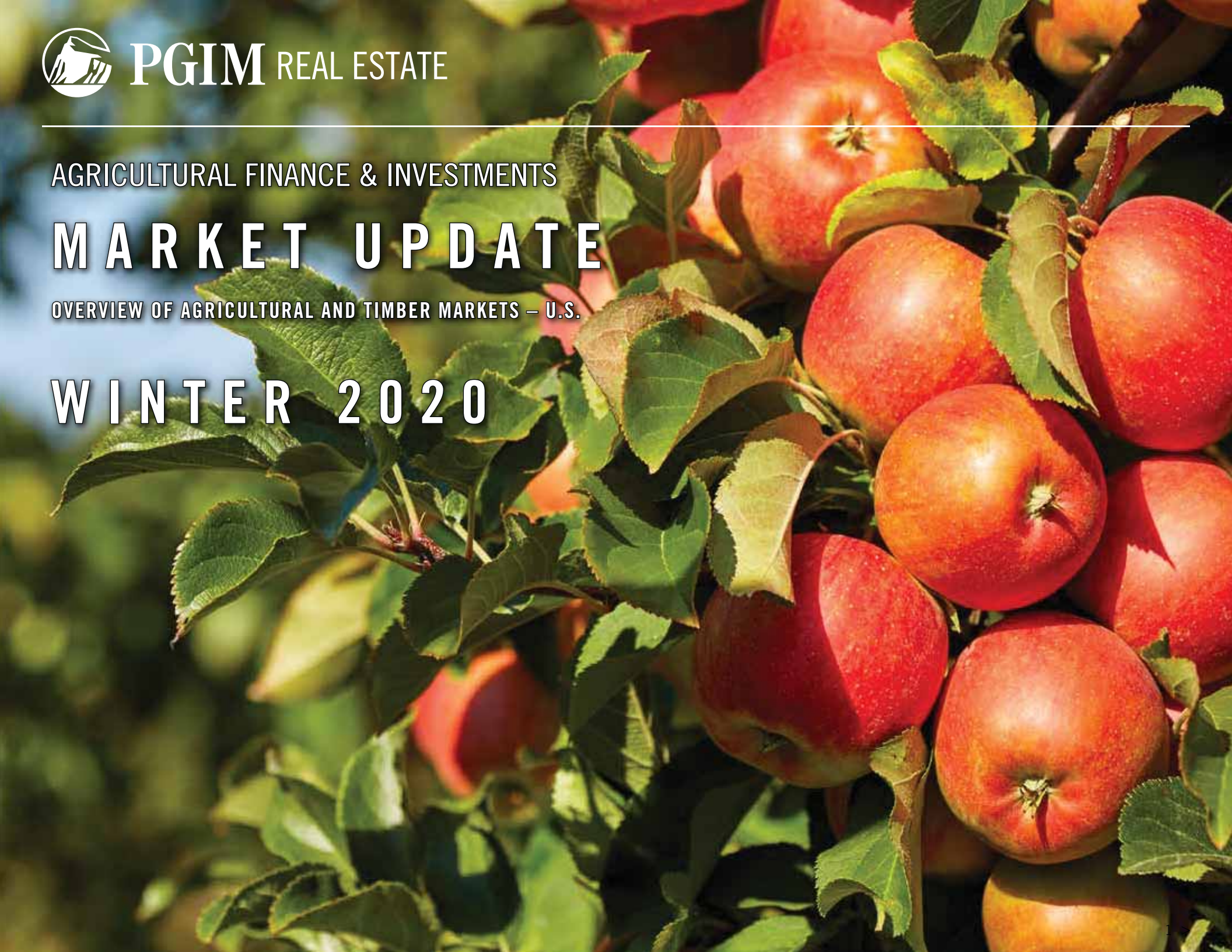
PGIM REAL ESTATE

AGRICULTURAL FINANCE & INVESTMENTS

MARKET UPDATE

OVERVIEW OF AGRICULTURAL AND TIMBER MARKETS – U.S.

