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March Market Update
Corn, Soybeans, Rice, and Cotton

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WASDE Summary

This month's 2021/22 U.S. corn supply and use outlook is for increased food, seed, and industrial use, larger exports, and smaller stocks relative to last month. Corn used for ethanol is raised 25 million bushels to 5.35 billion based on data through January from the *Grain Crushings and Co-Products Production* report and weekly ethanol production data as reported by the Energy Information Administration (EIA) for February. Exports are raised 75 million bushels to 2.50 billion, reflecting expectations of sharply lower exports from Ukraine. The projected season-average farm price is raised 20 cents to $5.65 per bushel.

The 2021/22 U.S. wheat supply and demand outlook is for lower supplies, unchanged domestic use, reduced exports, and higher ending stocks. Supplies are lower because imports have been reduced by 5 million bushels (Hard Red Spring wheat). Exports are reduced 10 million bushels, down to 800 million, on weaker than expected sales and shipments for both Hard Red Winter and Soft Red Winter varieties. Projected 2021/22 ending stocks are raised 5 million bushels to 653 million but are still 23 percent lower than last year. The season-average farm price (SAFP) is raised $0.20 per bushel to $7.50 on NASS prices reported to date and expectations for cash and futures prices the remainder of the marketing year (MY). Despite the recent sharp increases in futures and cash prices, a significant majority of U.S. wheat has already been marketed this MY, limiting the SAFP increase.

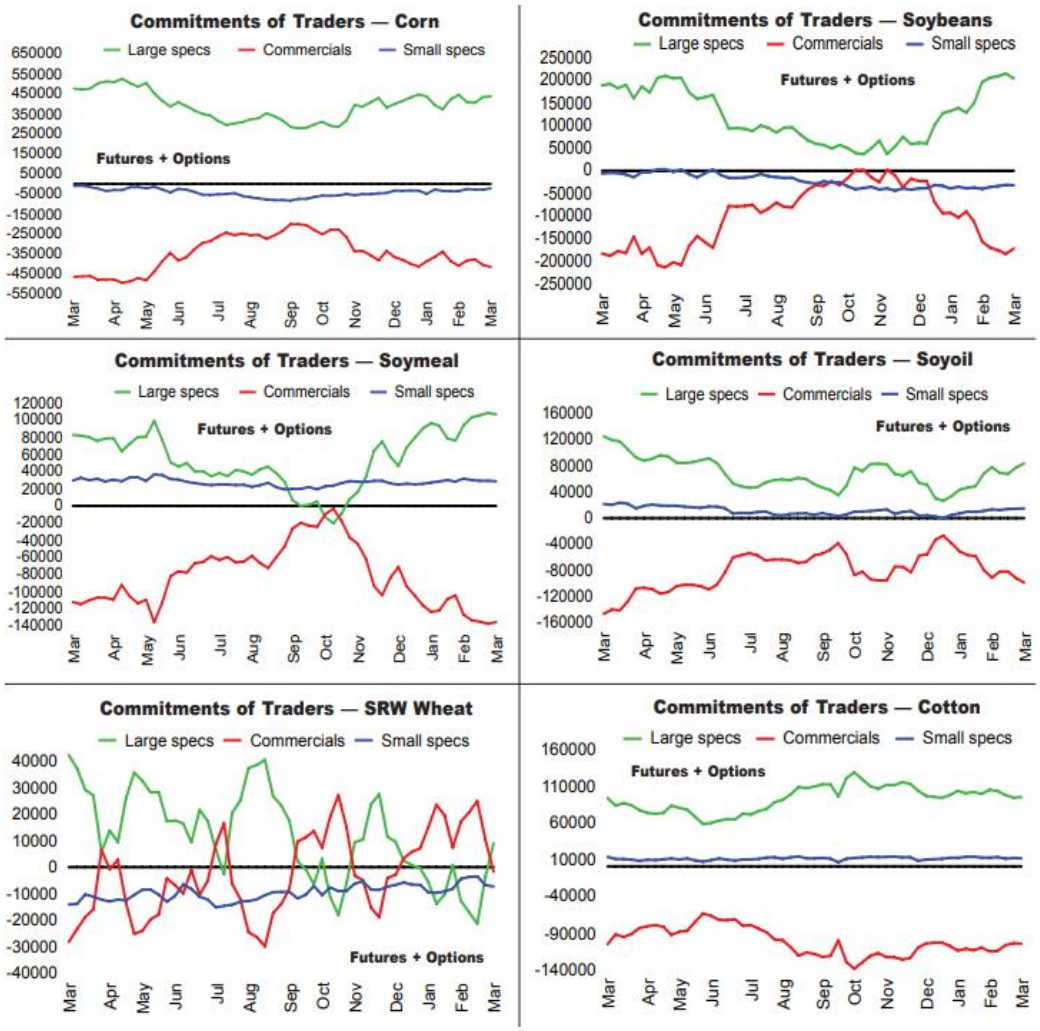
U.S. soybean supply and use changes for 2021/22 include higher exports and lower ending stocks compared with last month's report. Soybean exports are raised 40 million bushels to 2.09 billion with lower production and reduced exports for South America. Soybean ending stocks are projected at 285 million bushels, 40 million bushels down from last month. With rising soybean oil prices, soybean oil used for biofuel is reduced this month. Soybean oil exports are raised in response to reduced global sunflower seed oil trade and tighter global vegetable oil supplies. Soybean and product prices are all

raised this month. The U.S. season-average soybean price for 2021/22 is forecast at $13.25 per bushel, up 25 cents. The soybean meal price is forecast at $420 per short ton, up 10 dollars. The soybean oil price is raised $0.02 to $0.68 per pound.

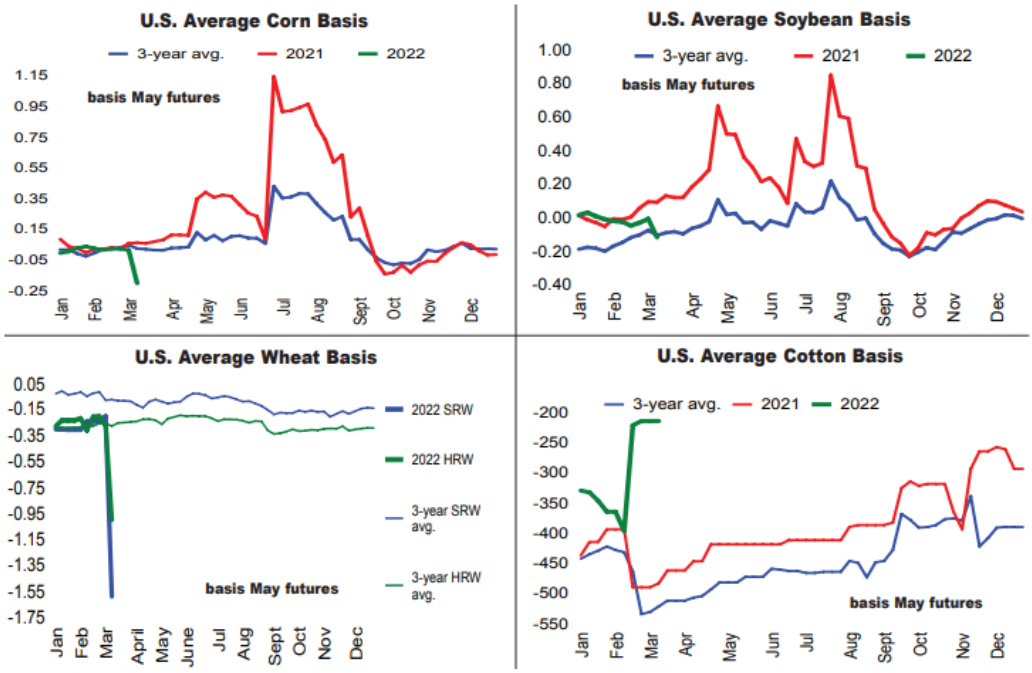
The outlook for 2021/22 U.S. rice this month is for stable supplies, unchanged domestic use, reduced exports, and higher ending stocks. Exports are lowered by 1.0 million cwt to 86.0 million with the decline coming in for both medium- and short-grain on the continued weak pace of sales and shipments, particularly to the Middle East. Projected 2021/22 all rice ending stocks are 34.5 million cwt, up 1.0 million from last month but down 21 percent from last year. The projected 2021/22 all rice season-average farm price (SAFP) is $0.20 per cwt higher at $15.90 per cwt. The long-grain SAFP is raised $0.50 per cwt to $14.00 on expectations of elevated cash and futures prices for the remainder of the marketing year with higher projected U.S. wheat, corn, and soybean prices. However, the medium- and short-grain SAFP is reduced $0.50 per cwt to $21.60 on lower-than-expected NASS prices reported to date for California rice.

This month's 2021/22 U.S. cotton supply and demand forecasts are unchanged relative to last month. The projected marketing year average price received by upland producers is also unchanged, at $0.90 per pound.

