

## THE QUARTERLY

*Dedicated to the industries  
financed by CoBank*

January 2022

# Omicron Upends Supply Chain Recovery

**With cases surging and workers out sick,  
rural industries are scrambling to minimize disruption.**

### **Executive Summary**

Against all hope for a better start to 2022, omicron has crashed the New Year's party. Renewed supply chain disruptions are being felt throughout the economy, causing empty shelves again and threatening to fan the flames of inflation. Effects from the omicron variant should be short-lived relative to delta, but it will be several more weeks before the impact of sick workers passes.

Amidst this persistent COVID gloom, the economic backdrop is bright. Consumers continue to spend and workers are re-entering the labor pool. But as the economy marches on, so does elevated inflation, and the Fed is now determined to get prices under control. The first interest rate hike is likely to come in March, and much more monetary tightening is likely to follow.

The agricultural sector will battle through familiar challenges in coming weeks, as persistent labor challenges become acute. Dairy and animal protein processors will try to minimize production slowdowns, and farm input retailers will scramble to build inventory before spring field work begins. Fortunately, most of agriculture is facing these disruptions from a position of price and margin strength.

The communications sector is actively rolling out billions of dollars in new rural broadband spending, and the power sector is grappling with higher energy costs as the messy conversion to renewable energy sources continues. Across rural America, 2022 begins with significant challenges, but also with potential for substantial upside. ■

### **Topics In this Issue:**

- *Fed Monetary Policy Replaces COVID as Economic Wild Card*
- *Back to \$6 Corn and \$13 Beans*
- *Fuel Volatility Returns in an Age of Renewables*

*This quarterly update is prepared by the Knowledge Exchange division and cover the key industries served by CoBank, including the agricultural markets and the rural infrastructure industries.*

## Inside this issue

- **SPOTLIGHT** ..... 3

*Yes Omicron, but there are Reasons for Optimism*  
By Dan Kowalski
- **MACRO ECONOMIC OUTLOOK**..... 4

*Fed Monetary Policy Replaces COVID as Economic Wild Card*  
By Dan Kowalski
- **GRAINS**.....6

*Back to \$6 Corn and \$13 Beans*  
By Kenneth Scott Zuckerberg
- **FARM SUPPLY** ..... 8

*2021 Finishes Strong but Inflation, Input Uncertainty Lie Ahead*  
By Kenneth Scott Zuckerberg
- **BIOFUELS** ..... 9

*Good Ethanol Times Are Here Again (for Now)*  
By Kenneth Scott Zuckerberg
- **ANIMAL PROTEIN** ..... 10

*Strong Demand Bolsters Prices as Supply Constraints Persist*  
By Brian Earnest
- **DAIRY** ..... 14

*Dairy Product Prices Climb to Multi-Year Highs as Milk Collections Fall*  
By Tanner Ehmke
- **COTTON, RICE AND SUGAR** ..... 16

*Cotton Prices Withstand Omicron Surge*  
By Rob Fox and Tanner Ehmke
- **SPECIALTY CROPS**..... 18

*Specialty Crops PPI Jumps Higher on Smaller Harvests*  
By Tanner Ehmke
- **POWER, ENERGY AND WATER** ..... 20

*Fuel Volatility Returns in an Age of Renewables*  
By Teri Viswanath
- **COMMUNICATIONS** ..... 22

*Bipartisan Support Brings Unprecedented Digital Financial Aid to Rural America*  
By Jeff Johnston

# SPOTLIGHT

## Yes Omicron, but there are Reasons for Optimism



By Dan Kowalski

**In December, data and anecdotes were looking more and more like supply chain disruptions may be peaking.** Just a week into the New

Year, those indicators now look like a head fake. Omicron is everywhere and the

impacts are being felt along much of the agri-food supply chain. Farm inputs are still difficult to source, transportation rates remain sky high, and empty shelves are re-emerging at grocery stores. It would be easy to survey the landscape and think that supply chain dysfunction is at a pandemic high. We believe better days are not far off, and are therefore more optimistic.

Yes, omicron is sidelining a lot of workers throughout the economy. The COVID positivity rate in several major cities is now 25%-30%. The near-term effects of this surge on the agribusiness and food supply chains are irrefutably challenging. But if omicron follows the same trajectory in the U.S. that it has in South Africa, cases will peak later in January and fall just as fast as they rose. That would make for a much shorter wave, albeit with much higher case numbers.

Until the surge subsides, the biggest economic risk will be the millions of people who call out sick and hamper already beleaguered supply chains. Impacts for food and agriculture will vary significantly by product, but we know processors, grocers, and restaurants will struggle to keep operations running normally.

Amidst all of this, there are reasons to be sanguine. First, reductions in meat and poultry production have thus far been relatively modest. The ripple effects from major drop-offs in 2020 animal slaughter are still being felt today, and in part, led to President Biden's promise of \$1 billion to be funded to smaller packers.

Second, agricultural exporters are getting help in Oakland. Researchers at UC Davis estimate that in mid-to-late 2021, 80% of inbound containers from Asia to the U.S. were sent back empty. The loss of this critical backhaul has left billions of dollars of ag exports stranded at the three most important container and refrigerated ports in California. While this problem is far from solved, last week the Oakland terminal announced it will open a new container yard dedicated to agricultural goods. This should ease some of the port congestion for ag exporters, even though it may have limited effect enticing vessels to load the outbound containers.

Finally, the supply chain picture looks a bit rosier due to more workers in warehousing and transportation. Since May 2020, the U.S. has added 800,000 jobs in the two sectors, eclipsing the pre-COVID number of jobs by 3%. Sick workers will slow the transport of food goods for a few weeks, but as the omicron surge subsides, the rebuilt workforce will recommence making steady improvements. ■

# MACRO ECONOMIC OUTLOOK

## Fed Monetary Policy Replaces COVID as Economic Wild Card



By Dan Kowalski

**Despite another surge in COVID cases and the accompanying complications, the U.S. economy continues to shine.** Workers are steadily returning to the labor force, the unemployment rate is now under 4%, and consumers are still spending confidently. Omicron will dent Q1 GDP, but we expect a healthy bounce in Q2, and for the economy to remain on track for 4% growth in 2022. This is of course our base case, and as described below, the risks to our forecast remain higher than usual.

As of late December, we have now regained 84% of the jobs lost since the pandemic began, equating to 3.6 million fewer workers than early 2020. But it's estimated that more than 2 million people took early retirement and will not return. With that consideration, the labor market is inching closer to full employment, and removing any last arguments for the Fed to maintain its highly accommodative monetary policy.

Inflation and the Fed's counteracting policy decisions will have outsized influence on the economy going forward. Recent FOMC minutes and public comments from Fed presidents point to a demonstrable hawkish pivot, and we do not expect the omicron variant to divert the Fed from its newfound path. It is becoming increasingly likely that the Fed will begin rate liftoff at its March FOMC meeting, just as its securities purchases wind down. The market is now overwhelmingly expecting three or even four 25 basis point hikes in 2022, but depending on the level of inflation, we could see the

**1** We expect the economy to remain on track for 4% growth in 2022 but risks to our forecast remain higher than usual.

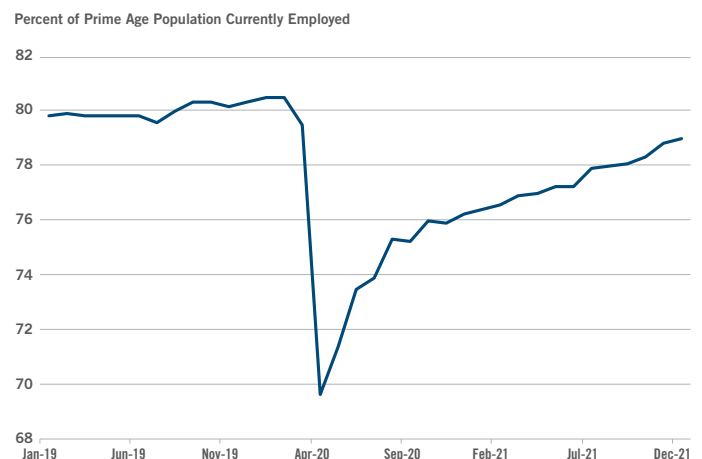
**2** Inflation and the Fed's counteracting policy decisions will have outsized influence on the economy.

EXHIBIT 1: U.S. Dollar Index



Source: Wall Street Journal

EXHIBIT 2: Prime Age (25-54) Employment-to-Population Ratio



Source: U.S. Bureau of Labor Statistics

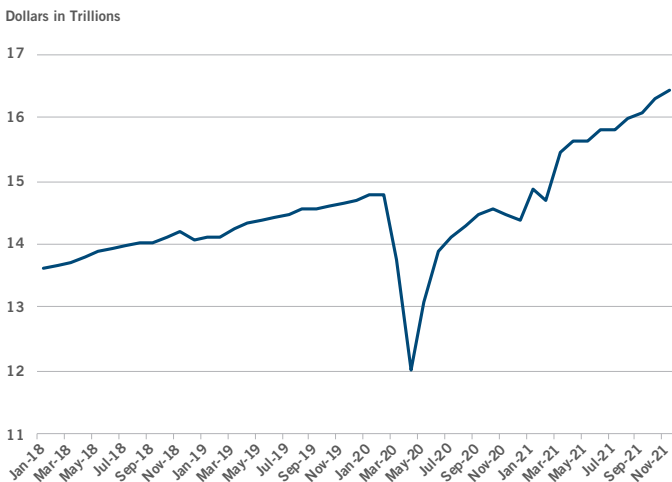
Fed act more aggressively through Q2 and Q3. If inflation is still raging by late spring, the Fed could shift to a 50 basis point hike and/or begin to trim its record large \$8.8 trillion balance sheet.