WINTER 2020



MARKET UPDATE
WINTER 2020
OVERVIEW OF AGRICULTURAL AND TIMBER MARKETS
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EXECUTIVE SUMMARY

- The NCREIF Farmland Index ("NFI") ended 2019 with a total market value of $11.4 billion, an increase of $1.3 billion from year-end 2018. The farm properties are comprised of 897 row crop properties with a market value of $7.2 billion and 255 permanent planting properties with a market value of $4.3 billion. There are a total of eight data contributors to the index with one new contributor added during the year, further supporting growing institutional investment in the asset class.
- 2019 total NFI returns were 4.81% comprised of 4.41% income and 0.39% appreciation returns. In the permanent cropland category, total returns were 5.48% comprised of 6.27% income and -0.77% appreciation. Wine grapes, which represent 38% of the permanent crops in the NCREIF index, were the main driver for the lower appreciation with -2.86% appreciation for the one-year time period. And in the row cropland category, total returns were 4.40% comprised of 3.31% income and 1.06% appreciation returns.
- The U.S.-China trade war continued to impact the agricultural markets in 2019 with traditional row crops, such as corn, soybeans and wheat, as well as certain tree nuts being negatively impacted. At the end of the year, there was a sense of relief when the phase-one trade agreement was announced where China committed to buying $80 billion worth of agricultural products over the next two years but no details were provided as to the allocation of those purchases by commodity or sector. The current outlook for exports to China is tempered by uncertainties surrounding the COVID-19 outbreak, which will likely affect the timing of China's purchases.
- The global spread of the COVID-19 virus is expected to slow overall global economic growth. Agricultural export volumes are likely to be impacted due to supply chain disruptions. According to the USDA, agricultural exports to markets in Asia are being impacted by new quarantine measures, port closures, vessel delays, and suspended flights as U.S. agribusiness exporters struggle to find available space for cargo.
- U.S. agricultural exports in fiscal year 2020 are projected at $139.5 billion, up $4.0 billion from fiscal year 2019, primarily driven by expected higher exports of pork, beef, soybeans, and horticultural products, according to USDA's latest projections.
- In the Midwest, farmers experienced record-breaking rainfall in the spring that delayed or prevented many producers from planting mostly soybeans, corn, and wheat during the season. Soybean acreage decreased significantly from 89.2 million acres in 2018 to 76.1 million acres in 2019, due to planting struggles and anticipated reduced profitability compared to corn during the planting season.
- For the 2019/20 marketing year, the USDA estimates U.S. tree nut supplies (almonds, walnuts, hazelnuts) will be down from last year's record, signaling higher grower prices for these crops.
- While Hurricane Irma made landfall in 2017, the effect of that storm is still impacting Florida citrus. Juice processors, having reduced domestic supply as a result of that storm, made import commitments to sustain their supply. As the Florida citrus industry is recovering, it is facing competition from those import contracts driving supply up and prices down. Processors will likely move away from imported fruit as those contracts expire, but a temporary supply glut exists and will impact prices in the short run.
- Innovation in the agriculture sector is driving efficiency and productivity in the field. High-density apples and pecans are helping reshape thoughts on yields per acre. The use of robotics and recognition technology is thought to replace traditional hand-harvested crops. Agriculture innovation has led to higher acreage productivity, lower costs per acre, and more conservation of resources, such as soil and water. This has been seen in the apple industry where higher-density plantings and new growing techniques are changing that industry's landscape.

EAST REGION

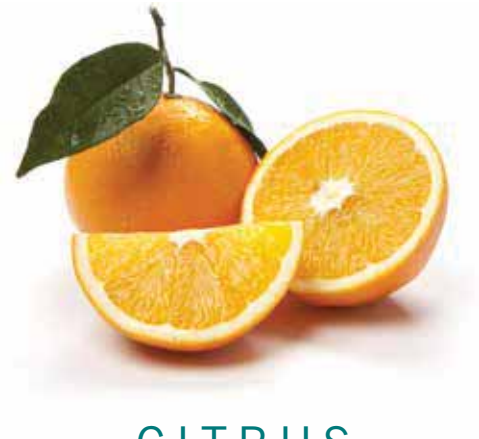
Our Overview of the Agricultural Real Estate Market

Florida agriculture came close to experiencing another storm with Hurricane Dorian and averted a crisis as the storm lingered in the Bahamas and took a swift turn north. With minimal severe weather events, the 2019/20 citrus production outlook is positive with a projected 3% increase in production from oranges and a 20% increase in production from specialty citrus.

