecting the profitability for ethanol-producing dry mills in the United States.

The ethanol-corn margin and ethanol production saw similar movements from March to September of 2021, with both seeing an upward trend, followed by a downward trend. For the ethanol-corn margin, the upward trend saw margins in Western Iowa increase from -$0.22 per gallon in the first week of March to $0.04 per gallon in late May. Though both ethanol and corn prices were increasing during this period, the price of ethanol was rising slightly faster than the cost of corn. Ethanol production, meanwhile, increased in 9 of 13 weeks from the second week of March through the first week of June. Production would surpass the 2015–2019 average production (297 million gallons per week) in mid-May, marking the first time that production had surpassed this level since mid-March of 2020.

After reaching $0.04 per gallon in the third week of May, the corn-ethanol margin fell for the next 3 weeks and landed at -$0.26 per gallon in the second week of June, as limited availability of corn in the U.S. market propped up cash prices. Margins would remain between -$0.08 and -$0.18 through the third week of August, which preceded the 2021 corn harvest. Lagging behind margins, ethanol production would begin its downward trend, after hitting 314 million gallons in the first week of July. After this peak, production fell for 8 consecutive weeks to 266 million gallons in the last week of August.

Ethanol-corn margins saw a second—and more pronounced—upward trend beginning in mid-August. After hitting -$0.14 per gallon in the second week of August, margins increased in 11 of the next 15 weeks, to hit $1.39 per gallon in the last week of November. This was caused by both increasing ethanol prices and decreasing corn prices, due to increased supplies in most corn markets. In turn, ethanol production also saw a pronounced increase of 20 percent in just 3 weeks, going from 269 million gallons in the last week of September to 322 million gallons by mid-October. Two weeks later, production saw its highest level of the year at 325 million gallons.

Ethanol prices did not remain at the elevated levels, falling from more than $3.40 per gallon in late November to less than $2.40 during the 2021 holiday season. Gasoline prices also fell, with

the benchmark Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB) price falling from above $2.60 per gallon on October 29, 2021, to below $2.20 by December 3. While ethanol prices held an uncharacteristically high premium to the RBOB for a short period of time in late 2021, ethanol prices eventually followed gasoline price trends heading into 2022. Likewise, ethanol-corn margins fell faster than they rose, beginning in late November. Margins were negative again in early January 2022, after just 6 weeks from hitting a calendar-year high. Ethanol production would begin to trend downward beginning in November, though this trend has been much less extreme than its margin counterpart.

Volatile Global Markets Influence 2022 U.S. Ethanol Market

Since the Russian army invaded Ukraine on February 24, 2022, global agricultural and energy commodity markets have seen substantial price increases and increased volatility. Some important factors in determining both U.S. ethanol production in 2022 and the derived demand for corn as an energy feedstock include: Increased energy costs, higher gasoline prices and the subsequent impacts on U.S. gasoline consumption, and the potential demand from export markets. However, operating margins will likely continue to be the key metric that captures all these factors and provides a useful indicator for the market outlook.

Special Article References

Hill, S., & Shi, E. (2021). *Extreme winter weather event in Texas reduced fuel ethanol production in February,* U.S. Department of Energy, Energy Information Administration.

McConnell, Michael, Olga Liefert, Tom Capehart and Steven Ramsey, *Feed Outlook: March 2021*, FDS-21c, U.S. Department of Agriculture, Economic Research Service, March 11, 2021.

International Outlook

Olga Liefert
Angelica Williams

Russian Invasion Continues to Rattle Global Grain Markets

The Russian military invasion into ***Ukraine*** continues to be the chief factor affecting global grain trade. The conflict involves two major grain-producing and exporting countries, and thereby drives up uncertainty concerning world agricultural supply and demand. Recent information and developments have been incorporated into an initial assessment of the consequences of the crisis and were presented in the March report.