With the market now anticipating a sea change in monetary policy, the tightening of financial conditions has begun. U.S. Treasury rates have started the year moving substantively higher, steepening the yield curve as some key rate spreads have widened. Given the outlook, this trend of rising rates along the curve should continue. The Fed is also expected to tighten more quickly than central banks in Europe, Japan, and other large economies, which will support upward pressure on the U.S. dollar.

Economic risks from new, damaging virus variants will remain through the remainder of 2022. But Americans are increasingly making peace with the notion that the virus, in some form, will be with us for months if not years, and we must find a way to live more normally with it. This shifting mindset will de-risk the economy to some degree. The new, increasing risk, however, will be the potential for a monetary policy error by the Fed. Tightening too quickly in Q2 and Q3 risks a loss in economic momentum and potentially a recession in 2023. The Fed's decision making will therefore replace the virus as the leading economic wild card after Q1. ■

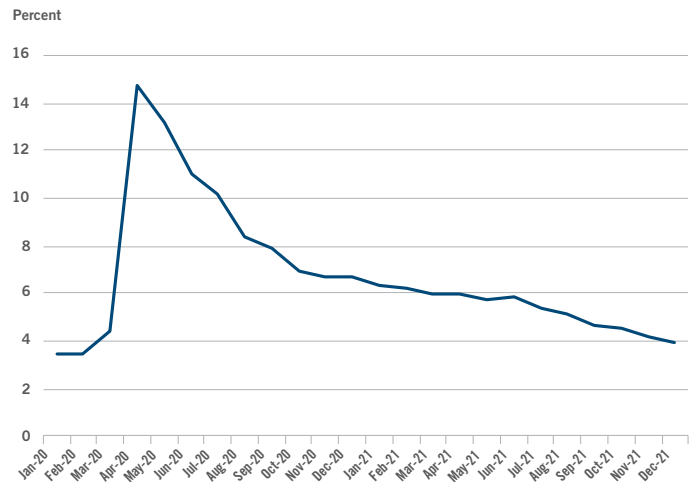
**3** With the market now anticipating a sea change in monetary policy, the **tightening of financial conditions has begun.**

**EXHIBIT 3: Personal Consumption Expenditures**



Source: U.S. Bureau of Economic Analysis

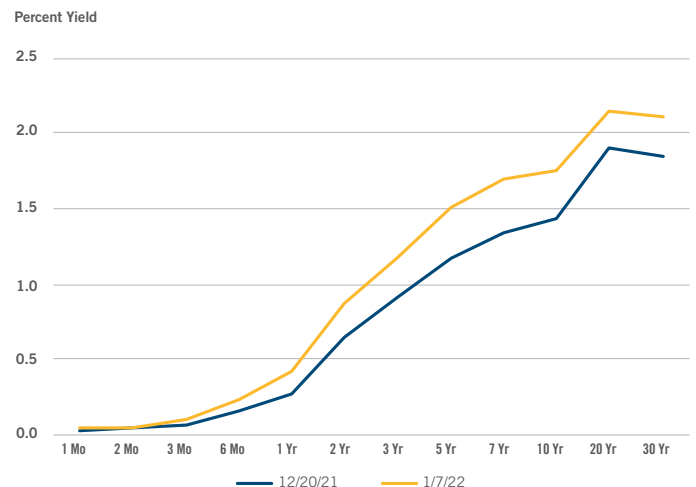
**EXHIBIT 4: U-3 Unemployment Rate**



Source: U.S. Bureau of Labor Statistics

U-3 is one of six alternate measures of unemployment and is considered the "official" unemployment rate. U-3 is a measure of people who are without jobs and have actively looked for work within the past four weeks.

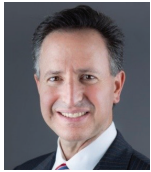
**EXHIBIT 5: U.S. Treasury Yield Curve**



Source: U.S. Department of the Treasury

# GRAINS

## Back to \$6 Corn and \$13 Beans



By Kenneth Scott Zuckeberg

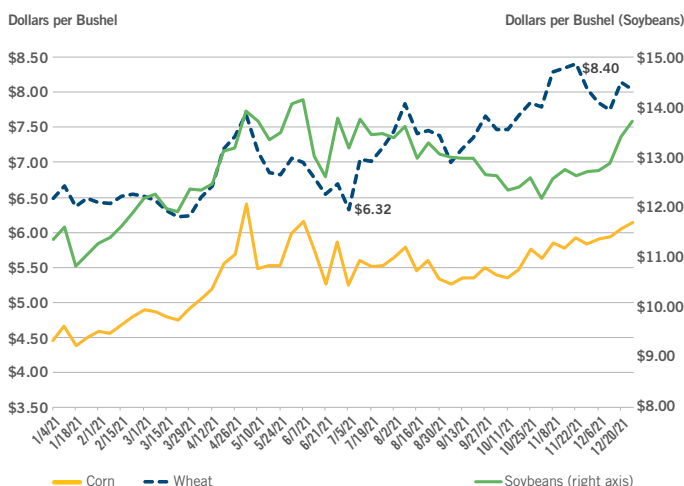
**Corn and soybean futures prices traded higher in the quarter and touched six-month highs as December came to a close.** At least three factors have driven the positive performance: reduced crop production and yield expectations in Argentina and Brazil due to continued dry conditions, robust corn demand by U.S. ethanol operators that have increased production to pre-COVID levels amidst strong profit margins, and speculation

that U.S. yields for the 2022 planting season will fall short. Reduced fertilizer applications (due to record high prices) and shortages of crop protection chemicals sourced from China and India are behind that speculation.

Wheat prices are marching to a different drummer. While March 2022 futures for wheat have appreciated modestly in the quarter, the futures contracts fell in late December on profit-taking, presumably fueled by a bearish backdrop of weak exports. Perhaps the more correct interpretation is that wheat was due for a pullback after a six month “bull run” driven by drought, increased global consumer demand and the corresponding drop in stocks-to-use ratios. We would note that further price gains are at risk because without the protection of snowpack, the U.S. winter wheat crop has potential for winterkill from cold arctic air.

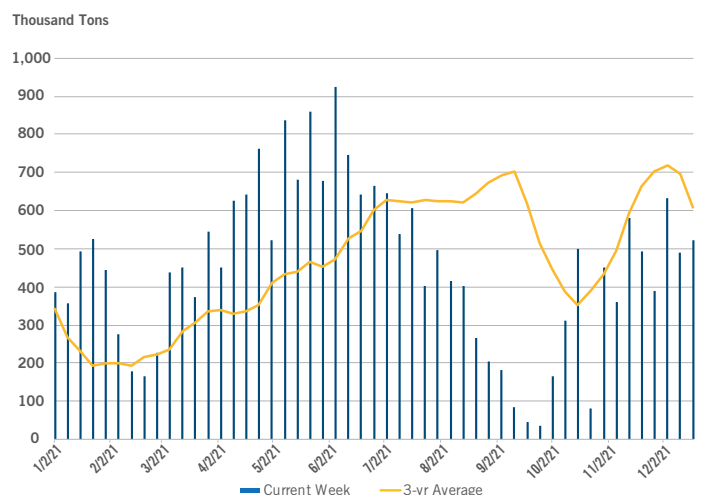
**1** Reduced crop expectations in South America and steady demand by U.S. ethanol producers pushed corn and soybean prices to six-month highs late in Q4.

EXHIBIT 1: Weekly Grain Prices



Source: Barchart.com (12/27/21)

EXHIBIT 2: Grain Barge Movements Through the Mississippi River Granite City, IL



Source: USDA-AMS, Grain Transportation Report (12/23/21)

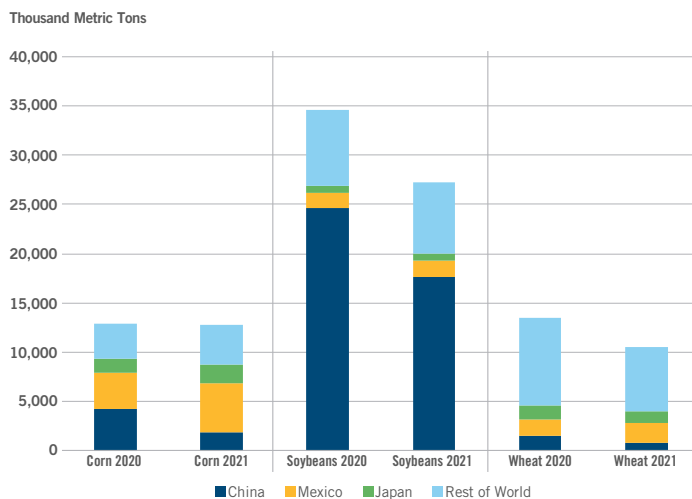
Grain barge movement on the Mississippi River, disrupted by Hurricane Ida in late August, were slowed for two months during this important period for U.S. grain exports leaving the Gulf of Mexico. Most notable was China's major reduction in grain purchases from record levels during the 2020-21 marketing year. For perspective, current crop marketing year accumulated exports of U.S. corn, soybean, and wheat to China totaled 20.4 million metric tons (MT) as of mid-December, 33% less than the previous year.