The sugar beet industry experienced adverse weather in the Midwest causing the overall U.S. sugar supply to decrease by 10% due to the loss of the sugar beet crops. This event is favorable for growers of sugarcane who have had an above-average crop yield and have not been affected by adverse weather, and is expected to drive the domestic price up in response to the lower supply. Favorable legislative changes to the nutrition guidelines are also expected to drive demand as the distinction between total sugar and added sugar has been changed on nutrition labels.

Pecan producers in Southern Georgia are moving forward from the devastating effects of Hurricane Michael. However, due to a lack of rainfall and warmer-than-average temperatures in September and October of 2019, the nut crop for 2019/20 is expected to be lower than expected as the harvest continues. The strong demand for pecans in China follows a cyclical pattern peaking at the Chinese New Year allowing domestic producers to move their product before and during this peak. Demand is strong internationally and domestically, outpacing the domestic growth and causing record-setting imports from Mexico to satisfy demand.

Florida land values continue to stabilize due to consolidation of the agricultural industry mainly occurring in the sugar and citrus sub-sectors. Utility companies are continuing to purchase large tracts of undeveloped land through the region with solar farm development in mind. The utility companies continue to offer above-market prices to the sellers or enter into long-term leases with favorable terms to the lessors to increase the solar farm footprint.



CITRUS

An Overview of the Eastern U.S. Orange Market

Florida production for the 2019/20 season places the citrus crop harvest at 74 million boxes, up 3% from the 2018/19 season (71 million boxes), and is expected to trend upward as the harvest continues.[1]

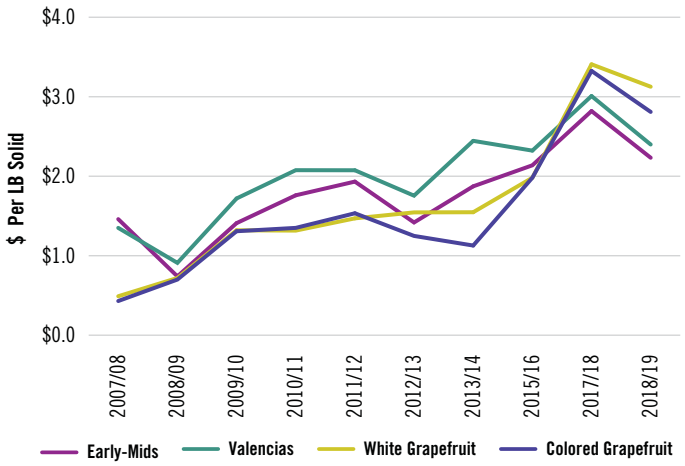
Florida is the largest producer of juice oranges in the U.S. with a harvest of Valencia oranges estimated at 42 million boxes, up 1.6% from the previous season. The harvest of non-Valencia oranges for the 2019/20 growing season is estimated at 32 million boxes, up 5.3% from the 2018/19 growing season. Florida orange production continues to be affected by disease such as citrus greening and canker. Specialty citrus such as grapefruit are forecasted at a 20% improvement in crop size for the 2019/20 season due to favorable weather and disease management.[1]

The average cash price of Valencias in the 2018/19 season were recorded as $2.40 per pound solid and $2.23 per pound solid for Early-Mids.[2] Orange prices are below the five-year average due to Florida juice processors such as Tropicana and Minute Maid buying orange juice primarily from Brazil and Mexico as they anticipated a slower domestic recovery from Hurricane Irma. The Florida crop actually recovered better than expected causing an increase in the 2018/19 domestic supply, which resulted in lower cash prices. This effect is expected to drive further consolidation within the market.

In the international market, Brazil is expected to produce 388 million boxes of oranges during the 2019/20 season resulting in a 36% increase from the previous harvest of 285 million boxes. The surplus is expected to drive global prices down.