Commitment of Traders Report, Tuesday, March 8, 2022



Cash Market Basis Charts, Wednesday, March 9, 2022

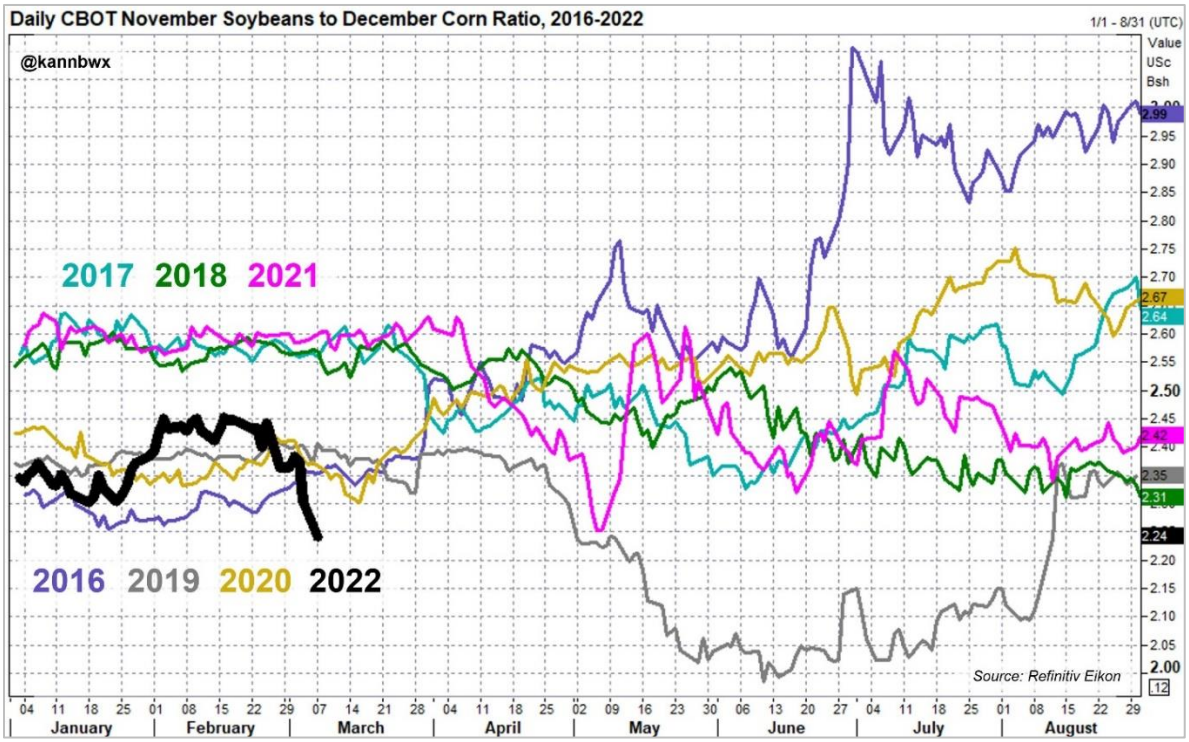


Corn

With the world's fourth-largest exporter of corn under attack (Ukraine) and spot corn trading near its highest level in nine years, the actual market price for corn is a long way from the USDA's February estimates. Given the limits of the WASDE and its focus on the 2021/22 season, there is only so much USDA will be able to change in March's report, but lower ending stocks of corn is apt to be one result. A Dow Jones survey of 16 analysts expects USDA to lower its estimate of U.S. ending corn stocks from 1.540 billion bushels to 1.476 billion bushels in 2021/22. So far, export sales and shipments of corn are down 19% from a year ago, below USDA's estimated pace, but a loss of exports in Ukraine could lead to a slightly higher U.S. export estimate. U.S. ethanol inventory has ballooned to its highest level in nearly two years, most probably slowing future production. However, ethanol production is up so far in 2021-22, 11% from a year ago, allowing room for another increase in USDA's estimate.

USDA's estimate of Argentine corn production is expected to decline from 54.0 to 52.0 MMT or 2.05 billion bushels- a little higher than the 51.0 million metric tons estimate from the Buenos Aires Grain Exchange. Ukraine's old-crop corn production estimate is not likely to change at this late date, but the export estimate could be reduced, due to the war. The market is highly concerned about Ukraine's ability to produce crops in 2022, but the 2022/23 season is not within the scope of the March WASDE.

The futures market is telling U.S. farmers that it needs them to plant corn this spring, more so than soybeans. Whether a strong corn acreage is possible- or if it has already been planned- is unknown.



The USDA released its' March WASDE on March 9, 2022. The most significant development currently affecting global feed grain markets in recent weeks has been Russia's recent military action in Ukraine. The conflict has involved two major grain-producing and exporting countries. The events occurring in Ukraine have disrupted physical, logistical, human, and market assets in the Black Sea region—which is an important supplier of wheat, feed grains, and sunflower products to the world markets.

An issue of immediate concern is Ukraine's ability to export the remaining share of its 2021/22 grain harvest. Under the normal (peaceful) circumstances of last month, Ukraine was projected to export a total of 33.5 million tons of corn by the end of the crop year. Since the beginning of the 2021/22 October-September crop year, Ukraine has already exported more than 17 million tons of corn, leaving about 16 million tons available for export later in the year. This month's projections are sharply reduced, such that Ukrainian exports of corn are projected at 27.5 million tons, a drop of 18 percent. There are at least three reasons why grain exports are projected to drop. The first is that the military action is expected to damage some of the stored grain—for example, there are reports of silos being hit by artillery fire. The second reason is that the Russian advance is harming physical Ukrainian infrastructure and the transportation of stored grain to the export ports on the Black Sea is becoming difficult or impossible. The third and most important reason is that the Black Sea ports have been closed and commercial shipping was all but suspended almost immediately after the beginning of the invasion. The insurance markets deem the Sea of Azov and the Black Sea (including waters close to Romania and Georgia) to be high risk with soaring premiums to match this perceived level of risk. The ports themselves became the front line, with Russian ground forces and the Russian Navy blockading (and bombarding) them. The vast bulk of Ukraine's grain exports flow out of Black Sea ports. Lower projected exports mean more corn will remain in Ukraine. Half of this grain is projected not to be exported at any time in the future, as some supplies either are destroyed or become unfit to use. The rest of this corn is projected to be stocked.

A sharp 6-million-ton cut in Ukrainian corn exports is bound to trigger substantial changes in global corn markets. This supply loss is expected to be partly offset by higher exports of the other major corn suppliers. However, any such increase in rest-of-the-world exports is not projected to make up for all the lost Black Sea exports, and, as such, the global corn trade is projected to drop by 2.4 million tons this month. This reduction, combined with the fairly low level of global corn stocks in major exporting countries and geopolitical uncertainty, has generated a grain price spike.

Substantially higher grain prices are expected to ration demand for grain and reduce imports in a number of countries. Before the Russian invasion, Ukraine was projected to be the world's third largest corn exporter (October-September trade year basis), following the United States and Argentina (and with Brazil close behind), supplying 17 percent of globally traded corn. The main foreign markets for Ukrainian corn in recent years have been China, the European Union, Egypt, Iran, and Turkey. However, Ukraine also exports a nontrivial amount of corn to other countries in North Africa, the Middle East, and Asia.

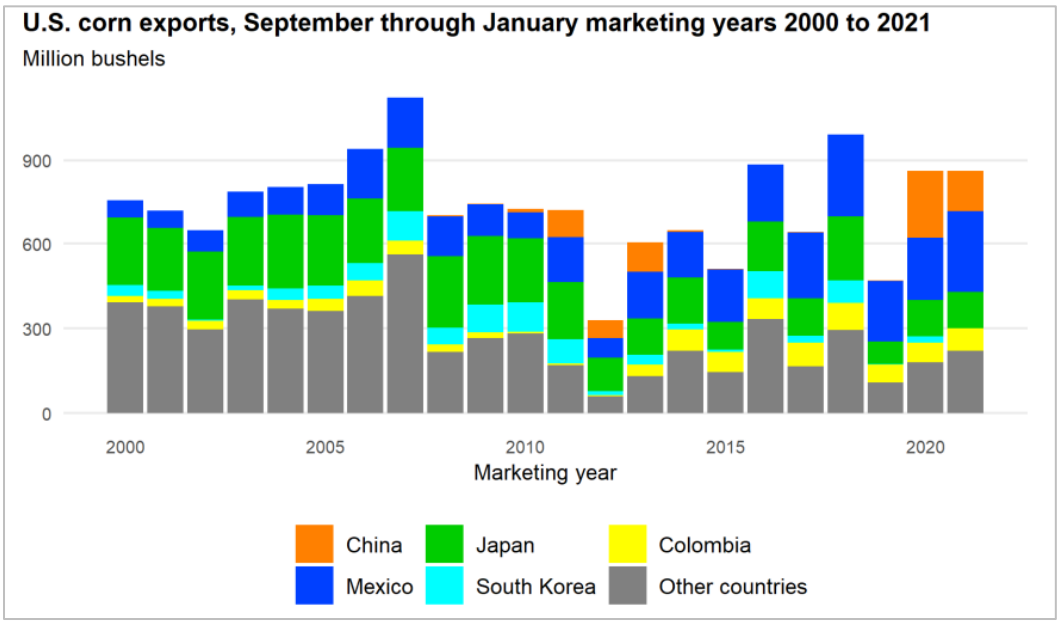
Surging global prices, following a sharp cut in Ukrainian corn exports, generate higher projected coarse grain exports by all the other major corn exporters: The United States, Argentina, Brazil, and South Africa. This year, India is expected to join this list by exporting more corn, due to higher world prices. Right now, the United States is the only large corn exporter with sufficient stocks to respond, and its exports are projected 2.0 million tons higher this month, to reach 63.5 million tons (up 75 million bushels to 2,500 million). Argentina and Brazil will largely re-enter export markets in a big way later in the year: Argentina in April and Brazil only in July after the beginning of its second crop corn harvest. Corn exports for both countries for 2021/22 are projected 0.5 million higher. South Africa is going to harvest corn in May-June, and despite lower projected output this month, is expected to export 0.3 million tons

more. Indian corn output got a large boost this month, and the country is currently projected to export an additional 0.3 million tons.

U.S. corn and feed grain markets are highly integrated into global agricultural commodity markets. Since the Russian military invasion of Ukraine, grains and oilseed prices across the globe have increased substantially, in both physical and financial derivatives markets (such as futures contracts). Additionally, markets have been very volatile—moving sharply from day-today and even hour-to-hour—as the geopolitical uncertainties compounded relatively tight global grain supplies. Data reported by the International Grains Council show that corn exported from Ukraine increased in price by 12 percent from February 1st to March 1st. The price increases are not isolated to Black Sea exports though—as increases over the same period have occurred in corn from Argentina (15 percent), wheat from France (26 percent), and barley from Australia (7 percent)—as indicative of the broad geographic and cross-commodity market impact.

Domestic cash markets for feed grains in the United States have also increased substantially since the Russian military actions in Ukraine began. Daily bids for corn at U.S. Gulf Export terminals have increased to more than $8.00 per bushel in March. Cash prices for corn and other feed grain markets have followed suit in many interior markets, as well. These new global market factors are now expected to be an important factor in the market outlook for 2021/22, as markets respond to changing developments occurring in Ukraine.

U.S. corn exports are projected higher than in the February WASDE report. For the domestic market year balance sheet, the increase is 75 million bushels higher, totaling 2,500 million bushels for 2021/22 (ending August 2022). Through January, the U.S. Department of Commerce's Census Bureau reports 863 million bushels of corn were shipped to foreign markets, compared with 861 million bushels during the same period in 2020/21. The peak of the U.S. export season typically occurs March and June, however. Export Sales report that remaining outstanding sales to be shipped to foreign markets are lower than they were at this point of the year in 2020/21.



Corn used for fuel ethanol is also raised in the March WASDE report to 3,350 million bushels— up 25 million bushels from the February WASDE report's projection. Ethanol production increased

significantly since the beginning of 2021/22, aided primarily by the availability of supplies from the 2021 crop and steadily recovering gasoline demand within the United States. The combination of lower corn prices and increasing fuel prices resulted in strong operating margins for dry mill ethanol plants beginning in the fall. Gasoline and ethanol stocks increased substantially beginning in January, however—coinciding with higher rates of COVID-19 infection during the rise of Omicron. While such a jump in inventories could result in weaker margins, global oil prices have increased considerably since February 24, 2022. As a result, the underlying demand for fuel and energy should help maintain attractive operating margins beyond any relatively short-term disruption in gasoline demand, due to the most recent wave of COVID-19 cases in the United States.