Partially offsetting the decline in Chinese buying, exports of the three major grains increased by 24% to Mexico (led by a 36% increase in corn purchases) and 6% to Japan. We have become more cautious in our outlook for continued U.S. grain exports to China from a seasonality perspective. Specifically, Brazil and Argentina are likely to step up corn and soybean exports to China during the U.S. winter months. We also fear the impact of current geopolitical tensions between the United States and China — over trade, Taiwan's independence, and other matters. It may push China to buy more grain from alternate sources, specifically, wheat from Russia and Ukraine, during 2022 and possibly beyond. ■

**2** **Wheat has pulled back somewhat after posting a 35% gain since mid-June, driven by strong global demand and tight stocks.**

**3** **Grain exports are recovering after Hurricane Ida. However, combined corn, soybean, and wheat shipments to China have fallen by one-third compared to last season.**

### EXHIBIT 3: Accumulated U.S. Grain Exports YTD for Crop Marketing Year 2020 vs. 2021



Source: USDA Weekly U.S. Export Sales Report 12/23/2021

# FARM SUPPLY

## 2021 Finishes Strong but Inflation, Input Uncertainty Lie Ahead



By Kenneth Scott Zuckerberg

**Farm supply cooperatives and ag retailers enjoyed a profitable fall season amidst high crop prices and strong farmer cash flows that incentivized prepayments for the 2022 growing season.**

Weather cooperated, with warmer and drier than average temperatures. Four critical variables will determine if the strong margins continue:

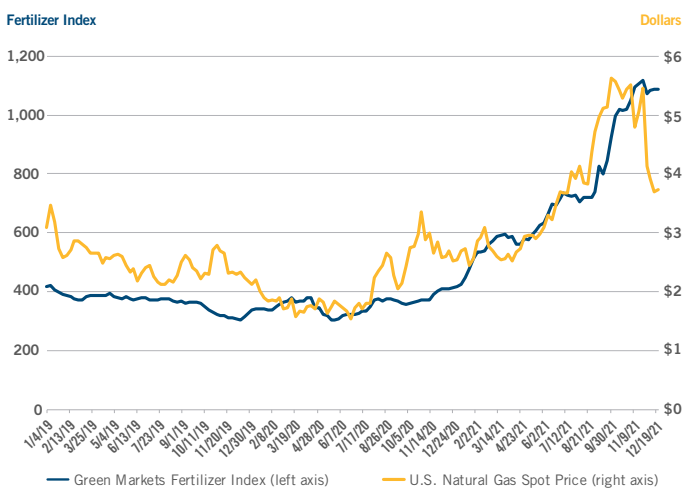
- 1) The availability and costs of plant nutrients. Fertilizer prices remain at extremely high levels despite the recent pullback in natural gas prices. Our recent analysis suggests that high fertilizer costs will persist into the spring 2022 planting season at minimum.
- 2) The availability and costs of crop protection chemicals in the wake of the well-publicized supply chain bottlenecks for products commonly produced and shipped from China and India.
- 3) To what extent farmers reduce fertilizer applications and scale down their use of herbicides, pesticides, insecticides and fungicides amidst higher costs and availability issues.
- 4) Actual 2022 planted acreage and crop mix. USDA projects that U.S. farmers will plant 92 million, 87.5 million and 49.0 million of corn, soybean and wheat acres, respectively, for the 2022-23 crop year – a 1% increase over the prior crop year. However, there is still ample time for price and weather dynamics to shift the final acreage numbers. ■

**1** Retailers enjoyed a fourth straight strong agronomy season, thanks to an orderly harvest and favorable weather.

**2** Plant nutrient prices continued their parabolic rise, up approximately 20% in Q4 and 160% over the 2021 calendar year.

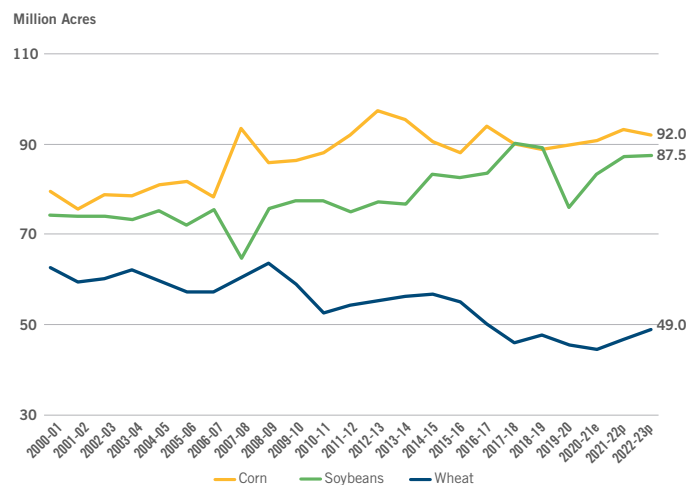
**3** Retailers face input inflation, crop protection chemical shortages, and continued labor uncertainties.

**EXHIBIT 1: Fertilizer and Natural Gas Prices: 2019 to 2021**



Source: Green Markets, FertilizerPricing.com © Bloomberg L.P. and Barchart.com

**EXHIBIT 2: U.S. Planted Acres by Crop Marketing Year**



Source: USDA



# BIOFUELS

## Good Ethanol Times Are Here Again (for Now)



By Kenneth Scott Zuckerberg

**The ethanol complex revved on all cylinders in Q4 2021, producing above pre-COVID levels and delivering a massive profit margin surge.** Strong consumer demand, bifurcating gasoline and ethanol prices (which both rose), and sharply falling natural gas input prices drove this prosperity and offset a modest rise in corn feedstock costs.

Strong consumer demand, bifurcating gasoline and ethanol prices (which both rose), and sharply falling natural gas input prices drove this prosperity and offset a modest rise in corn feedstock costs.

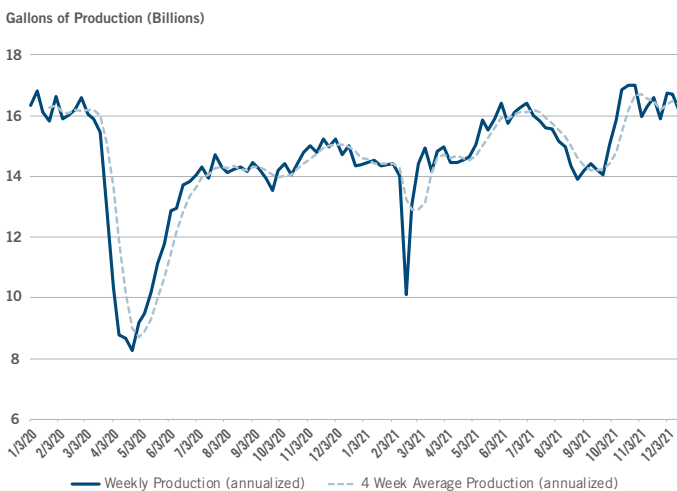
Ethanol production reached a record 17 billion gallons annualized for two consecutive weeks in late October, before “settling down” to 16.3 billion at year end. Current production has rebounded to pre-COVID levels concurrent with well above-average daily operating margins that peaked at \$1.55/gallon in late November.

Major oil companies and refiners are investing in soybean crushing and soy oil refining to support the expected growth in renewable diesel. Renewable Energy Group, CVR Energy Inc. and The Phillips 66 Company have announced new projects, capacity expansions and/or plant conversions for renewable diesel production. In the meantime, Archer Midland Daniels and Gevo, Inc. agreed to jointly develop sustainable aviation fuel (SAF).

While the ethanol complex enters 2022 with considerable momentum, we see several risks emerging over the next six months: 1) overproduction prompted by current extreme profitability; 2) higher financing costs as the Federal Reserve raises benchmark interest rate targets; and 3) possible economic shocks and/or demand volatility from the omicron variant. The global energy transition towards electric consumer vehicles, urbanization, ride-sharing, and remote work continue to be long-term challenges, as they collectively decrease fuel vehicle miles driven. ■

- 1** Ethanol production rebounded to pre-COVID levels and **Q4 profit margins rose to all-time records, currently averaging \$1.34/gallon.**
- 2** Margins expanded on rising fuel prices at the pump and a sharp correction in domestic natural gas input costs – **more than offsetting higher corn prices.**
- 3** EPA’s rejection of many refinery exemption requests is a positive, while **reduced blending requirements is a negative.**

**EXHIBIT 1: U.S. Fuel Ethanol Production**  
January 2020 to Present



Source: U.S. Energy Information Administration (EIA), data through 12/17/2021

**EXHIBIT 2: Iowa Ethanol Plant Output Profit Margins**



Source: Iowa State University, data through 12/17/2021

# ANIMAL PROTEIN

## Strong Demand Bolsters Prices as Supply Constraints Persist



By Brian Earnest

**Protein disappearance remains historically large, limited only by animal numbers and processing capacity.**

Combined production of red meat and poultry set a November record of 8.9 billion pounds, 3.5% larger than a year earlier. Ending stocks of poultry were drawn down to five-year lows, and pork inventories hit 12-year lows, as well. In the meantime, fourth quarter wholesale meat indexes were 25% higher YoY, reflecting robust consumer demand for meat and poultry.