U.S. consumption levels of orange juice are up 4% from the 2017/18 season but down 27% from the 2009/10 season due to changes in consumer preference, low supply, and volatile pricing. Consumer preferences continue to turn away from orange juice due to the negative perception of sugary beverages associated with health risks.

CITRUS Historical Price for Florida Citrus by Main Varieties, 2007/08 – 2018/19



$2.40

PER LB. SOLID FOR 2018/2019

CASH PRICES FOR VALENCIA ORANGES

As of December 2019, average cash prices for Valencia juice oranges have declined by 20% from the same time last year.

+3%

FROM 2018/2019

FLORIDA ORANGE CROP

An estimated 74 million boxes of oranges are expected to be harvested this season.

Source: USDA, NASS, Florida Citrus Mutual, PAI Research

SUGARCANE

An Overview of the Eastern U.S. Sugarcane Market

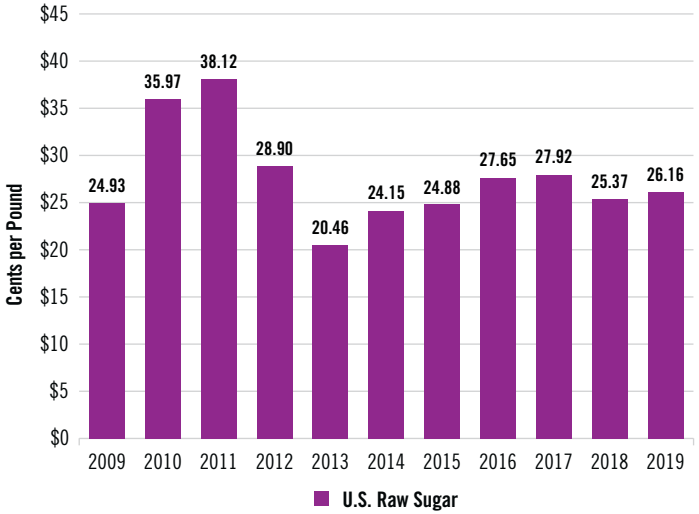
The 2019/20 Florida sugarcane crop is in the middle of harvest and is expected to continue through April of this year. The USDA forecasts the 2019/20 season for the U.S. at 3.5 million metric tons raw value (MTRV). Florida cane production for 2019/20 is estimated at 1.9 million MTRV compared to last year's harvest of 1.8 MTRV. The slight increase in tonnage is expected to have higher sucrose levels as favorable growing conditions have been present for the current season.[3]

The FDA's 2016 Nutrition and Supplement Facts Labels rule recently went into effect for businesses with $10 million or more in sales that requires a declaration for added sugars on the label. This means that for ingredients like white sugar, there is a distinction between the natural sugar contained in the package of sugar and can drive demand as consumers see that no additional ingredients have been added to the white sugar sold as opposed to other artificial sweeteners that contain added sugars.

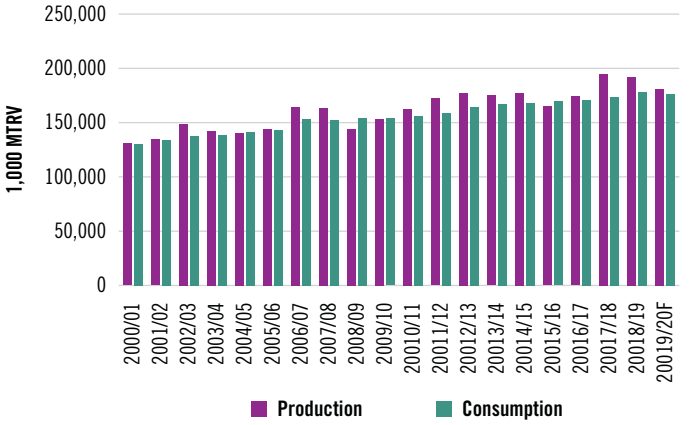
Sugar beet farmers in the upper Midwest endured adverse weather this growing season with over 100,000 acres in the Red River Valley unharvested due to the wet conditions. The drop-in supply is expected to result in higher prices from the refineries as the demand for sugar remains strong in the U.S.