Corn ending stocks for 2021/22 are projected at 1,440 million bushels. A 100-million-bushel reduction from the February WASDE report, due to raised use projections and no changes to projected supplies. The season-average farm price for corn in 2021/22 is projected at $5.65 per bushel—up $0.20 from the February WASDE report. The national average priced received by producers for January 2022 was $5.47 per bushel, according to the NASS's latest Agricultural Prices report, released on February 28, 2022. Historically, most corn is marketed between September and January. Based on historical marketing patterns and the potential for substantially higher cash price levels for producers, the outlook is for relatively higher farm-gate prices and values for corn, compared with the February WASDE report projections.

Wheat

The volatile situation in Ukraine, short-covering panic in grains, and extremely high grain futures prices has catapulted commodity volatility to an all-time high. Prices for all commodities increased beginning February 22nd when Russia made initial steps to initiate military operations in Ukraine. Prices rose further during overnight trade on the evening of February 23rd when President Putin announced a full-scale military invasion of Ukraine. This speech was released at 6 am on February 24th in Moscow which was 9 pm, February 23rd in Chicago. The market reaction was swiftest and strongest in SRW wheat that market locked up the limit by 11pm Chicago time on February 23rd and remaining up the limit throughout most of February 24.

The spot price of Chicago wheat traded at new all-time highs, above the 2008 high of $13.34 1/2, and spot KC wheat traded above $12 for the first time since 2008. Wheat markets started trending higher in 2020, mostly drifting on corn and soybeans' tailwinds as Chinese demand pushed those prices up. In 2021, drought led to the smallest U.S. crop in 19 years. As Russia began positioning troops on Ukraine's border and concerns about conflict grew, so did worries about Ukraine's ability to export. Ukraine is the world's largest exporter of sunflower oil, third-largest exporter of barley and fourth-largest exporter of corn and wheat.

The May Chicago wheat futures contract rose by as much as 41% to $12.09, a record-breaking weekly gain that reflects global fears about wheat supplies and exports amid Ukraine and Russia's war. The May Kansas City hard red winter wheat contract finished the week 36% higher than last Friday, closing at $12.14 1/2. The impact rippled across the Plains this week as many grain elevators stopped issuing bids or accepting offers from farmers to sell wheat.

However, winter wheat futures posted sharp losses, led by a $1.14 1/2 plunge in the May SRW contract, which finished at $10.87. May HRW wheat dropped 48 3/4 cents to $10.65 3/4. May HRS wheat fell 29 cents to $10.55. There is no fundamental rhyme nor reason behind price action in the wheat market, as price moves continue to be driven by money flow. That's unlikely to change anytime soon, meaning price volatility is likely to remain extreme.

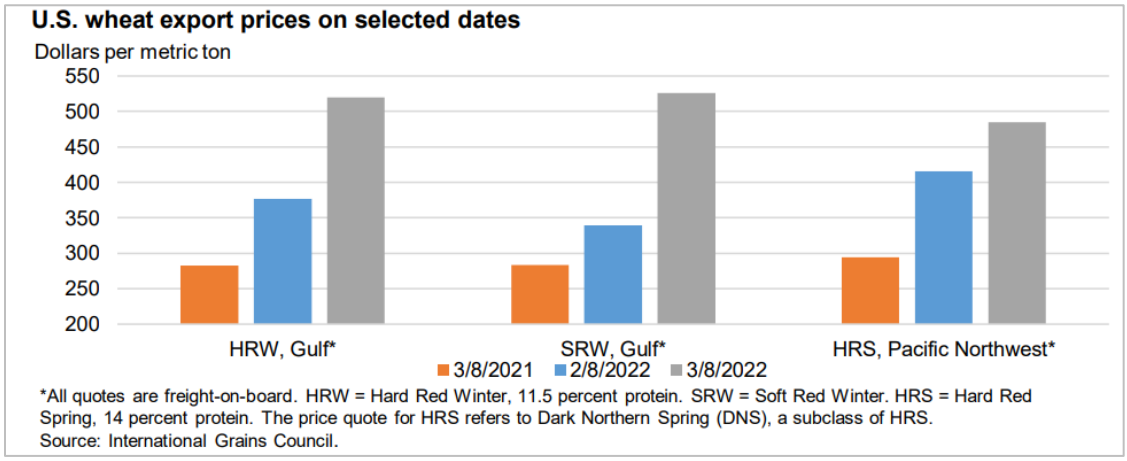
In Europe, May wheat on Paris-based Euronext ended down 1.0% at 368.25 euros a ton after rising as high as 390.25 during the session. Talk that French wheat could supply most of a large tender purchase by Algeria fueled expectations of extra demand for European Union wheat to replace Ukrainian and Russian supplies, which account for about 30% of global wheat exports.

The U.S. Agriculture Department said on Thursday morning that weekly export sales of wheat totaled 370,200 tons. Analysts' forecasts for the weekly total ranged from 250,000 to 700,000 tons.

Wheat futures were mostly lower, with nearby months posting more steep losses as the market pulls back from the recent historic surge. The market sold off under renewed pressure from speculative profit taking despite the ongoing disruption of Black Sea wheat exports by Russia-Ukraine war. Concerns high prices have shut down demand are weighing heavily on prices following a disappointing weekly export sales total and Wednesday's higher U.S. ending stocks forecast from USDA. Futures have plunged despite news of a large Algerian import purchase at sharply higher prices. Despite the weakness, wheat prices should remain highly volatile in coming days due to the uncertainty surrounding Black Sea exports and Ukraine's 2022 crop production as well as crop production prospects in the U.S. and China.

USDA has estimated 73% of U.S. winter wheat area was under moderate or more severe drought as of Tuesday, unchanged from a week earlier and more than double a year earlier. That includes 91% of the wheat area in the top producing state of Kansas along with 99%-100% of the area in the states of Texas, Colorado, Nebraska, Montana, Washington and Oregon.

U.S. prices have been particularly underpinned by this development with quotes for Hard Red Winter (HRW) and Soft Red Winter (SRW) commanding the largest price increases (up more than 80 percent from last year) as these classes are the most directly in competition with Russian and Ukrainian wheat. HRW prices have also been impacted by concerns of drought in major producing areas. U.S. Hard Red Spring (HRS), typically the highest priced U.S. wheat, is currently priced lower than both HRW and SRW.

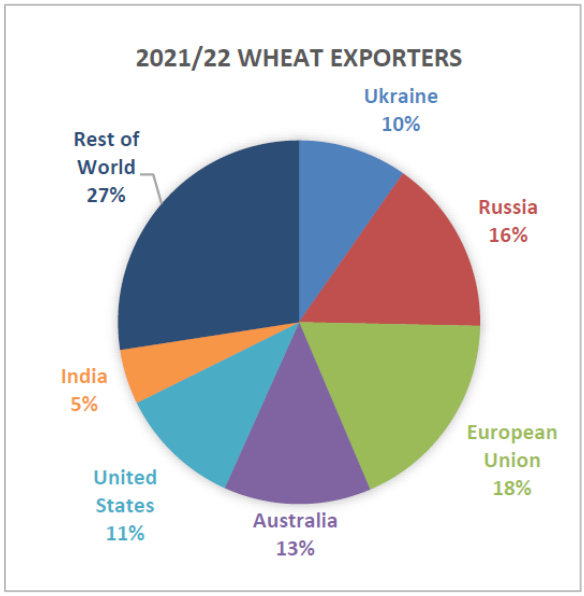


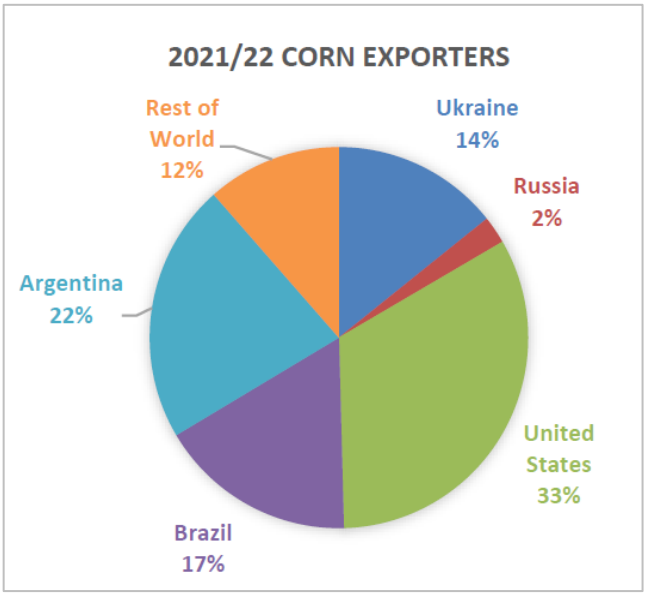
U.S. export commitments (the sum of total accumulated exports and outstanding sales) as of February 24th represent around 84 percent of the revised 2021/22 marketing year export forecast (figure 2). This percentage is below the 5-year average of 88 and indicates that a larger-than-normal percentage of sales are yet to be accounted for in order for the United States to reach even the revised marketing year export forecast. There is increasing uncertainty in global wheat trade regarding the effects of the ongoing conflict between Russia and Ukraine. With global wheat prices historically elevated and volatile, it is expected that importers will ration demand by at least delaying some purchases. It is also possible that some

importers may eventually turn to U.S. wheat when other exporters lack sufficient supplies. However, the current large price premium for U.S. wheat over other key competitors (discussed in the international section of this report) reduces the likelihood of a significant pivot towards U.S. wheat in the near-term. Weighing these considerations, U.S. exports have been lowered 10 million bushels to 800 million this month, which would be the lowest U.S. exports since 2015/16.

The Russo/Ukrainian war continued to fuel concern over disruptions to the global grain trade, raising questions over when Ukrainian shipments will resume as well as how much seeding can be done as war rages. While HRW contracts and several SRW contracts retreated from limit-up gains, prices likely will remain elevated. USDA's monthly WASDE report will likely take a back seat to geopolitics. However, ending global wheat stockpiles were already heading for a five-year low in 2021/22 before the Russian invasion of Ukraine. Prospects for wheat prices look much more bullish into 2022/23 with war in Ukraine and a threat of drought hurting crops in North America and southern Europe. Estimates for the new season, however, are not included in the March WASDE report.