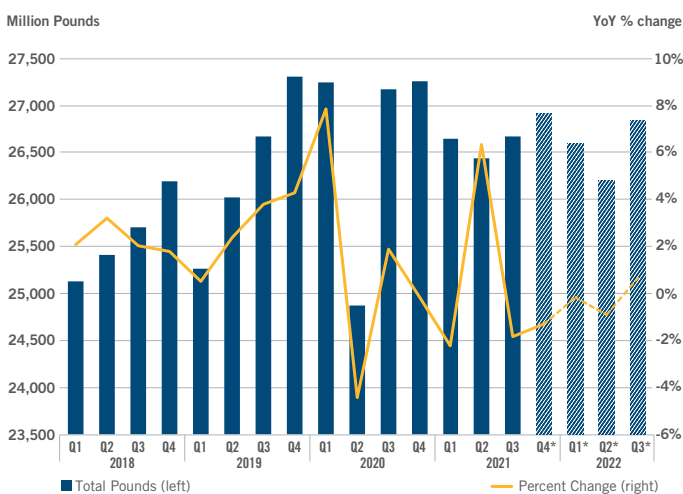
With food service spending rebounding above 2019 levels throughout much of the third and fourth quarters, it seemed the dine-in segment was set for a full recovery. However, omicron has again dashed those hopes. Compared with 2019, data from Open Table shows a decline of 20% to 30% in seated diners through the first full week of January while earlier totals from 2021 were much closer to net-neutral. Weaker demand in sit-down dining is expected through Q1 at least.

China's imports of animal protein have slowed significantly from their record peaks during the summer months. For U.S. producers, reliance on China has waned for poultry and pork, while the opportunities for beef remain robust. The 2022 outlook for sales to China remains mixed, as the nation's hog inventory has strongly rebounded but African swine fever always remains a wild card. China's growing affinity for U.S. beef has made producers optimistic, especially as China's imports of beef from Brazil were suspended after confirming atypical mad cow disease in September.

**1 Protein production metrics moved moderately higher through the quarter, but supplies remain under pressure from robust demand.**

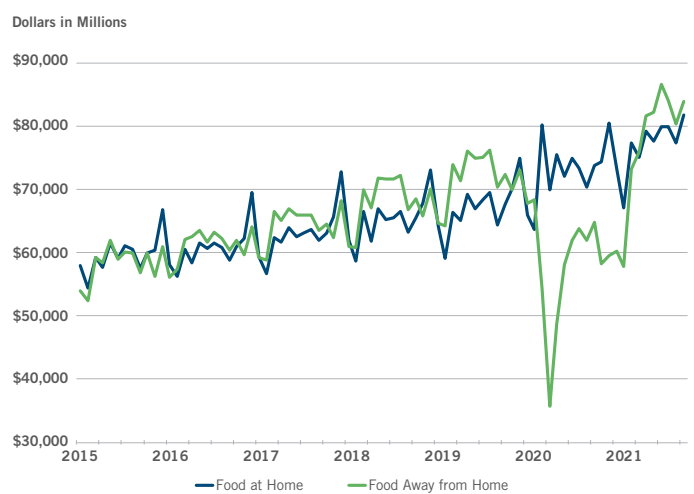
**2 After slipping severely during 2020, food away from home expenditures remained elevated, up 30% YoY during October.**

**EXHIBIT 1: U.S. Red Meat and Poultry Production**



Source: USDA-ERS

**EXHIBIT 2: Home vs. Away Food Expenditures**



Source: USDA

## Chicken

Elevated corn and soybean prices continue to limit profitability potential for the U.S. broiler sector. But by most accounts, the burden of higher feed costs was largely offset by higher wholesale chicken prices in 2021. The composite of breast meat, leg quarter, and wing prices drawn against nearby corn and soybean meal futures suggested break evens were exceeded by more than \$0.30 on a per pound basis during the fourth quarter – typically the weakest period for broiler integrators’ margins.

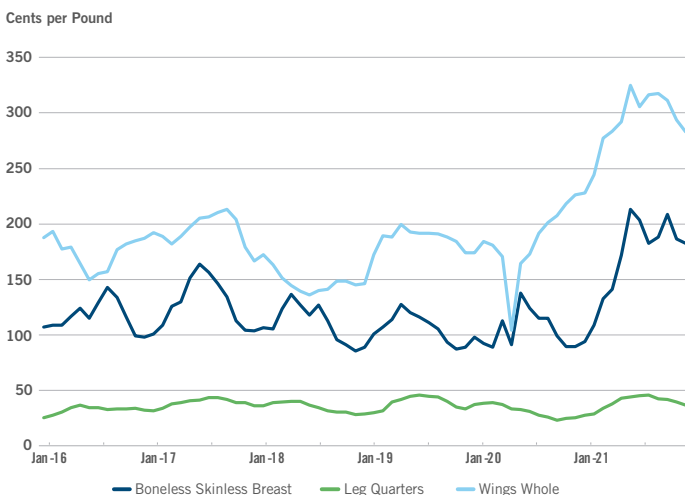
With the Dec. 1 broiler-type hatching egg layer flock 2% larger than a year ago, the outlook is good for moderate production growth, in spite of the fact the industry has not yet overcome hatchability issues. Retail grocery demand should remain reasonably strong, but the ongoing inflation across all food categories will keep consumers more focused on prices than in recent years.

Popular chicken sandwiches and eased dining restrictions meant strong breast meat sales and prices in 2021. Elevated price conditions forced marketers to be creative, which meant other items, such as tenders and dark meat, gained market momentum as well. Typically, the fourth quarter means lower prices, but even into the most recent weeks, USDA has reported prices for boneless skinless breast meat above \$1.80 per pound, up \$1.00 from pre-pandemic levels.

**1** The outlook is good for moderate production growth, in spite of the fact the industry has not yet overcome hatchability issues.

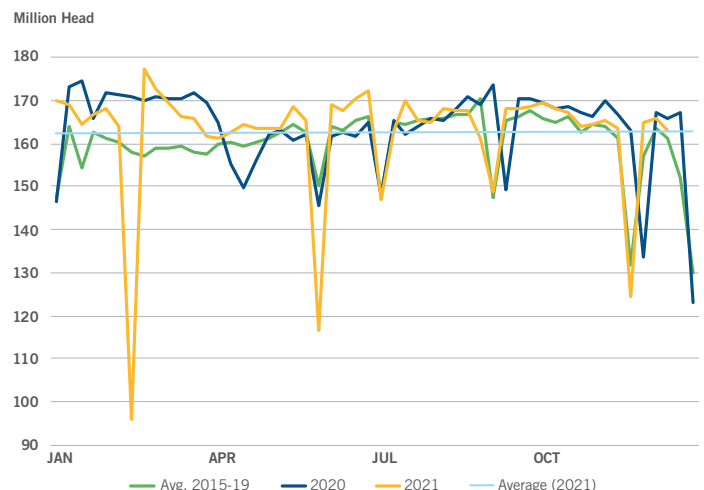
**2** While broiler meat values typically decline seasonally during the fourth quarter, tight supplies and robust demand helped offset stronger feed prices.

EXHIBIT 3: USDA Chicken Prices



Source: USDA-AMS

EXHIBIT 4: Weekly Broiler Slaughter



Source: USDA, CoBank

## Beef

The beef market continued on trend in Q4 with its strong performance at the consumer level. Cutout values peaked 40% above 2020 levels as retailers vied for forward supply coverage in anticipation of a return to big holiday social gatherings in 2021. After staying above prior-year levels, and reaching more than \$1300/cwt, the market for bone-in choice ribeyes fell below \$800 to end December – a sign that the market succumbed to the old adage that the solution to high prices is high prices.

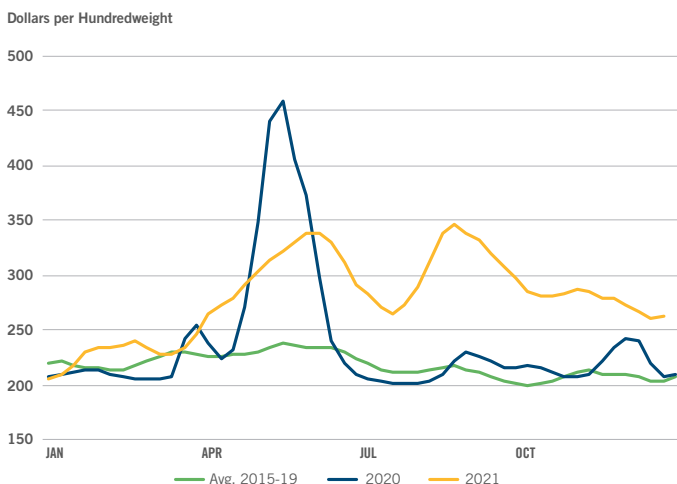
Market-ready cattle supplies continued to test packer capacity in Q4, with minimal disruption compared to prior periods. The USDA reported that cattle-on-feed inventories were down slightly on Dec. 1, with higher placements (up 4%) and marketings (up 5%) than a year earlier. The backlog of cattle in feedlots eased some, with cattle on feed over 150 days down 13% YoY. With dwindling fed cattle supplies, fed prices have increased roughly 12% since late October and are up about 30% YoY.