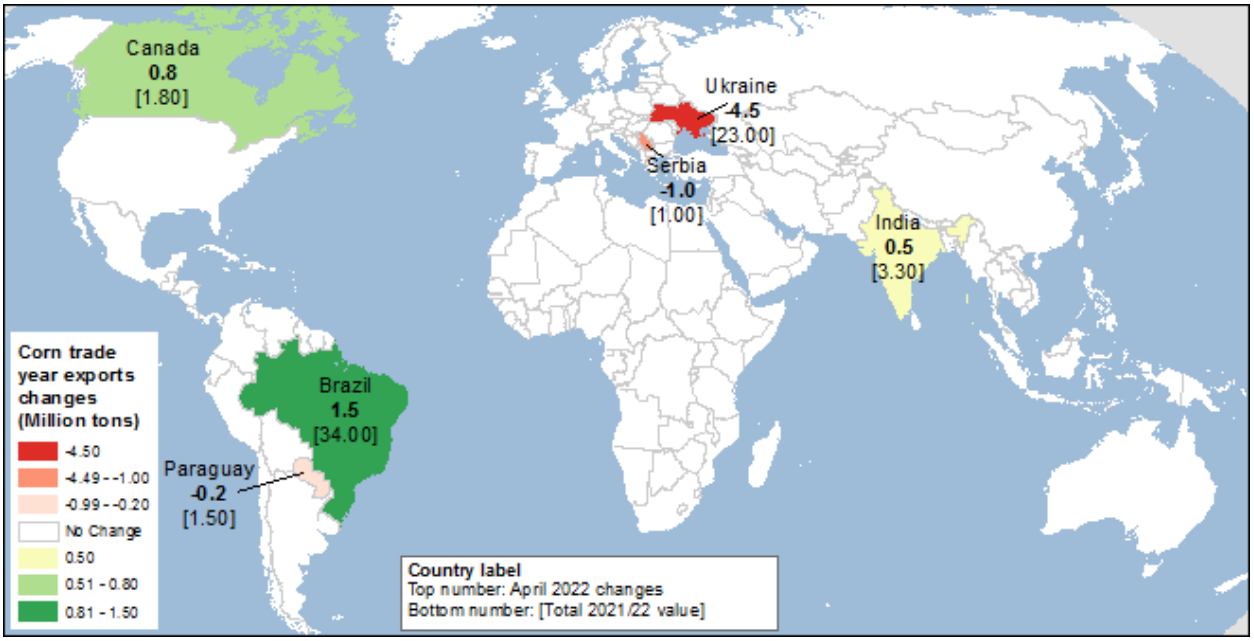
For a second month in a row, ***Ukrainian*** corn exports are sharply reduced, down 4.5-million-tons to reach 23 million. Since the beginning of the invasion in February, the projections for Ukrainian corn exports have dropped by 10.5 million tons, or about 30 percent. From October 2021 through the end of February 2022, with another 7 months to go before the end of this trade year—Ukraine exported 17.4 million tons of corn. The Russians are currently blockading Ukraine's Black Sea ports, the major export route for Ukrainian grain, and the insurers labeled Black Sea waters as "high risk." Ukraine is consequently trying to transport grain exports by rail to Europe and ship it through the ports of neighboring countries. This alternative could allow some additional exports, although the costs of Ukrainian grain will be higher, reducing its price-competitiveness.

Another reduction of corn exports is projected for ***Serbia***—down 1 million tons, or 50 percent, to 1 million—following the country's temporary ban on the export of wheat, corn, and other commodities in an attempt to stabilize prices and ensure sufficient domestic supplies in the current high-price environment. Corn exports from ***Paraguay*** are also projected lower this month, down 0.2 million tons, reflecting low supplies and the reduced pace of shipments.

These reductions are projected to be partly offset by higher exports of the other corn suppliers—***Brazil***, ***Canada***, and ***India***—for a total of 2.8 million tons. However, these increases are not expected to make up for the lost Ukrainian exports, such that global corn trade for the October-September 2021/22 international trade year is projected to drop by 2.9 million tons this month, to still a record-high of 189.7 million.

See a visual display of this month's country changes in corn exports and imports in map A below.

Map A – Corn trade year (TY) exports changes for 2021/22, April 2022



Source: USDA, Foreign Agricultural Service, *Production, Supply, and Distribution* database.