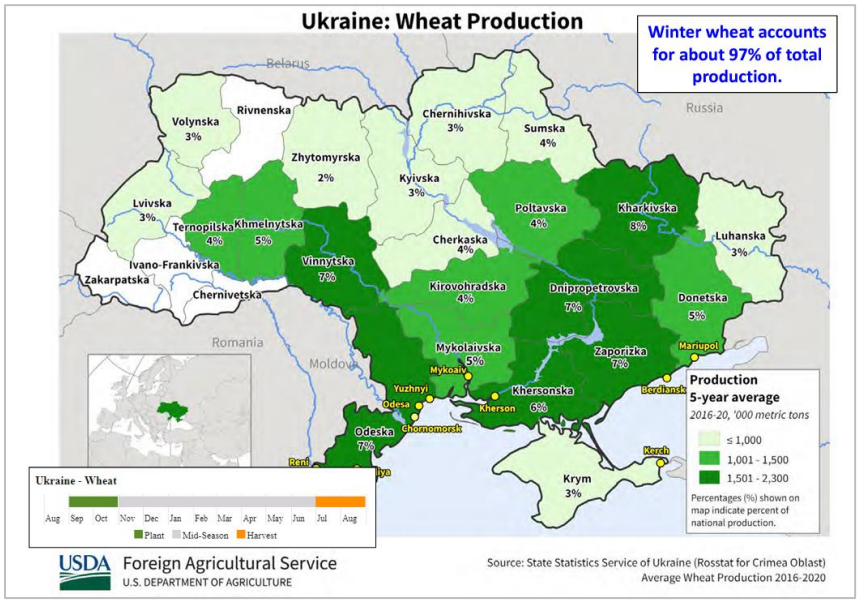
Ukraine accounts for 10 percent and Russia for 16 percent of global wheat exports in marketing year 2021/22, which began in July. The majority of Ukraine's exports are shipped in the first few months of the marketing year, but the closure of ports is currently limiting additional exports. Russia had already been taxing exports and implemented an export quota on February 15. Russia exempts neighboring Eurasian Economic Union (EAEU) countries from the export quota and maintains access to ship out of the Caspian Sea. In addition to strong exports from the European Union, India and Australia are expected to ramp up exports to record levels since both have record crops and competitive prices. Meanwhile, global trade is adjusted slightly lower this month as sharply higher wheat prices are trimming demand with importers reducing and deferring purchases and relying on existing stocks.





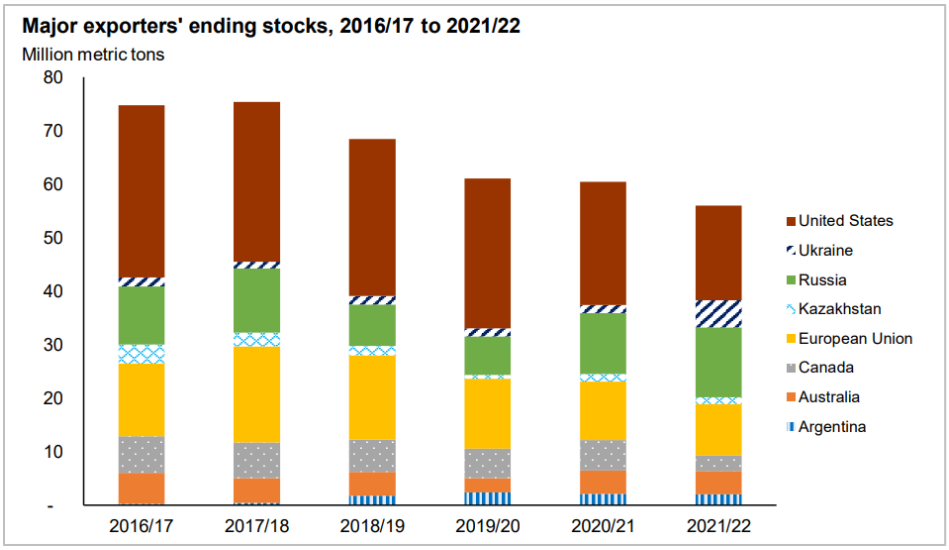
In 2020/21, Russia and Ukraine accounted for 28 percent of wheat exports. Amid the Russo/Ukrainian conflict, global prices rose as exports are expected to be severely hindered for the Black Sea region since Ukraine's ports have remained closed since the last week of February. Ukrainian wheat exports are revised down 4.0 million metric tons to 20.0 million and Russian wheat exports are lowered 3.0 million metric tons to 32.0 million. Figure 6 shows how average wheat production in Ukraine aligns with their major seaports. Shipping through the Black Sea is the primary artery for wheat exports for both Ukraine

and Russia. Along with decreased trade flows through the Black Sea, Russia is facing financial sanctions that creates an unstable banking system as well as depreciating the value of the Russian ruble. All of these factors contribute to expectations of substantial disruptions in exports for both countries, although some trade may continue by rail to nearby markets. Russia will also be able to export some shipments via the Caspian Sea to markets such as Iran, but the ramifications of financial sanctions still loom large. With substantial disruptions to trade in this region, part of the global demand will be picked up by India and Australia, who have ample tradable supplies and are competitively priced.



With global exports down 3.6 million metric tons to 204.8 million, major wheat importers will have to ration demand if they are unable to find alternative suppliers or willing to pay the higher prices. Egypt is one of the major importers of both Russian and Ukrainian wheat. In the 2020/21 trade year, Egypt accounted for 15 percent of Ukraine's wheat exports and 21 percent of Russia's shipments. Egypt has canceled their two latest tenders due to high prices and lack of offers. Egypt is likely to delay shipments and wait for harvest to begin in mid-April. Imports for Egypt are revised down 0.5 million metric tons to 12.5 million. In 2020/21, Turkey accounted for 18 percent of Russian exports. Rising global prices and the depreciation of the Turkish lira (down 48 percent year-over-year relative to the U.S. dollar) will make it very difficult for Turkey to continue to import wheat. Turkey imports are lowered 1.0 million metric tons to 10.0 million.

Global ending stocks are higher this month (+3.3 million metric tons to 281.5 million) as the increase for major exporters' ending stocks offsets the reduction for other exporting and importing countries. Major exporters' ending stocks are projected to increase 5.0 million metric tons to 56.0 million as Ukraine and Russia are unable to export their supplies. Ukraine's ending stocks are up 3.0 million MT to 5.0 million and Russia is up 2.5 million metric tons to 13.1 million.



Soybeans

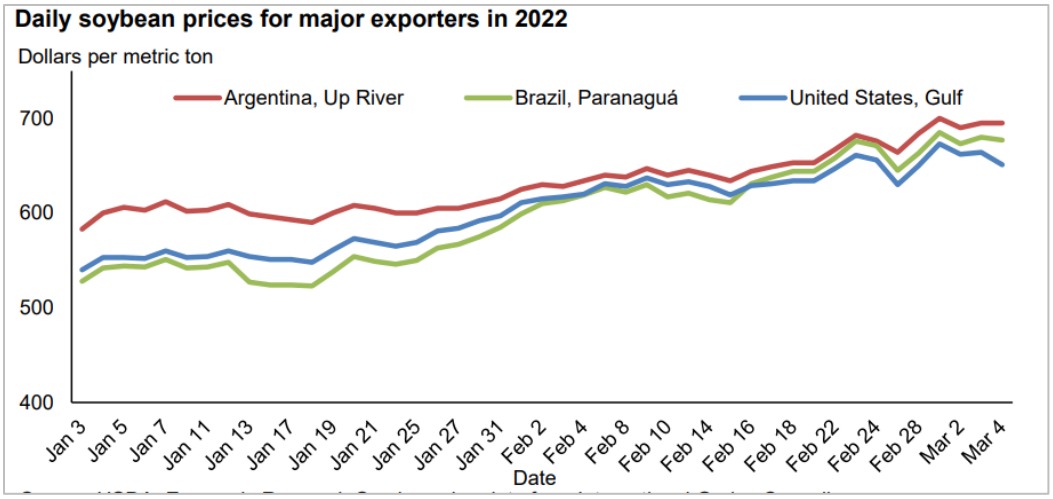
Similar to corn, spot soybeans are also trading near their highest prices in nine years and are a long way from the world described by USDA's supply and demand estimates in February. Dow Jones' survey expects USDA to lower its estimate of U.S. ending soybean stocks from 325 million bushels to 270 million bushels, largely influenced by drought in South America.

Sales and shipments of old-crop soybeans are down 16% from a year ago and are below USDA's estimated pace, but there is a chance Brazil's smaller soybean crop could drive China back to the U.S. for more old-crop purchases, in addition to the increased number of new-crop purchases that has already started.

Soybean crush value continues to offer a historically rich premium above the price of soybeans, which is keeping crush demand strong for U.S. soybeans. Friday's report from USDA showed a bushel of $16.56 soybeans in Illinois could produce $19.95 worth of meal and oil, a strong enticement to keep crushing.

Dow Jones expects USDA to lower its estimate of world soybean stocks from 92.83 million metric tons to 88.9 million metric tons, or 3.27 billion bushels. Analysts expect USDA to lower its estimate of Brazil's soybean production from 134.0 million metric tons to 128.2 million metric tons, or 4.71 billion bushels, but that might be too much of a drop to expect from USDA. USDA's soybean production estimate for Argentina is expected to decline from 45.0 million metric tons to 42.9 million metric tons or 1.58 billion bushels.

Global oilseed complex prices rallied during February due to the dry weather in South America and further reductions in soybean crops. In Brazil, Paranaguá freight on board (FOB) soybean prices increased by more than 13 percent since the beginning of February, reaching an average of $678.00 per metric ton in the first week of March. At the same time, U.S. Soybean Yellow #2 prices in the Gulf rose 6 percent to $651.00 per metric ton. Therefore, U.S. soybeans are currently the most competitively priced in the world market, which is unusual for this point in the year.



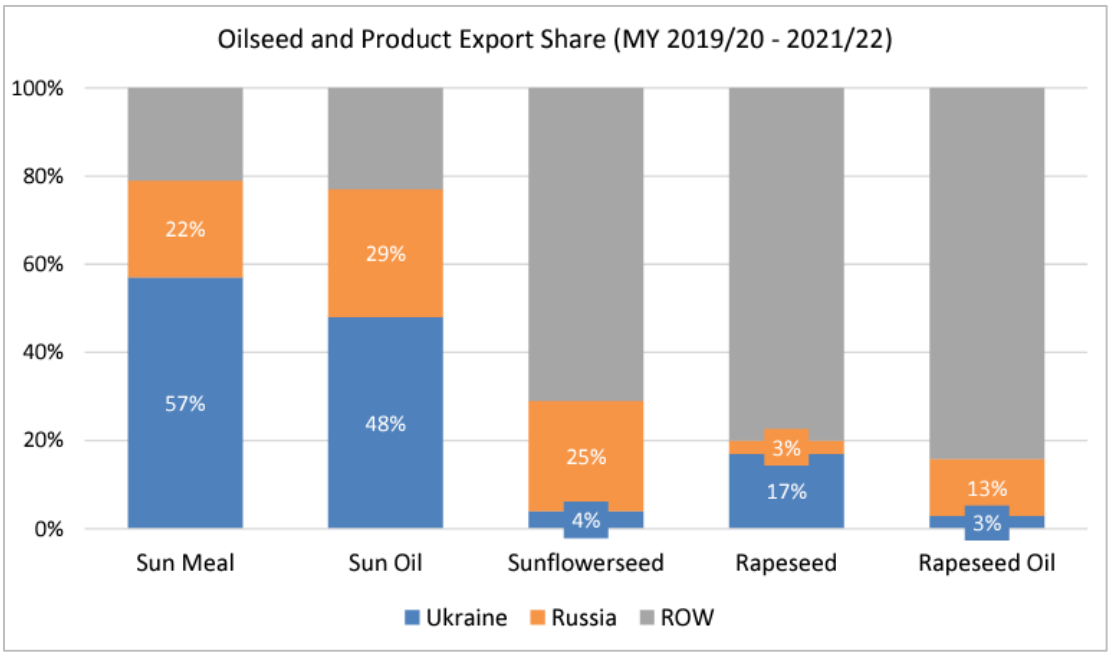
The shrinking prospects for South American soybean crops have increased the value of U.S. soybean stocks. For instance, February cash soybean prices at country elevators in Central Illinois increased by $1.80 per bushel to $15.80. Throughout the country, cash prices rallied toward $16.00 per bushel by the end of February. Those gains are sufficient to boost the USDA's forecast of the 2021/22 average soybean price received by farmers to $13.25 per bushel, up from $13.00 last month. Aligning with the soybean price rallies, Central Illinois soybean meal prices rose in February to an average of $460.00 per short ton—up from $421.00 in January. As a result, the 2021/22 season-average soybean meal price was increased to $420.00 per short ton from $410.00 last month.