Weather remains a concern, as more than 70% of the U.S. is experiencing some type of drought. Another La Niña pattern means drought conditions will continue in the Southwest and the southern plains through mid-year, suggesting that tight hay availability and high prices will persist. Although exports account for only about 11% of beef production, carcass values continue to benefit from growing global demand. Most notably, new marketing opportunities in China garnered attention in 2021 as U.S. beef exports swelled in the most recent quarter.

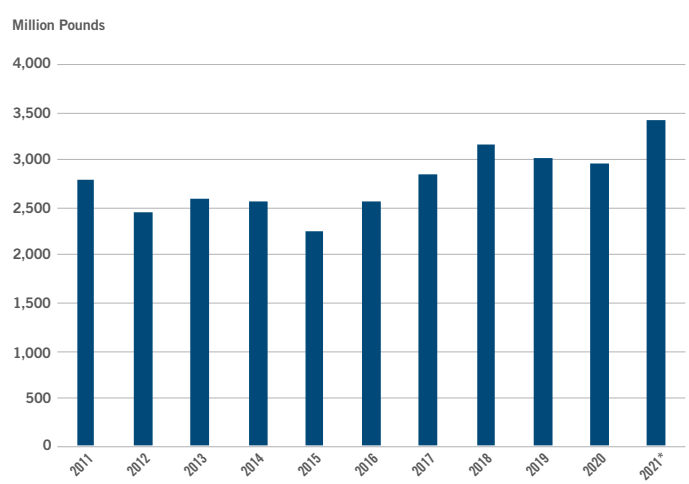
**1** The beef cutout averaged a 25% premium to year ago levels in Q4.

**2** With the backlog of fed cattle easing, fed prices have increased roughly 12% since late October and are up about 30% YoY.

**EXHIBIT 5: U.S. Composite Beef Cutout**



**EXHIBIT 6: U.S. Beef and Veal Exports**



## Pork

USDA’s December 1 *Quarterly Hogs and Pigs Report* showed a notable decline in hog supplies, largely confirming market expectations. All hogs and pigs were reported down 4% from a year earlier, while market hogs were down 4.4%, continuing a contraction since mid-2019. It was the lowest Dec. 1 inventory level reported since 2017. Pigs saved per litter rebounded to 11.19 (up from 11.05 in 2020), which is the top end of the range of the past seven (relatively flat) periods. This provides some optimism for a rebound in hog numbers, but that won’t be seen until at least mid-year.

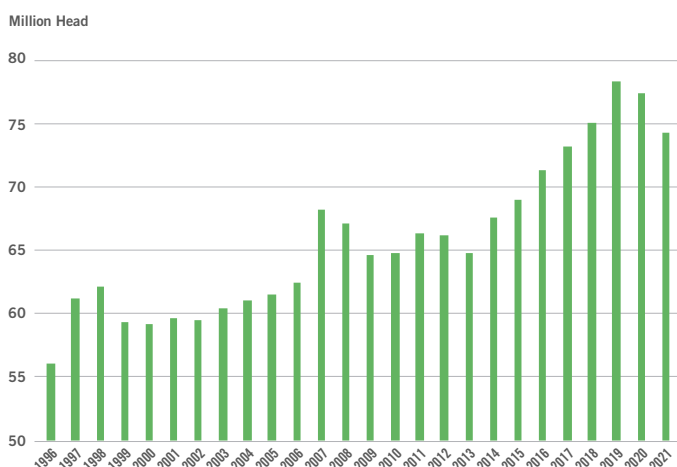
Two major packers announced they will stop shipping pork into California as Prop 12’s production restrictions are implemented. For now, the uncertainty has the effect of keeping some hog barns below capacity. As the market adjusts to this massive imposition, we expect producers’ cautious approach and tightened supplies to provide support for higher pork prices in 2022.

U.S. pork exports to China in 2021 fell well below year ago levels, with volume for the most recent monthly total (October) sitting at just 35% of year ago volume. Mexico has stepped in as a larger buyer, but has not captured all of the loss. As Chinese hog prices have rebounded from their depressed levels, China may again ramp up imports. However, optimism comes with limits: China’s tariffs for most favored nations – including the U.S. – returned to 12% on Jan. 1, from 8%. ■

**1** Hog and pig inventory was at its lowest Dec. 1 level since 2017, down 4% from a year earlier.

**2** U.S. pork exports to China were just 35% of year ago volume for the most recent monthly total (October).

**EXHIBIT 7: U.S. Inventory Hogs and Pigs**  
December 1



Source: USDA

**EXHIBIT 8: Nearby Lean Hog Futures**



Source: LMIC, CME Group

# DAIRY

## Dairy Product Prices Climb to Multi-Year Highs as Milk Collections Fall



By Tanner Ehmke

### Production

Milk supplies tightened further in Q4 as the U.S. dairy herd continued to shrink, particularly in the West and Southwest regions of the U.S., where the lack of feed availability remains a persistent stressor for dairy farmers. The U.S. is now milking the fewest cows since September 2020 as dairy farmers struggle with rising costs of production. However, signs of prosperity are on the horizon as heifer prices rise, dairy cow slaughter moderates, and farm sales slow, indicating that producers are climbing back into profitability as milk prices rally. Class III milk futures traded on the CME ended 2021 above \$20/cwt after starting the year below \$18/cwt.

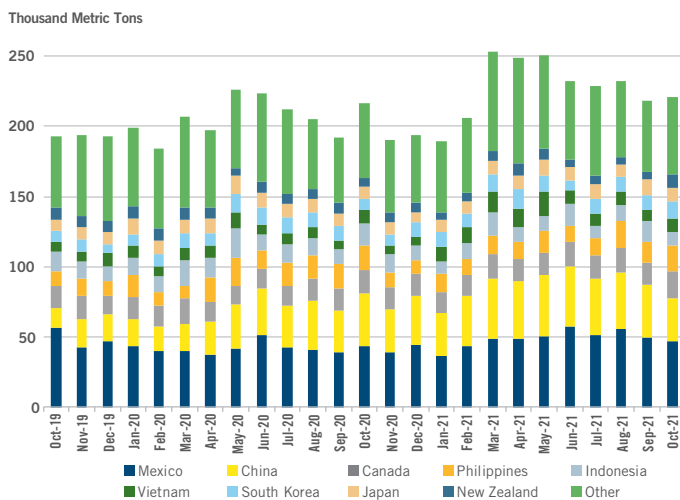
Although dairy farmers are showing signs of improved profitability, growth in the U.S. milk supply is not expected to return for several months as the cost of farm expansion remains historically high. Cost constraints are also hobbling dairy producers around the world with milk production plunging in New Zealand and Europe on declining cow numbers while unfavorable weather hampers productivity. Whereas U.S. milk production was down 0.4% YoY in November, New Zealand collections during its seasonal peak of production were down 2.7%, and the EU dropped 3.7%.

Sen. Kirsten Gillibrand introduced legislation in December requiring USDA to hold hearings over the Federal Milk Marketing Order (FMMO) milk pricing system, specifically to review the Class I milk pricing formula, within six months of passage of the bill. In September, Sen. Gillibrand held a milk price hearing regarding the impacts of negative producer price differentials (PPDs) on farmers and the depooling of milk from the federal orders in 2020.

**1** Tighter U.S. milk supplies led to falling butter and nonfat dry milk production last quarter with higher prices following suit.

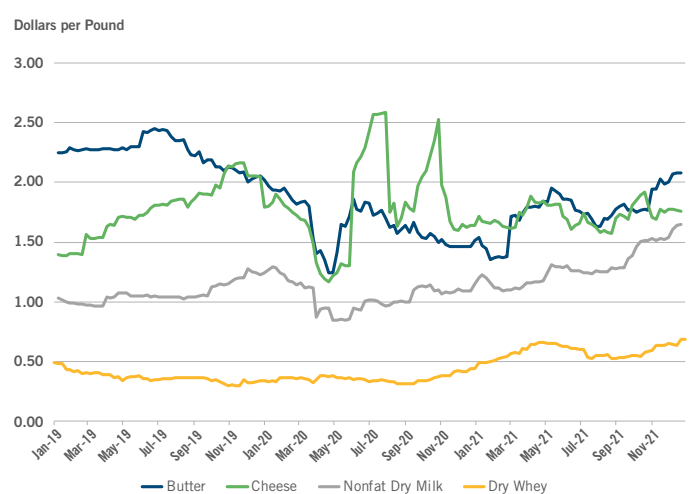
**2** U.S. dairy processors are grappling with how much cost inflation can be passed on to the consumer via higher prices of retail dairy products.