The reduction in global corn trade, combined with the fairly low level of global corn stocks in the major exporting countries (except for Ukraine, where lower exports generate excessively large stocks) and geopolitical volatility, drive grain prices higher. Moreover, although prices for major commodities softened over the last several weeks from their peak reached in the beginning of March, high corn prices are likely to persist until the market gets more indications about production propsects in major northern hemisphere producing countries.

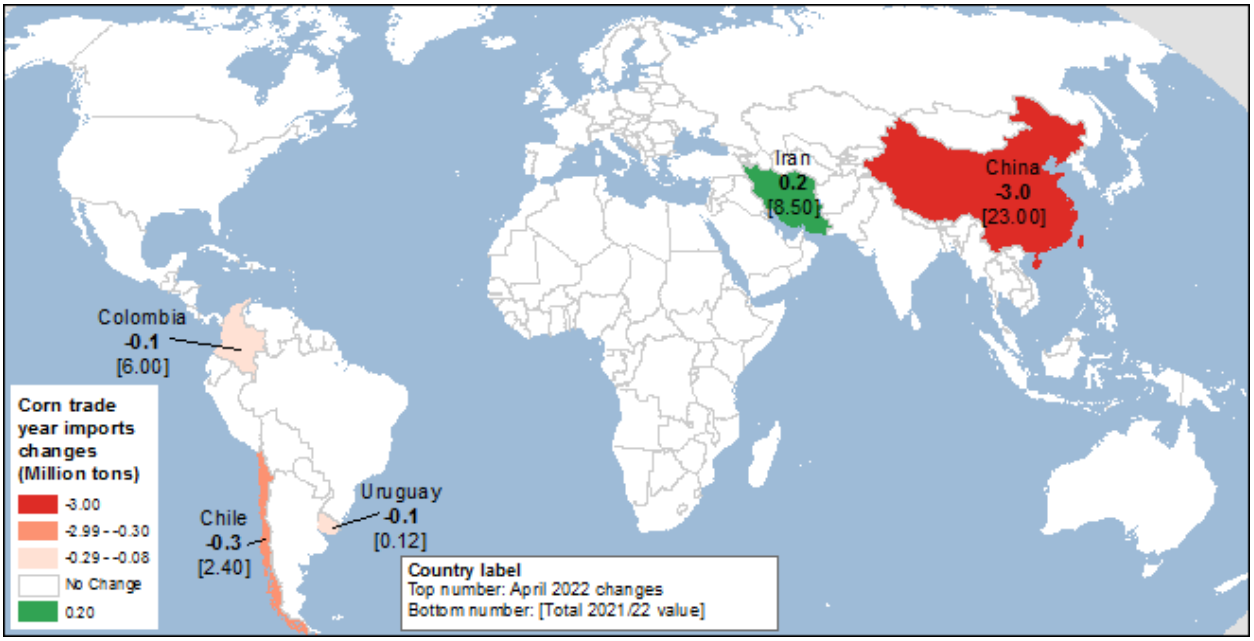
Higher prices are expected to ration demand for grain and reduce grain imports in a number of countries.

Before the war, ***China*** was the primary destination for Ukrainian corn exports. A year ago, in October-September of 2020/21, ***Ukraine*** exported—despite weather-related low production and yields—more than 8.5 million tons of corn to China. This year (2021/22), Ukraine enjoyed a bumper harvest and was expected to export—to the world and to China in particular—10 million tons more corn than a year ago. Since October 2021 and through the end of February 2022, Ukraine exported 3.7 million tons of corn to China, on par with the same period a year before. Current expectations are that other exporters eligible to ship to China will not be able to fully replace the drop in Ukraine's exports. The projection for China's corn imports is thereby revised lower, down 3.0 million tons this month to reach 23 million tons. Corn imports are also adjusted down for **Chile** and ***Columbia,*** based on the pace of trade. For ***Bangladesh***, imports are also revised down, but only for the local marketing year that ends in April 2021. Imports are projected

higher for ***Iran,*** to reflect a new barter agreement with ***Brazil*** (Iranian fertilizer to be bartered for Brazilian corn).

For a visual display of the changes in corn imports, see map B below.

Map B – Corn trade year (TY) imports changes for 2021/22, April 2022



Source: USDA, Foreign Agricultural Service, *Production, Supply, and Distribution* database.