Despite these high soybean prices, soybean crush margins remain profitable for U.S. soybean crushers who processed 194.30 million bushels of soybeans in January, marginally below December levels. Unchanged expectations in 2021/22 soybean crush volume also leaves soybean meal supply and use unchanged this month. Moreover, the domestic production of soybean oil is unchanged this month at 26.2 billion pounds. Imports of canola, sunflower seed, and palm oil supplement the U.S. supply of vegetable oils. U.S. canola oil imports are expected to reach 3.98 billion pounds in 2021/22—reducing U.S. supplies of the commodity by 421 million pounds from last year. Sunflower seed oil imports are also reduced by 50 million pounds this month to 275 million as Ukraine is one of major suppliers of U.S. sunflower seed oil.

With a lower supply of global sunflower seed oil, a modest increase in U.S. soybean oil export sales is anticipated, hence the 2021/22 forecast is revised up this month by 200 million pounds to 1.63 billion. In contrast, increases in soybean oil prices is expected to limit the 2021/22 domestic use of soybean oil for biofuel production. Hence the soybean oil for biofuel production forecast is reduced from 11 billion pounds to 10.7 billion. The use of soybean oil in food, feed, and other industrial use categories increases this month by 100 million pounds as soybean oil is the most competitive oil. As a result of these market dynamics, season-ending stocks of soybean oil are expected to be just over 2.08 billion pounds, or 55 million pounds below last year's level.

In response to tighter global vegetable oil markets, U.S. soybean oil prices rallied in February— Central Illinois prices reached 70.91 cents per pound. Consequently, the 2021/22 season average soybean oil price forecast increases to 68.0 cents per pound from 66.0 cents last month, which is 20 percent higher than the season-average price in 2020/21. In addition to vegetable oil prices that have been elevated since early 2021, volatility caused by the current interruption of sunflowerseed oil supply in the Black Sea region may further ration demand of vegetable oils—particularly in the industrial sector.

Russia's invasion of Ukraine on February 24th has already significantly impacted global markets. Since the start of the conflict, crush facilities and ports in Ukraine have suspended operations, and other countries have imposed sanctions on Russia limiting trade from the region. This month's forecast represents an initial assessment of the short-term impacts as a result of this action.



In a typical year, Ukraine and Russia account for about 80 percent of global sunflower seed meal and sunflower seed oil trade. Due to port and crushing facility closures in Ukraine, sunflower seed and product exports have been cut this month: seed exports are down 57 percent, oil exports are down 14 percent, and meal exports are down 13 percent. As a result, Ukraine sunflowerseed ending stocks are up nearly seven-fold this month to 1.9 million tons. Similarly, domestic consumption (feed and waste) has more than tripled this month on an increase in damaged and spoiled product as well as increased full-fat feeding while meal production is halted. In Russia, export reductions are more muted with exporters facing uncertainties in Black Sea shipping routes and the impacts of sanctions. Russia exports are down 33 percent for sunflowerseed, 4 percent for sunflowerseed oil, and 3 percent for sunflowerseed meal.

While Russia and Ukraine account for the majority of sunflowerseed product exports, sunflowerseed oil and sunflowerseed meal are important but relatively small in terms of global consumption. In a typical year, sunflowerseed oil accounts for about 9 percent of global vegetable oil consumption and sunflowerseed meal accounts for about 5 percent of total soybean meal equivalent consumption of protein meals. Uncertainty over Black Sea exports have led competing Argentina prices to jump 47 percent for sunflowerseed oil and 27 percent for sunflowerseed meal in less than 2 weeks (Feb 23-Mar 8, IGC Argentina FOB Up River).

A lack of rainfall in Rio Grande do Sul, Paraná, and Mato Grosso do Sul during February increased evaporative stress on soybean crops. These three major soybean-producing states have been experiencing severe drought conditions for the majority of the growing season. In Rio Grande do Sul, February weather is highly influential on the crop development and quality of crops. An insufficient amount of rainfall has been received by Rio Grande do Sul in February. In addition to the rainfall deficit, temperatures in Rio Grande do Sul have reached record highs for extended periods of time. A reported 18 percent of the Rio Grande do Sul soybean crop was flowering and 56 percent filling pods as of March 3, 2022. Hence,

portions of the crop may be salvaged if weather conditions improve in March. Overall, roughly 14 percent of the sown soybean acreage in Brazil is estimated to be impacted by this drought.

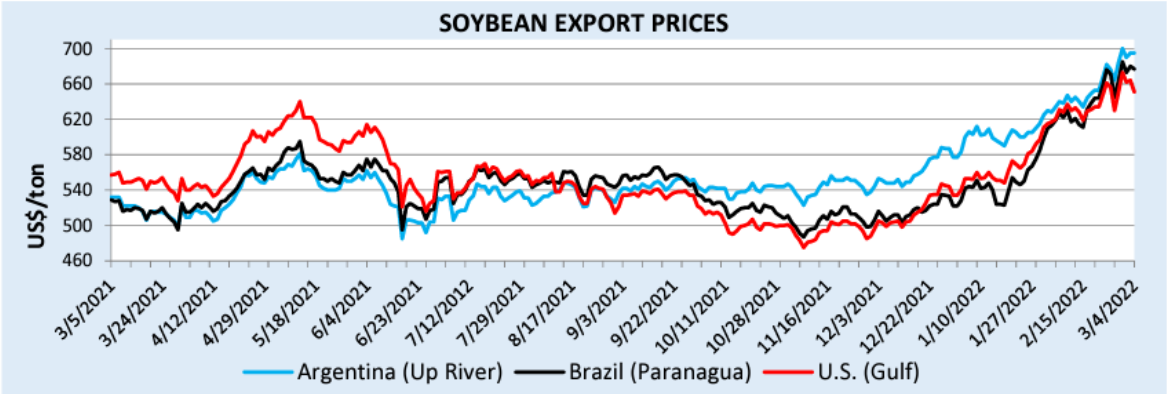
In contrast, much of the northern soybean-producing regions in Brazil received an abundance of rainfall during February 2022. The heavy rains—ranging from a cumulative total of 15 to 17 inches—slowed harvest. Nevertheless, the overall harvest in Brazil is reported as being 50.5 percent complete as of March 7th, 9 percentage points ahead of the 5-year average. The 2021/22 soybean yield estimate for Brazil is lowered from 3.32 metric tons per hectare from last month's estimate to 3.13 metric tons. Despite a slight increase in the harvested area projection to 40.6 million hectares, the soybean production forecast is lowered by 7 million metric tons this month to 127 million.

Impacts of the decreasing Brazilian soybean supply have reverberated through the domestic and global markets. Brazil is expected to export 85.5 million metric tons this marketing year. Although this is 5 million metric tons lower than forecasted last month, they are expected to eclipse last year's exports by 3.8 million metric tons. In the first 2 months of 2022, Brazil exported 8.7 million metric tons of soybeans. For reference, this is roughly 6 million metric tons higher than the same period in 2021. As a result of lower soybean supply, USDA lowered the 2021/22 Brazilian soybean crush estimate to 46.25 million metric tons, down 650,000 metric tons from the previous forecast.

Despite plentiful rainfall and favorable temperatures in major Argentine soybean crop regions, the drought continues to linger in parts of Argentina, particularly in the northeastern portion of the country. This region includes the Paraná River—a major Argentine waterway used to transport soybean products for shipment from crushing facilities. Thus, this drought has hindered Argentine soybean production while also raising the marginal cost of crushing soybeans.

Lower South American soybean supply has resulted in a 6.4-million-metric-ton reduction in global exports. Soybean shipments to China have been lowered by 3 million metric tons to 94 million this month. In addition, Bangladesh, Egypt, the European Union, Pakistan, and Russia are expected to import less soybeans in 2021/22. Global stocks have also been decreased by 2.9 million metric tons to 90 million; if realized, this would be the tightest volume of global soybean stocks since 2015/16.

Soybean prices continued to rise in February due to the drought in South America. Brief rains in late February relieved pressure on rising soybean prices for 1 day before peaking in early March. Prices soared to at least 2decade highs in Argentina and 10-year highs in the United States and Brazil.