**EXHIBIT 1: U.S. Dairy Exports by Country**



Source: USDA-FAS

**EXHIBIT 2: Dairy Product Prices**



Source: CME Group

## Processing

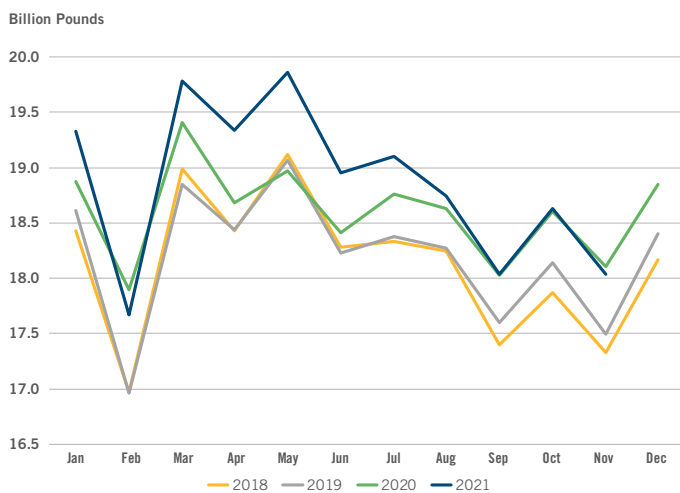
With milk supplies tightening, processors are prioritizing cheese vats over butter churns. Cheese and whey production in the U.S. maintains a healthy growth path at the start of the New Year while butter and nonfat dry milk production are marking noticeable declines. The drop in butter production during the holiday season (when demand is at its seasonal peak) caused processors to pull butter out of inventory in Q4. Butter prices have come out of the doldrums and rallied to the highest level in four years with nonfat dry milk prices following suit. While cheese prices remained comparatively flat amid the buildup of inventories in the U.S., nervous buyers are now seeing a rally across the dairy complex. Dry whey prices are also accelerating on strong demand for protein.

Global dairy demand remains resilient despite soaring milk and product prices. While the volume of U.S. dairy exports has slowed from the record peak last spring – particularly to China which saw October dairy shipments down 19% YoY – total dairy shipments are still higher YoY and posting new records despite logistical constraints. Had supply chains been more open, U.S. dairy exports for 2021 would likely have been even higher. An improvement in port logistics was expected by early 2022, but the omicron surge may delay that.

Domestically, processors are closely monitoring production decisions as omicron may again cause a slowdown in the food service sector and a surge in retail grocery sales. At the same time, they are also juggling staffing shortages, a lack of truck drivers, and the associated production disruptions. However, with dairy products now in a much tighter supply situation than last year, processors will finally be in a position to pass along cost increases, something the rest of the food industry complex did in 2021. ■

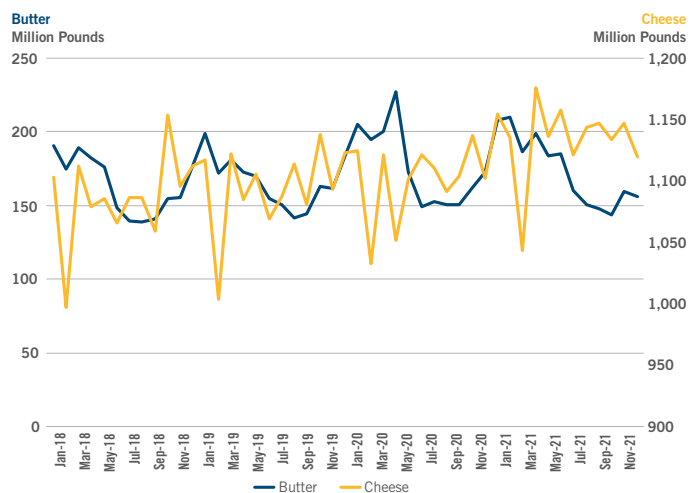
**3 With milk production falling in the U.S., New Zealand, and Europe amidst strong global demand, stronger milk prices are expected through early 2022.**

**EXHIBIT 3: U.S. Milk Production**



Source: USDA-NASS

**EXHIBIT 4: U.S. Butter and Cheese Production**



Source: USDA-NASS

# COTTON, RICE AND SUGAR

## Cotton Prices Continue to Thrive During COVID Recovery



By Rob Fox

### Cotton

On Nov. 23, cotton futures hit \$1.20/lb, the highest close in over a decade. Three days later, news of the omicron variant hit, sending commodity markets into retreat and cotton futures dropped 10-15 cents. Nonetheless, prices held above the longer term upward trend which began in April 2020. However, despite the nearly two-year bull market, we see a growing threat of downside risk.



By Tanner Ehmke

First, global cotton use is driven by consumer spending which depends on global economic growth. Unlike food and fuel, apparel and other textiles are largely discretionary purchases. The rapid emergence and spread of omicron in just a matter of weeks shattered the public perception that the pandemic was approaching an endpoint. It may take many months or even years for consumers

to regain that confidence again. Given the wind down of government stimulus and tighter monetary policy in the U.S. and Europe (and likely stronger dollar), combined with the now uncertain consumer attitudes about the future, we expect more caution from apparel and textile buyers.

Second, the fundamental global supply and demand situation does not necessarily suggest that the high current price levels are warranted. Global stocks – including China or not – appear to be ample. USDA forecasts that marketing year 2021-22 global ending stocks-to-use ratio will be at 40%, which is essentially unchanged YoY. Other than the pandemic-shocked 2019-20 season, the ratio has not been higher in the previous 20 years. Including China, the stocks-to-use ratio is on par with the previous six years where farm-level prices hovered in the 60-70 cent range (as the chart illustrates).

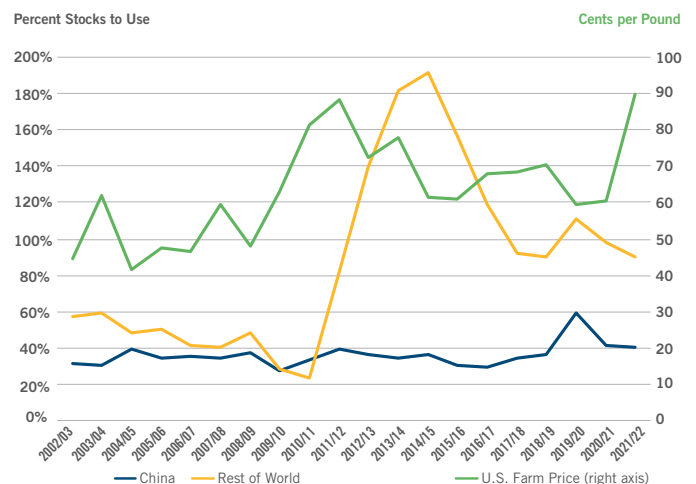
### Rice

Rough rice futures languished last quarter amid abundant exportable supplies in India and declining export price competitiveness. Persistent weakness in the Brazilian real in particular has been a headwind to U.S. rice with Brazilian rice exports more competitive in the Western Hemisphere market. U.S. export sales commitments for all rice in the current marketing year are down 36% YoY and shipments are down 5% YoY.

**1** Cotton prices hit decade highs in November and have held firm in the face of omicron.

**2** U.S. rice exports struggle amid excess global supplies.

**EXHIBIT 1: Cotton Stocks-to-Use Ratio: China vs. Rest of World**



Source: USDA-FAS



Rice acreage in 2022 is generally expected to modestly rebound from last year’s sharp reduction. However, U.S. rice producers are weighing their acreage options: Rice prices have plateaued while soybean prices are rising. Skyrocketing prices of fertilizer and other farm inputs is another factor. Growers in the South who are unable to acquire needed fertilizer by spring may shift some acres away from grains that are high users of nitrogen – like rice – over to soybeans, which do not require nitrogen. In California, record snowfall in December has renewed hopes for growers of medium- and short-grain rice, which depend upon spring snowmelt for irrigation.

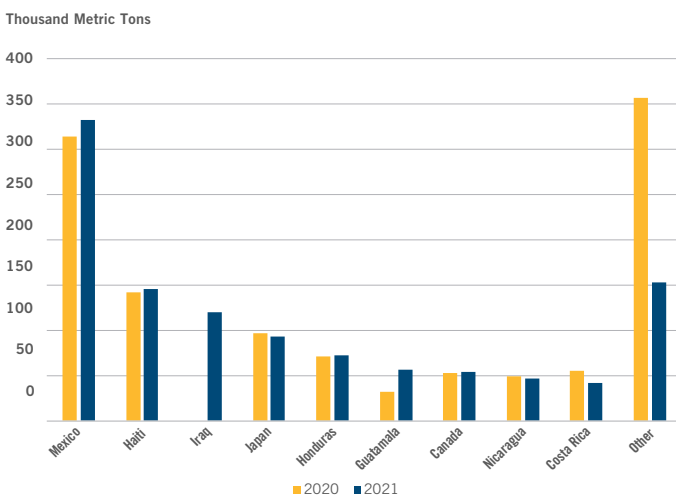
### Sugar

The sugarbeet harvest is now complete and what a bumper crop it was: Mostly ideal growing conditions across the upper U.S. led to what most believe will be record yields. Without the capacity to process that abundance before next spring’s thaw, some cooperatives required growers to leave 5%-10% of their beets in the fields. While USDA is forecasting U.S. sugarcane yields to be down about 2% YoY, this is still a great outcome considering Louisiana’s core sugarcane region took a nearly direct hit from Hurricane Ida in August.