World Coarse Grain Production Prospects Are Slightly Up

Global **2021/22** coarse grain production is projected 2.7 million tons higher this month to 1,501.6 million. An increased forecast for corn production in ***Brazil***, the ***European Union***, ***Pakistan***, and ***Indonesia*** more than offsets reductions in barley and oats output for the ***European Union*** and ***Tunisia***. ***U.S.*** coarse grain production for 2021/22 remains unchanged this month.

Brazil's corn production is projected 2 million tons higher this month to reach a record-high of 116 million tons. As planting for the second-crop corn is virtually over, area under corn is projected 0.3 million hectares higher this month, more than 5 percent larger than last year. Second-crop corn has not yet entered the critical stage of the reproductive period, therefore corn yield projections remain at trend levels this month.

For the previous marketing year of **2020/21**, corn production for **Argentina** is revised 0.5 million tons higher to a total of 52 million tons. Exports and domestic use assumptions for

2020/21 indicate that corn output in Argentina exceeded previous estimates. It appears that both corn harvested area and yields were slightly higher than previously expected.

Information, details, and specific causes of the revisions of this month's changes in coarse grain production are given in tables A1 and A2 below. The changes in the total global, foreign, and U.S. coarse grain production by type of grain are shown in table A1, while changes in coarse grain production by country and by the type of grain are given in table A2.

Table A1 - World and U.S. coarse grain production at a glance (2021/22), April 2022

	Region or country	Production	Change from previous month[1,3]	YoY Change[2,3]	Comments
		Million tons			
Coarse grain production (total)					
↓	**World**	**1,501.6**	**+2.7**	**+65.0**	
↓	**Foreign**	**1102.9**	**+2.7**	**+39.1**	Small changes are made for a number of countries and commodities. See table A2.
	United States	**398.7**	**No change**	**+25.8**	See section on U.S. domestic output.
World production of coarse grains by type of grain					
CORN					
↑	**World**	**1,210.5**	**+4.3**	**+84.6**	
↑	**Foreign**	**826.5**	**+4.3**	**+59.1**	Higher production is projected for Brazil, European Union, Indonesia, and Pakistan. See Table A2.
	United States	**383.9**	**No change**	**25.5**	See section on U.S. domestic output.
BARLEY					
↓	**World**	**145.1**	**-1.0**	**-15.0**	
↓	**Foreign**	**142.5**	**-1.0**	**-13.8**	Lower projected output in European Union and Tunisia. See table A2.
	United States	**2.6**	**No change**	**-1.2**	See section on U.S. domestic output.
OATS					
↓	**World**	**22.2**	**-0.5**	**-3.3**	
↓	**Foreign**	**21.6**	**-0.5**	**-2.9**	Lower production is projected in European Union, specifically Sweden and Finland. See table A2.
	United States	**0.6**	**No change**	**-0.4**	See section on U.S. domestic output.

[1]Change from previous month. [2]YoY: year-over-year changes. [3] Totals may not add due to rounding.

For changes and notes by country, see table A2.

Source: USDA, Foreign Agricultural Service, *Production, Supply and Distribution* database.

Table A2 - Coarse grain foreign production for 2021/22 at a glance, April 2022						
	Type of crop	Crop year	Production	Change in forecast[1]	YoY[2] change	Comments
			Million tons			
Coarse grain production by country and by type of grain						
BRAZIL						
↑	**Corn**	*Mar-Feb*	**116.0**	**+2.0**	**+29.0**	Higher projected second-crop (safrinha) corn area, with planting virtually completed. Second-crop area is projected more than 5 percent higher, relative to last year. Corn yields are unchanged.
EUROPEAN UNIION						
↑	**Corn**	*Oct-Sep*	**70.5**	**+0.7**	**+3.4**	Corn prospects are improved mainly due to higher area and yields reported in Romania, Germany, and Czech Republic.
↓	**Barley**	*Jul-Jun*	**52.0**	**-0.8**	**-2.4**	Barley production is reduced, due to lower projections for Sweden and Finland, which is partly offset by higher Romanian output.
↓	**Oats**	*Jul-Jun*	**7.6**	**-0.5**	**-0.8**	Reduced production in Finland and Sweden.
PAKISTAN						
↑	**Corn**	*Jul-Jun*	**8.3**	**+0.7**	**-0.6**	Corn prospects improved due to higher yields, based on preliminary Pakistan official statistics. Production revisions are also made for 2 previous years.
INDONESIA						
↑	**Corn**	*Oct-Sep*	**12.7**	**+0.7**	**+0.1**	Increased corn area, reflecting higher price for corn relative to rice.
COLOMBIA						
↑	**Corn**	*Oct-Sep*	**1.6**	**+0.1**	**+0.1**	Slightly higher projected yields. Corn area, yield, and production data are also revised for 5 previous years.
TUNISIA						
↓	**Barley**	*Jul-Jun*	**0.4**	**-0.2**	**Fractional**	Harvested barley area is projected lower.