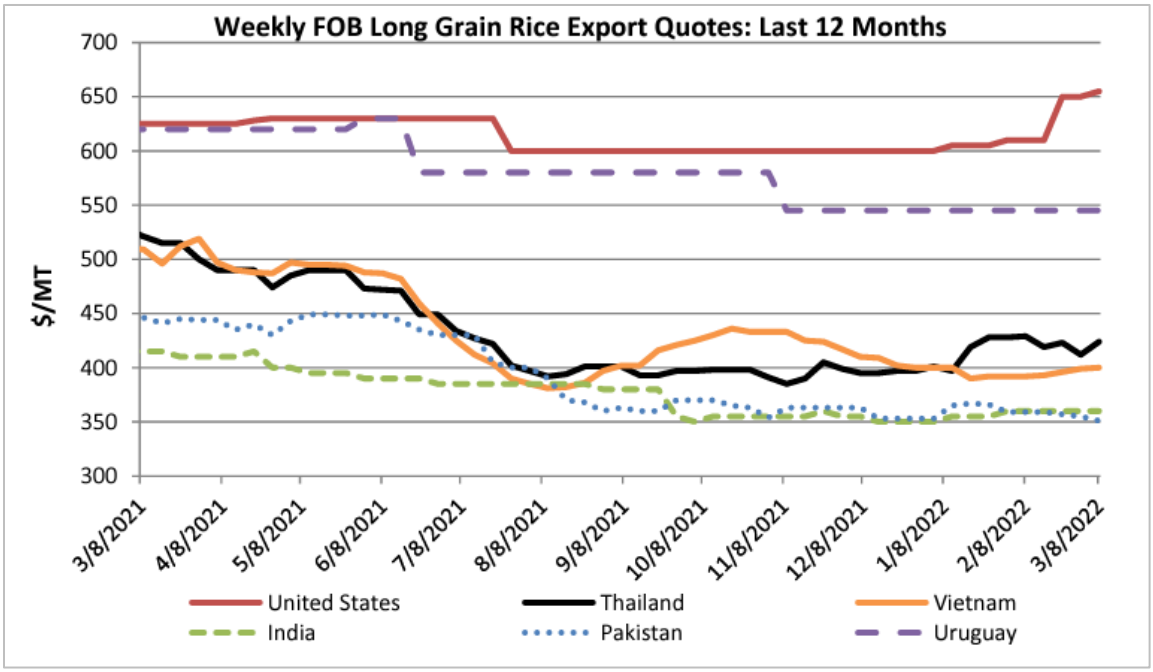
Rice

In the US, all eyes are on input cost. Inflation and increased energy costs were both factors well before Russia invaded Ukraine, and both have been exacerbated by the conflict. Just this week, inflation hit a new record high at 7.9%, and fuel—even red diesel for farm operations—is reaching all-time highs. There was cautious optimism only weeks ago that the US long grain rice crop might be able to hold planted acres steady with last year, but that hope is quickly dwindling as input costs rise faster than at any time in recent history. It would not be a stretch to assert that the US long grain crop will drop by another 15% this year. In 2020, planted acres were 2.96 million acres. Last year in 2021, planted acres dropped 17% down to 2.53 million acres. This year, one can expect another 15% decrease, down to 2.15 million acres. This helps explain why long grain prices have found firm-footing despite lagging milled rice exports.

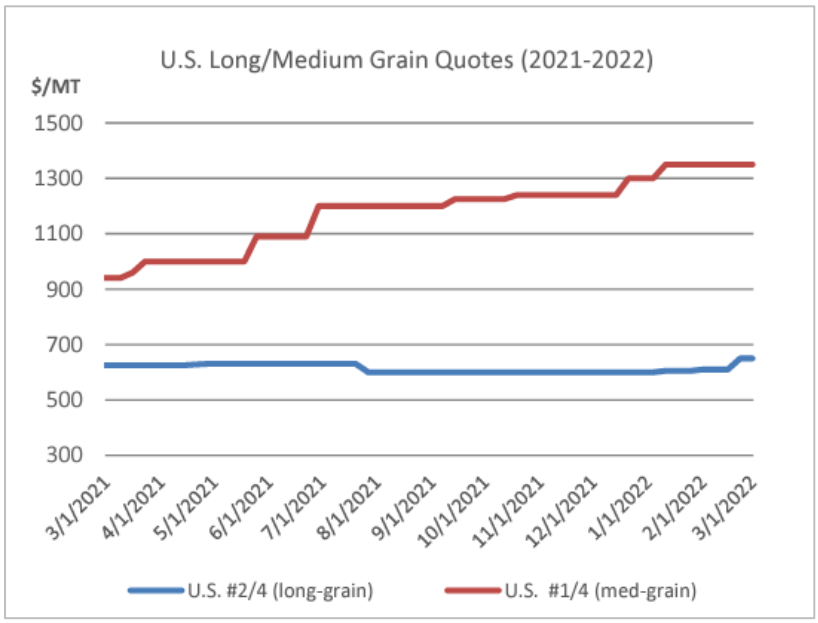
In South America, Brazil is particularly impacted by the Russo/Ukrainian conflict. Brazil imports over 80% of its total fertilizer needs, and almost 100% of its nitrogen fertilizer from Russia. To circumvent the obvious concern and ensure fertilizer supplies for coming crop cycles, the Brazilian government has announced an emergency National Fertilizer Plan in which they intend to be able to produce 40% of their own fertilizers by the year 2050. The problem is that Brazil currently only produces about 4% of their own nitrogen-based fertilizers. This concern is obviously compounded by the drought, and creates an expectation that the harvest of their soybean, corn, sugar, and rice crops will be lighter both in acreage and in yields. This is one more reason that US farmers will cycle out of rice and into soybeans; China's demand for soybeans doesn't fade with the acres reduced by drought or yield reduced by unavailable fertilizer.

The global rice market has been surprisingly consistent since the turn of the year. As it relates to the US, the supply-driven market could be upgraded from sideways to bullish, as long as we are looking at it with cautious optimism. A shorter supply has been the expectation all year based on the increased costs of inputs, and is only reinforced by the current geopolitical environment. The one thing that would confirm a bullish market is a marked increase in milled rice long grain exports—they have been steady, but paddy sales have been a bit stronger by comparison. Iraq would change the picture in an instant, but that doesn't look to be on the short-term horizon.

U.S. prices increased by $45 to $655/ton amid tight domestic stocks. Uruguayan prices remained at $545. Thai quotes declined by $5 to $424/ton, reflecting a weakening Thai baht and reduced demand. Vietnamese prices were up $8 to $400/ton amid tighter supplies of white rice. Pakistani prices declined by $8 to $351/ton with ample supplies, while Indian prices rose $5 to $360/ton.

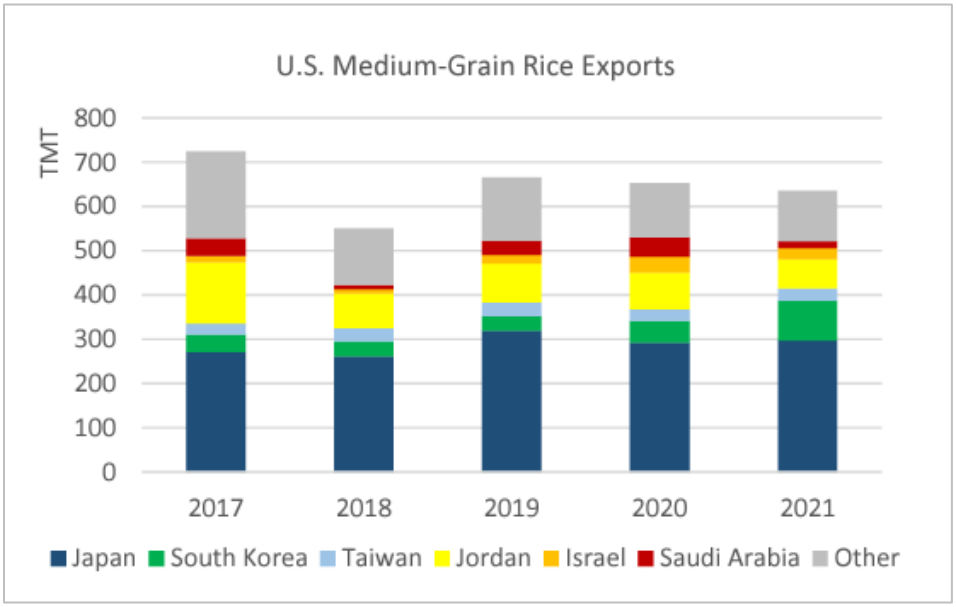


U.S. medium-grain export quotes have surged to a record $1,350/metric ton, up more than 40 percent from last year. In contrast, quotes for long-grain rice, which is primarily grown in the Mississippi Delta region, have remained relatively steady over the past year. The increase in price for medium-grain is due to tight domestic supplies in California where the bulk of U.S. medium-grain rice is produced. The 2021 crop in California was impacted by a severe drought which cut U.S. production by approximately 18 percent, driving up prices. Water availability in California and high costs for other agricultural inputs will remain a challenge to production and exports in 2022/23.



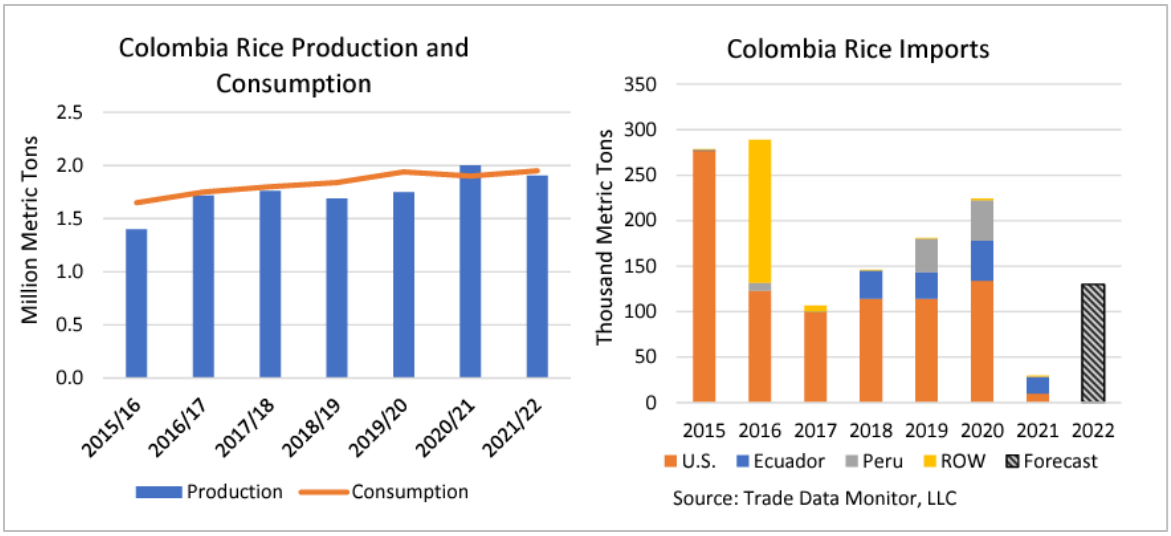
Record-high prices are a key factor driving forecasted exports almost 24 percent lower than the prior market year. According to U.S. Export Sales data, from the beginning of August through February 24, accumulated exports of medium- and short-grain rice were down 31 percent and outstanding sales were

more than 26 percent behind last year. While U.S. exports are steady to East Asia, especially Japan, Korea, and Taiwan, exports are faltering to the Middle East. In 2021, U.S. medium-grain exports to the Middle East were down over one-third from 2020, with the largest reduction in Saudi Arabia.



The United States is a dominant player among medium- and short-grain exporters, which include China, Australia, Turkey, and the European Union. This year, the United States faces increased competition from other major medium-grain exporting countries due to its smaller crop. China has boosted exports to price-sensitive African markets. In addition, following a larger 2021/22 crop, Australia is expected to expand its exports to the Middle East, as it historically boosts exports when supplies are high.