The COVID pandemic brought with it a consumer trend toward health and wellness, and surveys have repeatedly shown that consumers intend to reduce their sugar intake. While this may yet turn out to be true for a subset of the population, overall sugar consumption has actually been spurred on by the pandemic. Sales of both candy and carbonated beverages have posted growth rates over 10% since the pandemic began. The fastest-growing segment, craft soft drinks, relies on cane sugar. Overall, U.S. sugar deliveries for human consumption have grown a combined 2.1% over the past two years. The question for 2022 is whether wholesale prices approaching 50 cents/lb will finally put a crimp in sugar consumption. ■

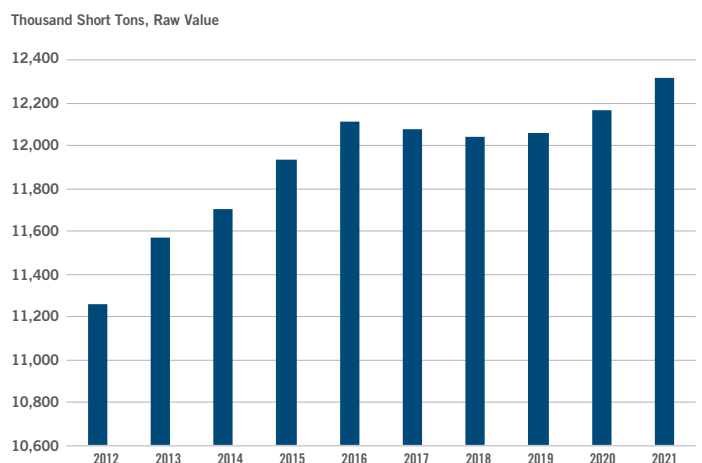
**3** Sugar consumption continues to grow despite consumers’ reported intentions for health and wellness.

**EXHIBIT 2: U.S. Rice Accumulated Exports**  
Marketing Year Beginning Aug 1 (through Dec 23, YTD)



Source: USDA-FAS Export Sales, Dec. 23, 2021

**EXHIBIT 3: U.S. Sugar Deliveries for Domestic Consumption**



Source: USDA-FSA, Sweetener Market Data

# SPECIALTY CROPS

## Specialty Crops PPI Jumps Higher on Smaller Harvests



By Tanner Ehmke

The smaller fruit, nut, and vegetable harvests of 2021 drove the producer price index (PPI) for specialty crops higher last quarter. The widespread drought, record heat, and unseasonable frosts in parts of the U.S. that crimped specialty crop production earlier in 2021 have lifted prices paid to growers while adding to already existing inflationary pressures at retail. From October to November, fruit prices rose 20.1%, while vegetable prices gained 11.5%, according to the U.S. Bureau of Labor Statistics. Earlier in the year, fruit and vegetable farmers experienced lower farmgate prices for their produce despite rising retail prices paid by consumers.

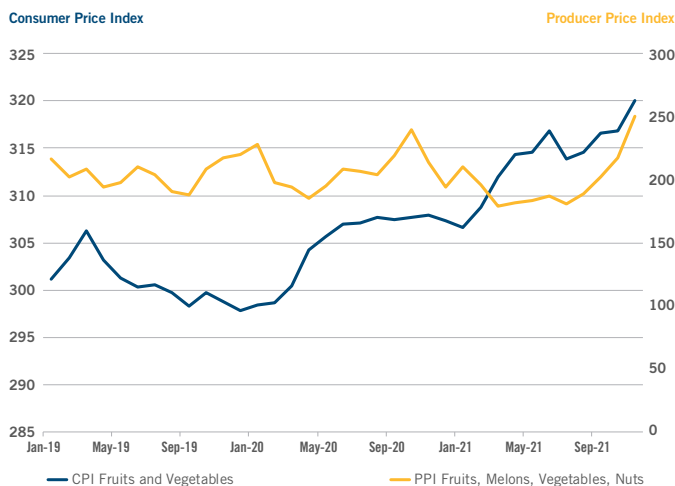
The rise in fruit and vegetable prices is owed mostly to the persistent drought across the U.S. West that cut production through both lower acreage and yields. With nearly 70% of all fruits and vegetables in the U.S. grown in California under irrigation, the western drought and water shortages are now causing noticeable inflationary pressures. Prices for some vegetables like potatoes have reached record high levels. The reopening of the food service industry also lifted retail prices for fruits and vegetables, but omicron now brings that demand into question.

The smaller tree nut harvest this fall is also sending almond, walnut, and pistachio prices higher for both growers and consumers. Low water allocations and record high temperatures during the growing season reduced nuts per tree. USDA-NASS estimates a 10% YoY drop for the current almond harvest and a 15% drop in walnut production.

**1** The producer price index for specialty crops climbed sharply last quarter as smaller harvests drove farmgate prices higher.

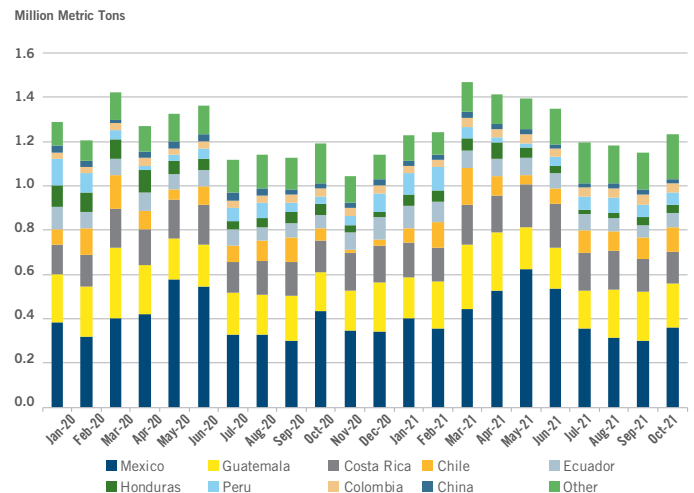
**2** Fruit and vegetable imports reached record highs as production dropped in the U.S. while Mexican and South American produce filled the void.

**EXHIBIT 1: Specialty Crops CPI vs PPI**



Source: U.S. Bureau of Labor Statistics, Federal Reserve Bank of St. Louis

**EXHIBIT 2: Fruit Imports to U.S.**



Source: USDA-FAS

However, industry estimates put the pistachio crop down only slightly YoY from last year's record crop. Tree nut exports are well off of last year's record highs following the smaller harvest.

High demand for citrus fruit among health-conscious consumers amid smaller harvests is lifting prices of oranges, lemons, and grapefruit. Extreme weather in Texas and Arizona last growing season, declining acreage across the Sun Belt, and ongoing effects of citrus greening disease in Florida continue to crimp domestic supplies with demand elevated from consumers seeking vitamin-C rich foods during the COVID-19 pandemic.

Higher produce prices are likely to persist into the early months of 2022, but not all produce is trending noticeably higher. Apple, grape, peach, cranberry, and cherry production is up, according to USDA-NASS, with prices only slightly higher. While farm prices are higher, grower and packer margins are being eaten up by steeper costs for freight, containers, fertilizer, fuel, irrigation, pallets and packing material, and wages for field and packing house workers.

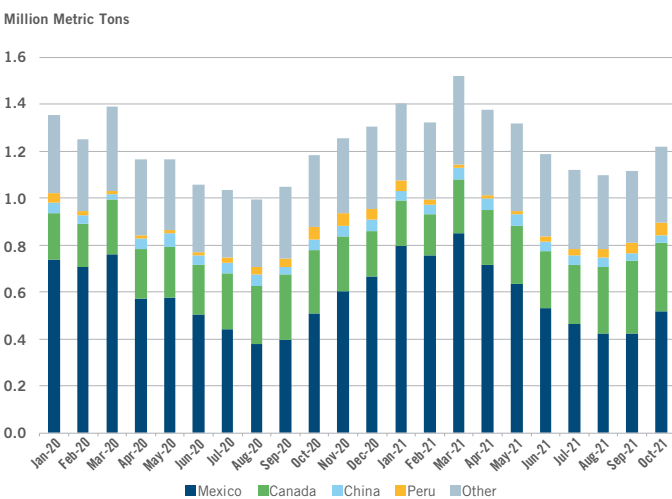
With smaller domestic fruit and vegetable harvests, the U.S. is relying more heavily than ever on imports and is on track to import record large amounts of fruits and vegetables. Supply chain issues for fruits and vegetables have not been as severe as other markets since most imports are cross border trades with Mexico and are not reliant on congested ocean ports. Fruit imports January through October in 2021 were up 3.3% YTD with the biggest increases coming from Mexico and Costa Rica, while vegetable imports were up nearly 9% with the biggest increases coming from Mexico, Canada, and Thailand.