[1]Change from previous month. Smaller changes are made for several countries.

[2] YoY: year-over-year changes.

Source: USDA, Foreign Agricultural Service, *Production, Supply and Distribution* database.

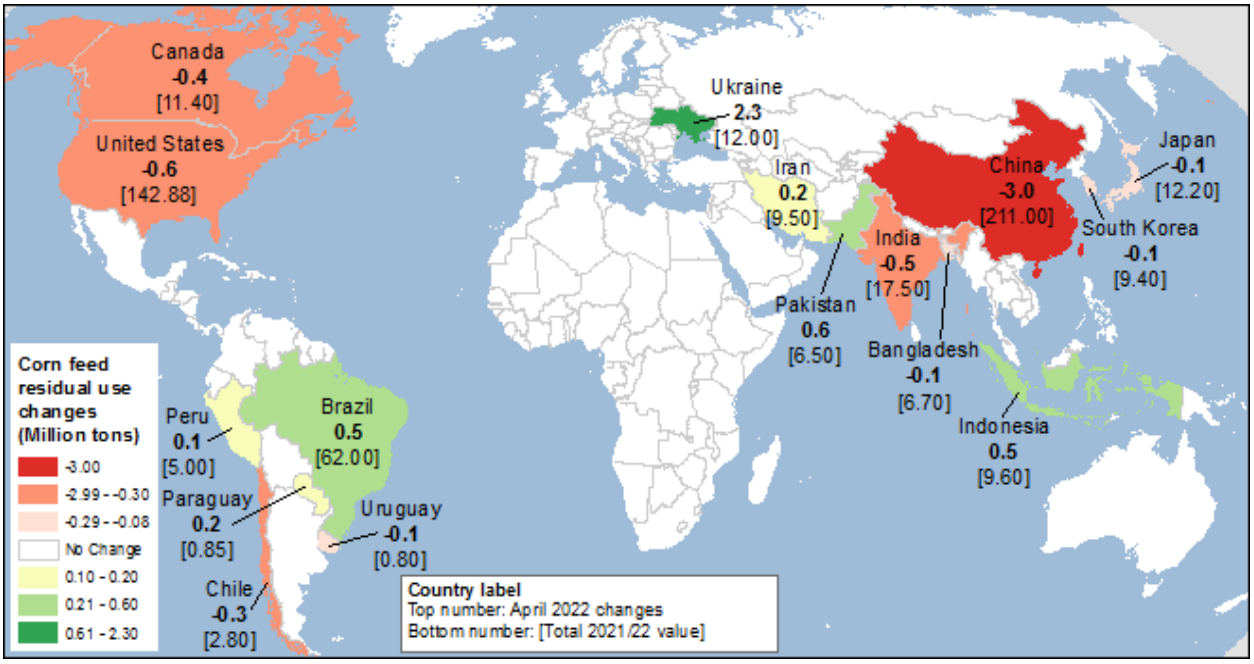
Feed Use Projected Lower, Stocks Are Higher This Month

Global use of coarse grain in 2019/20 is projected slightly up, while feed and residual use is projected lower, down 0.8 million tons this month.