Colombian rice imports are forecast to rebound sharply in 2022 but fall short of levels from prior years on a smaller crop and rising domestic prices. The 2021/22 crop is estimated to be 1.9 million tons, down 100,000 from the 2020/21 crop. Rice is a staple food in Colombia, but production does not typically meet domestic demand. The smaller crop combined with limited imports in the previous year have tightened supplies and caused prices to rise after trending down last year. In February 2022, Colombian retail rice prices rose to $780/ton, up $50/ton from the prior month.



Although U.S. export prices are competitive, trade is limited by a high import tariff. Under the United States-Colombia Trade Promotion Agreement, the import tariff is scheduled to decline annually and is set at 49.2 percent in 2022, compared to the Most Favored Nation tariff of 80 percent. In addition, U.S. exporters can bid on a specific amount of the duty-free tariff-rate quota at auctions 3 times per year. With Colombia's large crop in 2020/21 and declining domestic prices, the U.S. tariff-rate quota was not filled for the first time since implementation of the trade agreement in 2011. In a sharp reversal, the first quota auction this year, held for 85,913 tons of U.S. rice, was fully awarded. Two other smaller quota auctions will take place in June and October.

For the first time in over 10 years, the United States was not the major supplier to Colombia in 2021. Last year, Ecuador was the top supplier with 18,000 tons compared to 10,000 tons supplied by the United States. In 2022, with the successful auction results, the United States is expected to become the largest supplier once again.

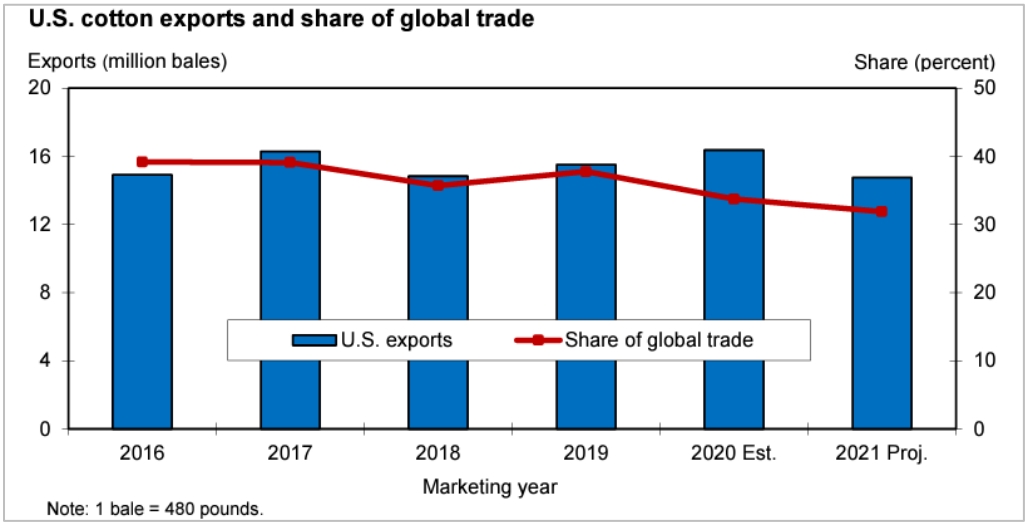
Cotton

U.S. cotton production in 2021/22 remains estimated at 17.6 million bales (17.25 million bales of upland and approximately 367,000 bales of extra-long staple). The latest estimate is nearly 21 percent above the 2020 crop but equal to the 3-year average. USDA will release the final U.S. cotton production estimates for the 2021 crop on May 12th. Based on the current production estimate and beginning stocks of 3.15 million bales, the 2021/22 cotton supply totals nearly 20.8 million bales, about 1.1 million below last season and the lowest since 2015/16.

U.S. cotton demand in 2021/22 is projected at 17.3 million bales, 8 percent below 2020/21 and—like supply—the lowest in 6 years. While U.S. cotton mill usage is estimated at 2.55 million bales this season—6 percent above 2020/21—exports are forecast at 14.75 million bales, 10 percent below last season and the lowest shipment level since 2015/16. Based on data through the first 6 months of 2021/22, U.S. textile mills used nearly 1.25 million bales of cotton, 7 percent above the comparable period of 2020/21, as the industry continues to improve from the decline associated with the coronavirus (COVID-19) pandemic. Based on the latest estimate, U.S. cotton mill use is expected to follow a similar pattern over the last half of the season.

Meanwhile, modest U.S. cotton supplies early in the season, harvest delays, and logistical issues disrupted normal seasonal shipping patterns this year. Through the first 7 months of 2021/22, U.S. cotton exports

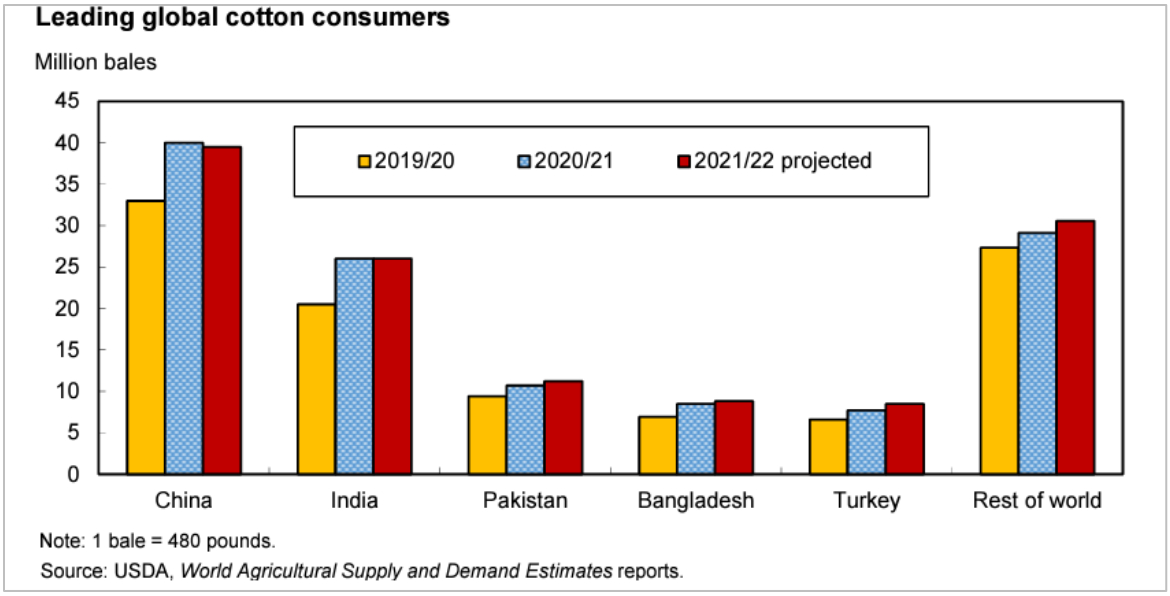
totaled only 5.8 million bales, or 39 percent of this season's forecast. However, shipments trended higher in recent weeks and are expected to remain strong through the end of the season. Nevertheless, U.S. cotton exports are forecast 10 percent lower in 2021/22 at 14.75 million bales. Global cotton import demand is also projected to decrease in 2021/22, with exports by Brazil and India—the second and third largest exporters— likewise expected lower. Based on the 2021/22 export projection, the U.S. share of global trade is forecast at 32 percent, compared with the 3-year average near 35.5 percent.



With U.S. cotton production above the demand projection, 2021/22 U.S. ending stocks are forecast 11 percent higher (350,000 bales) but remain relatively low at 3.5 million bales. As a result, the 2021/22 U.S. stocks to use ratio (STUR) is forecast at 20 percent, compared with 17 percent last season and 41 percent in 2019/20. Based on the U.S. and world cotton supply and demand estimates and recent prices, the 2021/22 average U.S. upland cotton farm price remains forecast at a record 90 cents per pound, compared with the final 2020/21 estimate of 66.3 cents.

Global cotton consumption in 2021/22 is projected at a record 124.5 million bales, 2 percent above last season as overall global economic conditions—and consumer demand for cotton products, in particular—have improved. This season's growth rate is much closer to the long-run average, compared with 2020/21's annual growth of 17.6 percent—the highest in over a century. Despite much higher world cotton prices, this season's world mill use is forecast to increase a modest 2.5 million bales and surpass 2006/07's high of 124.2 million bales.

Although China and India remain the leading cotton-spinning countries, the 2021/22 mill use increase is led by many of the smaller-spinning countries. The top 5 countries are expected to account for 75 percent of the world cotton mill use in 2021/22, slightly below the year before. For China, cotton mill use is forecast at 39.5 million bales, 1 percent (500,000 bales) below 2020/21, which was the highest since 2017/18. China is expected to account for 32 percent of global cotton mill use this season. Cotton mill use in India is projected flat, year-over-year, albeit at a record 26 million bales as its textile industry has expanded. Cotton mill use in India is forecast to account for 21 percent of the global total in 2021/22.



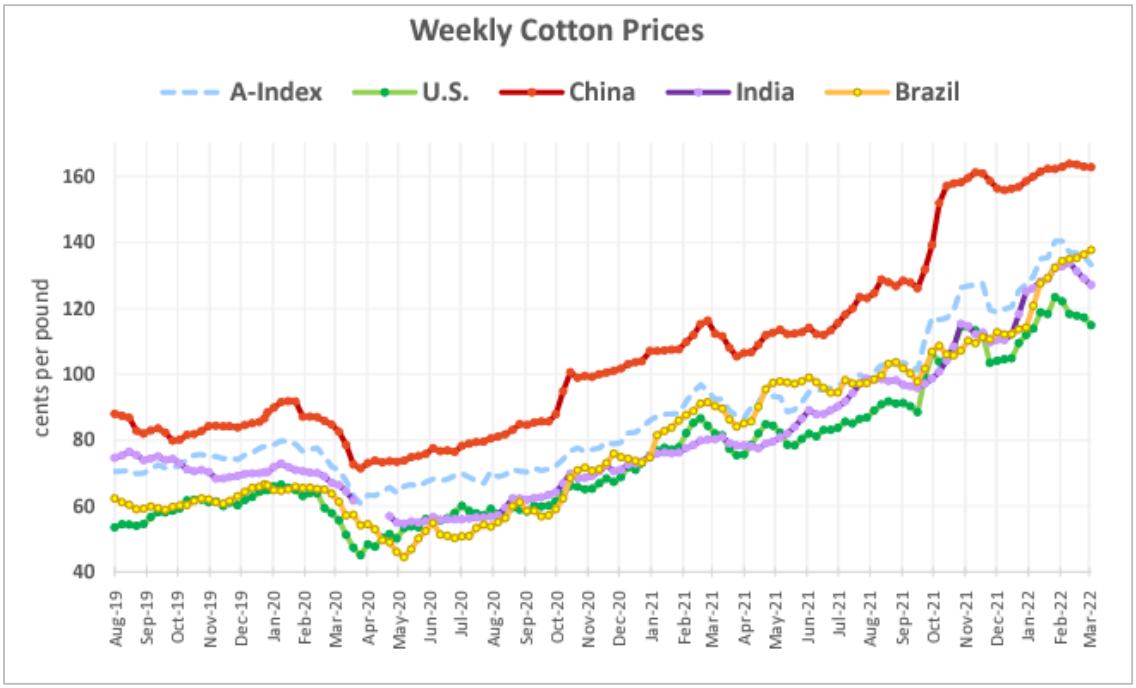
Meanwhile, cotton mill use is forecast to increase in Pakistan, Bangladesh, Turkey, and Vietnam in 2021/22. In Pakistan—the third largest spinner of cotton—mill use is projected at 11.2 million bales (+500,000 bales) this season, the highest since 2007/08 when Pakistan used 12 million bales. Mill use in Bangladesh is forecast at 8.8 million bales (+300,000 bales), a record. Likewise, 2021/22 cotton mill use in Turkey is expected to reach a high of 8.5 million bales (+800,000 bales). Additionally, Vietnam's cotton mill use is forecast to rise 200,000 bales to a record 7.5 million bales in 2021/22. Consequently, these 4 countries are forecast to account for a combined 29 percent of global cotton mill use this season.