U.S. fruit, nut, and vegetable growers are heading into 2022 with a much improved outlook for water. Snowpack across the Sierra Nevada mountain range at the end of 2021 was 159% of normal following record December snowfall. Snowpack provides about 30% of California's fresh water supply. ■

**3 U.S. tree nut exports are down sharply from last year's record pace following reduced fall harvests.**

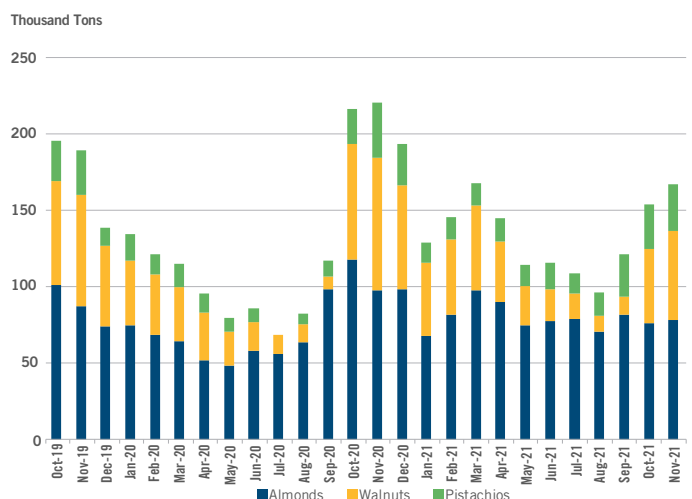
**4 Drought continues to grip most of the Western U.S., but record December snowfall in the Sierra Nevada mountain range has raised hopes of relief.**

**EXHIBIT 3: Vegetable Imports to U.S.**



Source: USDA-FAS

**EXHIBIT 4: U.S. Tree Nut Exports**



Source: Almond Board of California, California Walnut Board, Administrative Committee for Pistachios

# POWER, ENERGY AND WATER

## Fuel Volatility Returns in an Age of Renewables



By Teri Viswanath

### Natural gas and coal prices soared to multi-year highs in 2021 as buyers scrambled to line up sufficient supply ahead of the winter.

As was the case for many other consumer goods, last year's outsized economic reboot and producers' inability to keep up was largely to blame for energy supply shortfalls and run-away prices.

Still, some argue that energy transition played a role, with the collective weaning away from fossil fuels hobbling the supplier response. With carbon-intensive resources being phased out before an adequate replacement is in place, market observers suggest that an intermittent fossil-fuel "back-stop" will open a new chapter in seasonal volatility.<sup>1</sup> Our collective experience from last year seems to confirm this view.

Certainly, the energy crisis playing out in Europe supports this line of thinking. No other region of the world has invested so much to reconstruct its energy markets and transition to renewable resources. But with electricity demand rebounding and renewable resources failing to keep pace, European nations have fallen back on thermal power to meet their burgeoning electricity requirements. Their subsequent spot purchases in turn have propelled global fuel prices to multi-year highs, prompting calls for long-term strategic reserves as a means to temper the volatility.<sup>2</sup>

A more isolated paradigm has played out in California, now building temporary natural gas plants to address the state's electricity supply shortages. The shortfall tends to occur during hot summer evenings when solar production wanes. To meet the state's ambitious plans to become carbon-neutral by 2045, the retirement of existing natural gas plants could again trigger another major supply deficit. Admittedly, the current emergency buildout will occur alongside new clean-energy generation and storage deployment, but it reinforces the notion that a carbon bridge might persist longer than anticipated.

Achieving energy security as the world transitions to cleaner resources will require a careful balance of technologies, policies, and geopolitics – a pathway that will likely include more commodity price bumps ahead.

<sup>1</sup>Foreign Policy, "How the Energy Crisis Made 2021 Feel Like the '70s," 22 December 2021.

<sup>2</sup>Reuters, "EU to propose joint gas buying in response to high energy prices," 13 December 2021.

**1** Natural gas and coal prices soared to multi-year highs in 2021 as buyers scrambled to line up sufficient supply ahead of the winter.

**2** Some argue that energy transition played a role in high fuel prices as collective weaning from fossil fuels hobbles supplier response.

**3** As the world transitions to cleaner resources, achieving reliability might require give-and-take from diverse technologies.

## First Bucket of Infrastructure Funding Targets Lead Pipe Removal

Much of the country's water and wastewater infrastructure was built in the 1970s and 1980s and is fast approaching the end of its useful life. To meet future public water system needs, EPA estimates the cost at roughly a half-trillion dollars over the next 20 years.

Replacement of aging or deteriorating delivery infrastructure (that is, transmission and distribution water pipes) will account for about two-thirds of the funding need. But the \$82.5 billion of new federal water infrastructure monies – the largest payout of our generation, thanks to the Infrastructure Investment and Jobs Act – will help make a dent in the total repair bill.

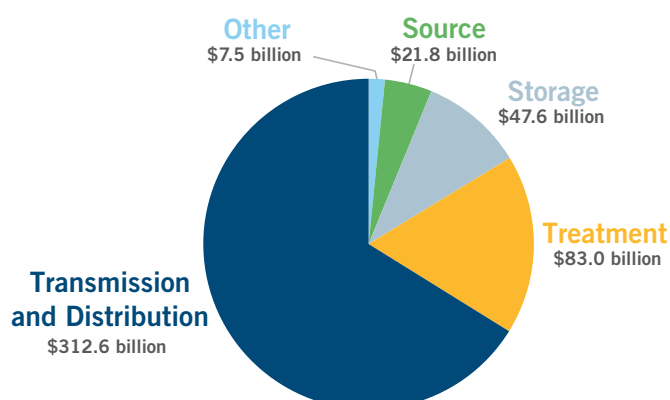
What's more, the administration is following up on campaign promises, dedicating the largest single line-item of the act's water spending, or \$15 billion, to removing lead service lines. That said, a number of challenges will persist, including ascertaining where these pipes are actually located. Looking beyond the most immediate lead-pipe inventory problem, the current allocation probably represents only about a quarter of the funding required for service line replacement.<sup>1</sup> Consequently, communities will need to get creative. Attempting to address both the issues of planning and timelines, the White House just announced a new action plan with stepped-up legal deadlines anticipated by 2024.

Success of the current program will ultimately depend on how the funds are spent and possible future funding. In the three decades since lead pipes were prohibited, federal requirements have failed to avert the worst lead-contamination crises, so there is much weighing in the balance. ■

<sup>1</sup>The White House estimates \$45 billion is needed to dig up every lead pipe in the country. Other industry estimates have pegged the cost as high at \$60 billion.

### EXHIBIT 1: 20-year Water Infrastructure Need

by Project Category



Source: EPA's 6th Drinking Water Infrastructure Needs Survey and Assessment, March 2018

**1** The Infrastructure Investment and Jobs Act provides \$15 billion for lead pipe removal – a far cry from the \$45 billion likely required.

**2** However, as the largest payout in a generation, this funding could make a meaningful dent in addressing this problem.

**3** Communities will need to get creative in making the most of this funding, collaborating with local, state, and federal partners to accelerate the replacement.

# COMMUNICATIONS

## Bipartisan Support Brings Unprecedented Digital Financial Aid to Rural America



By Jeff Johnston

**The funding floodgates opened up in Q4 thanks to bipartisan support to bridge the digital divide.** The Infrastructure Investment and Jobs Act includes \$65 billion for broadband of which \$42.5 billion will be allocated to the states to build networks in unserved and underserved areas. Of the remaining \$22.5 billion, \$14.25 billion will be used to subsidize monthly bills for low-income consumers with the balance earmarked for various grants. To put this into perspective, \$65 billion is more than three times larger than the Rural Digital Opportunity Fund (RDOF), the largest communications subsidy program the federal government had ever launched. Despite its impressive size, critics argue that it still won't be enough to bridge the digital divide and provide the necessary subsidies for rural households to adopt broadband.

The decision to deploy network funding at the state level differs from previous federal programs administered by the Federal Communications Commission (FCC). These FCC programs, RDOF in particular, have been heavily criticized for awarding large sums of money to entities that lack the financial and operational capabilities to meet their build requirements. The FCC has also been criticized for awarding grants in markets that already have broadband coverage. These issues have resulted in network delays in unserved and underserved markets. By including the states in the process, the hope is that these types of mistakes can be avoided given the local knowledge of where coverage is needed, and who is best to build the networks. ■

- 1** The \$65 billion in new broadband funding is triple the size of RDOF, the largest federal government broadband subsidy program.
- 2** States will receive two-thirds of the Infrastructure Investment and Jobs Act broadband funding to build networks in unserved and underserved areas.
- 3** By tapping into local knowledge of where coverage is needed and who can build it, FCC may avoid repeating past mistakes.



This quarterly update is prepared by the Knowledge Exchange Division and covers the key industries served by CoBank, including the agricultural markets and the rural infrastructure industries.

**Brian Earnest**

*Lead Economist, Animal Protein*

**Tanner Ehmke**

*Lead Economist, Dairy and Specialty Crops*

**Rob Fox**

*Director, Knowledge Exchange*

**Jeff Johnston**

*Lead Economist, Communications*

**Daniel Kowalski**

*Vice President, Knowledge Exchange*

**Christina Pope**

*Research Editor, Knowledge Exchange*

**Teri Viswanath**

*Lead Economist, Power, Energy and Water*

**Kenneth Scott Zuckerberg**

*Lead Economist, Grain and Farm Supply*

**CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions.  
Please send them to [KEDRESEARCH@cobank.com](mailto:KEDRESEARCH@cobank.com).**

**Disclaimer:** *The information provided in this report is not intended to be investment, tax, or legal advice and should not be relied upon by recipients for such purposes. The information contained in this report has been compiled from what CoBank regards as reliable sources. However, CoBank does not make any representation or warranty regarding the content, and disclaims any responsibility for the information, materials, third-party opinions, and data included in this report. In no event will CoBank be liable for any decision made or actions taken by any person or persons relying on the information contained in this report.*