The major changes in feed and residual consumption this month reflect the war-related re-apportioning of traded grain and are largely offsetting. Lower projected exports mean more corn will remain in ***Ukraine***. Without any additional knowledge about the level of destruction of elevators and corn supplies in Ukraine, last month's assumption is applied again: Half of this grain is projected not to be exported at any time in the future, as some supplies are either destroyed or have become unfit to use, increasing the residual part of the feed and residual category. The rest of this corn is projected to be stocked and probably exported or used domestically in the future. On the other hand, reduced corn imports by ***China*** imply lower corn feed use in this country, although it is still record-high and 4 percent ahead year over year. Corn

feed and residual use is also revised for a number of countries. See a visual display of this month's changes in map C below.

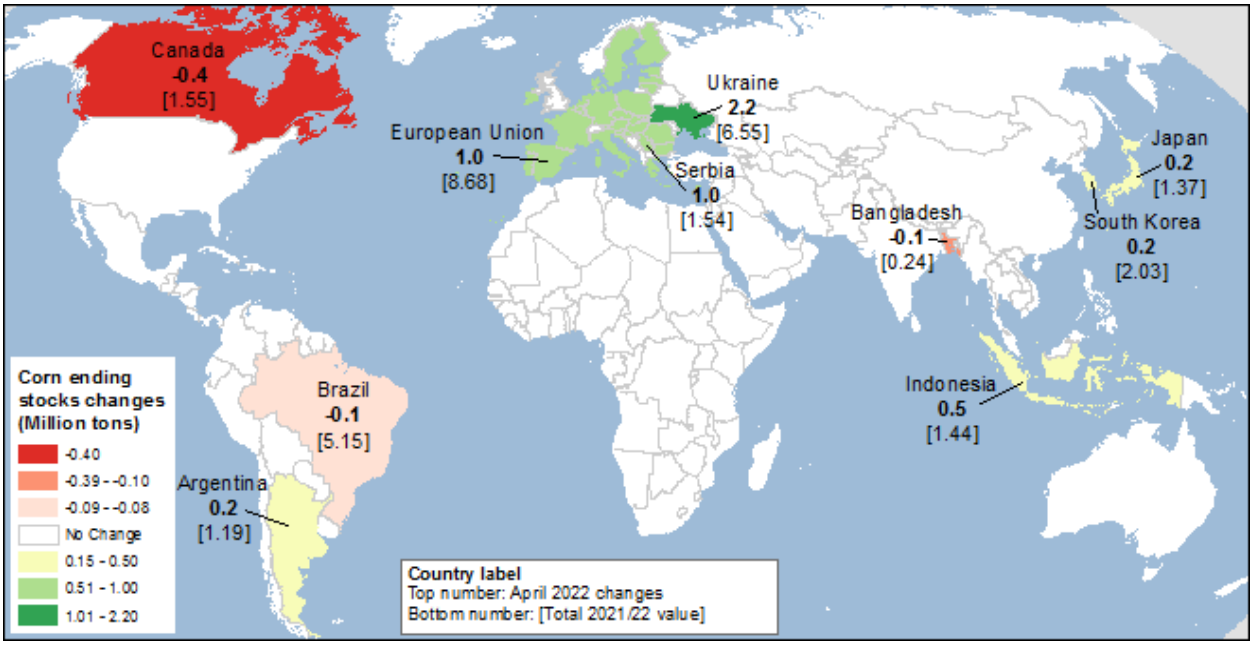
Map C – Corn feed and residual use changes for 2021/22, April 2022



Source: USDA, Foreign Agricultural Service, *Production, Supply, and Distribution* database.

As growth in global corn supplies more than offsets slightly higher use, the projection for global ending corn stocks is increased. World 2021/22 corn grain ending stocks are forecast 4.5 million tons higher than the March projection, to reach 305.5 million. About half of this increase—2.2 million tons—comes from **Ukraine** and another 1.0 million tons from ***Serbia***, because of the Serbian corn export ban. Multiple, partly offsetting changes are made for stocks for a number of countries following production, use, and trade changes. See a visual display of this month's changes in ending stocks in map D below.

Map D – Corn ending stocks changes for 2021/22, April 2022



Source: USDA, Foreign Agricultural Service, *Production, Supply, and Distribution* database.

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