Despite record world cotton mill use in 2021/22, global cotton trade is forecast to decrease this season as cotton exporters provided record supplies to cotton spinners in 2020/21. Global cotton trade is forecast at 46.3 million bales in 2021/22. China and Bangladesh—the leading cotton importers—are expected to import fewer supplies this season—9.5 million bales and 8.3 million bales, respectively. Consequently, the major suppliers—the United States, Brazil, and India—are forecast to export smaller quantities. As noted earlier, U.S. cotton exports are forecast at 14.75 million bales (-1.6 million) in 2021/22. For Brazil, exports are forecast at 8 million bales, compared with 2020/21's record of 11 million. For India, this season's cotton exports are projected at 5.5 million bales, compared with 6.2 million in 2020/21.

Based on the latest cotton supply and demand projections, world cotton stocks are forecast to decline nearly 5.5 percent in 2021/22, with stocks projected at 82.6 million bales, the lowest in 3 years. Global cotton stocks are expected to decline in a number of countries this season but will be partially offset by increases in Brazil and the United States, where their respective share of the total is forecast to rise (figure 6). In China, cotton stocks—forecast at 36.2 million bales—are 3.1 million bales lower this season but China remains the largest stockholder, accounting for 44 percent of the global total. In India—where cotton stocks are declining for consecutive years— stocks are projected at 8 million bales (-3.9 million), or 10 percent of the total. However, ending stocks for Brazil are projected to rise 2 million bales due to larger production, with stocks reaching 13.1 million bales—16 percent of world stocks—at the end of 2021/22. Stocks in the United States are forecast higher at 3.5 million bales, or 4 percent of the 2021/22 global total.

Global cotton prices fell since last month's WASDE, with the A-Index dropping roughly 8 cents per pound to 133 cents but still 40 cents above the same period last year. Global macroeconomic concerns

outweighed strong U.S. export sales and shipments, as greater uncertainty lowered prices on the Intercontinental Exchange. In addition, lower prices reflect a change in the spot contract month from March to May, which displayed a negative carry of roughly 2.5 cents in the middle of February. Contrary to prices in the United States and India, spot prices in China and Brazil were slightly higher amid China's return from Lunar New Year and a higher Brazilian real. The A-Index is roughly 30 cents lower than domestic prices in China compared with 20 cents last year, owing partly to a stronger yuan relative to the U.S. dollar.



The most actively traded May 2022 NY/ICE futures contract decreased from 124 to 118 cents per pound over the past month. Values for the December 2022 NY/ICE contract, which reflect price expectations after the next harvest (2022/23 crop year), decreased from 106 to 101 cents/lb. Prices for the December 2022 contract continue to trade at a significant discount relative to prices for contracts with delivery in the 2021/22 crop year. The separation is 16 cents per pound or 15% for the May 2021 contract and 12 cents per pound or 11% for the July contract.

USDA's Ag Outlook Forum Crop Outlooks for 2022/23

On February 24, 2022, the USDA released their projections for 2022/23 crop supply, demand, and prices. The projections assume normal weather conditions for spring planting and summer crop development. These forecasts will be updated in the May WASDE report. The May WASDE report will incorporate growers' 2022 planting intentions as indicated in the March 31st *Prospective Plantings* report.

Corn

	2019/20	2020/21	2021/22 1/	2022/23 2/
Area planted (mil. ac.)	89.7	90.7	93.4	92.0
Area harvested	81.3	82.3	85.4	84.2
Yield (bu./ac.)	167.5	171.4	177.0	181.0
Production (mil. bu.)	13,620	14,111	15,115	15,240
Beginning stocks	2,221	1,919	1,235	1,540
Imports	42	24	25	25
Supply	15,883	16,055	16,375	16,805
Feed & residual	5,900	5,602	5,650	5,650
Ethanol 3/	4,857	5,028	5,325	5,400
Total food, seed & industrial	6,286	6,466	6,760	6,840
Total domestic use	12,186	12,068	12,410	12,490
Exports	1,777	2,753	2,425	2,350
Total use	13,963	14,821	14,835	14,840
Ending stocks	1,919	1,235	1,540	1,965
Stocks/use (percent)	13.7	8.3	10.4	13.2
Season-avg. farm price ($/bu.)	3.56	4.53	5.45	5.00

Soybeans

	2019/20	2020/21	2021/22 /1	2022/23 /2
Area planted (mil. ac.)	76.1	83.4	87.2	88.0
Area harvested	74.9	82.6	86.3	87.2
Yield (bu./ac.)	47.4	51.0	51.4	51.5
Production (mil. bu.)	3,552	4,216	4,435	4,490
Beginning stocks	909	525	257	325
Imports	15	20	15	15
Supply	4,476	4,761	4,707	4,830
Crush	2,165	2,141	2,215	2,250
Seed and Residual	108	103	117	125
Total domestic use	2,273	2,243	2,332	2,375
Exports	1,679	2,261	2,050	2,150
Total use	3,952	4,504	4,382	4,525
Ending stocks	525	257	325	305
Stocks/use (percent)	13.3	5.7	7.4	6.7
Season-avg. farm price ($/bu.)	8.57	10.80	13.00	12.75

Rice

All Rice	2019/20	2020/21	2021/22 1/	2022/23 2/
Area planted (mil. ac.)	2.55	3.04	2.53	2.60
Area harvested	2.48	2.99	2.49	2.55
Yield (pounds/ac.)	7,473	7,619	7,709	7,709
Production (mil. cwt)	185.1	227.5	191.8	196.7
Beginning stocks	44.9	28.7	43.7	33.5
Imports	37.3	34.1	30.5	33.0
Supply	267.3	290.2	266.0	263.2
Total domestic & residual use	144.4	152.7	145.5	144.0
Exports	94.2	93.9	87.0	86.0
Total use	238.6	246.6	232.5	230.0
Ending stocks	28.7	43.7	33.5	33.2
Stocks/use (percent)	12.0	17.7	14.4	14.4
Season avg. farm price ($/cwt.)	13.60	14.40	15.70	16.10

Cotton

Attribute	Unit	2021/22	2022/23	Change (%)
Beginning Stocks	mil. bales	3.2	3.5	11.1
Area Harvested	mil. HA	4.0	4.1	2.3
Production	mil. bales	17.6	18.2	3.3
Imports	"	0.0	0.0	0.0
Total Supply	"	20.8	21.7	4.5
Exports	"	14.8	15.5	5.1
Use	"	2.6	2.7	3.9
Total Use	"	17.3	18.2	4.9
Ending Stocks	"	3.5	3.6	2.9
Stock to Use %	%	20.2	19.9	-1.7
Farm Price	cents/lb.	90.0	80.0	-11.1

PLC Farm Program Payment Projections – 2021/22 CY and 'early' 2022/23 CY

The table below projects the national marketing year average prices for purposes of the Price Loss Coverage (PLC) program. A PLC program payment is triggered when the national Marketing Year Average (MYA) price for a commodity falls below that commodity's effective reference price. The payment rate is then multiplied by the farm's program yield and made on 85% of base acres.

Covered Commodity	***2021/22 MYA Price****	*Effective Reference Price*	***2021/22 CY PLC Payment Rate***
Corn	$5.65	$3.70	--
Grain Sorghum	$5.80	$3.95	--
Long Grain Rice	$14.00	$14.00	--
Medium Grain Rice	$14.40	$14.00	--
Seed Cotton	$0.4608	$0.3670	--
Soybeans	$13.25	$8.40	--
Wheat	$7.50	$5.50	--

*national marketing year average (MYA) prices reflect the midpoint price level from the March 9, 2022 WASDE report.

Covered Commodity	***2022/23 MYA Price*****	*Effective Reference Price*	***2022/23 CY PLC Payment Rate***
Corn	$5.00	$3.70	--
Grain Sorghum	$4.70	$3.95	--
Long Grain Rice	$14.00	$14.00	--
Medium Grain Rice	$14.50	$14.00	--
Seed Cotton	$0.4047	$0.3670	--
Soybeans	$12.75	$8.40	--
Wheat	$6.80	$5.50	--

**national marketing year average (MYA) prices reflect the prices contained in the USDA Ag Outlook Forum. February 24-25, 2022.

Sources: USDA Agriculture Market Service (AMS), USDA Foreign Agriculture Service (FAS), USDA Farm Service Agency (FSA), USDA National Agriculture Statistics Service (NASS), USDA Economic Research Service (ERS), USDA FAS GAIN Report, USDA Office of Communications, USDA World Supply Demand Estimates (WASDE), AgDay, Ag Fax Media, Ag Market Network, Agri-Pulse, Ag Resource Company, Ag Web, Agricultural Market Information System (AMIS), Allendale, American Farm Bureau Federation, Bloomberg News, Brock Report, CME Group, Cotton Grower, Cotton Incorporated, Cotton Outlook, Creed Rice Report, Daniels Trading, Delta Farm Press, DTN Progressive Farmer, Farm Futures, Fiber 2 Fashion, Hightower Report, Intercontinental Exchange, International Grains Council, Iowa State University, Lakefront Futures and Options, LSU AgCenter, Mississippi State University, National Cotton Council, Peterson Institute of International Economics, Plexus Cotton, Pro Farmer, Refinitiv, Reuters (Karen Braun), Rice Market Letter, Southeast Farm Press, StoneX, Successful Farming, Texas A&M University (John Robinson), University of Arkansas, University of Georgia, University of Illinois, University of Tennessee, U.S. Grains Council, USA Rice Federation, U.S. Soybean Export Council, and the Wall Street Journal.

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