World consumption for sugar in 2019 increased by 0.2% from last year and continues to reach yearly record levels since 1998. Global supply is at 178 million MTRV of production versus 173 million MTRV of consumption. Prices for U.S. raw sugar has increased in 2019 to 26.2 cents per pound.[3]

SUGARCANE Historical U.S. Raw Sugar Prices, 2009 – 2019



SUGARCANE Historical Global Sugar Production and Consumption, 2000/01 – 2019/20F



Source: USDA, USDA ERS, PAI Research

PECANS

An Overview of the Eastern U.S. Pecan Market

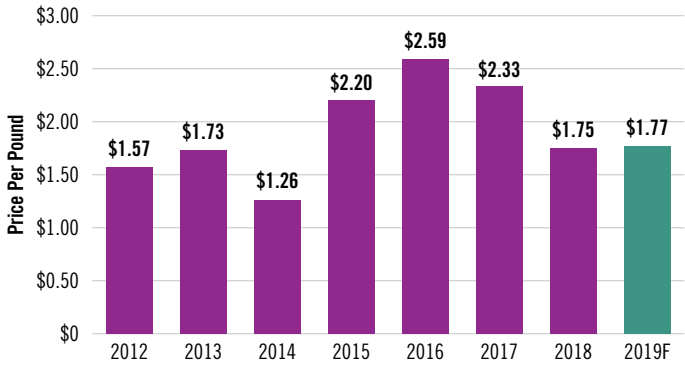
U.S. pecan production for the 2019 season is estimated at 265 million pounds (in-shell basis), a 14% increase from the 2018 season (243 million pounds in-shell basis). This is due to the poor harvest in Georgia where production has been halved by the effects of Hurricane Michael and are still felt more than a year after the storm.[4] The total pecan-producing acreage in the U.S. stands at 396,000 acres with Georgia accounting for approximately 32% of the pecan-producing acres.[4]

Georgia pecan growers are still engaged in replanting efforts to reach pre-hurricane yield levels. As a result of the storm and adverse weather in the fall of 2019, fruit development issues have been observed with less fruiting wood available and has caused premature sprouting, embryo rot, and poorly filled kernels. These issues are expected to last 2-3 years while the trees continue to redevelop. According to the USDA, Georgia is expecting the 2019 crop to reach 69,000 pounds (in-shell basis), relatively flat from 2018 production of 70,000 pounds, and 35% lower from 2017 production of 107,000 pounds.[5]

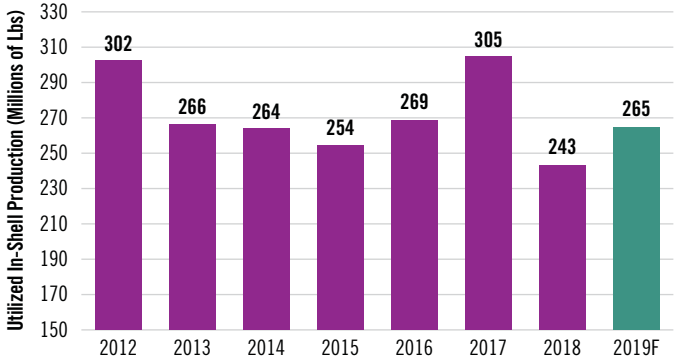
Demand for pecans remains strong in the Chinese market in which Georgia producers export over 50% of their crop. Early pricing for the crop was strong during September and October where certain varieties such as Pawnee and Oconee are in high demand for the Chinese New Year (January 25, 2020).

U.S. prices for pecans decreased last season due to higher production from Mexico, uncertainty over the trade dispute with China, and a lower-than-expected domestic crop. 2019 season average pricing was $1.91 per pound (in-shell) representing a 20% decline from 2018 pricing. Prices received by growers are due in part by the softened demand post Chinese New Year causing growers to hold their pecans in storage until prices stabilize.

PECANS U.S. Price Per Pound of Pecans In-Shell, 2012 – 2019F



PECANS Historical and Projected U.S. Pecan In-Shell Production, 2012 – 2019F



Source: USDA, NASS, UGA Pecan Extension

CENTRAL REGION

Our Overview of the Agricultural Real Estate Market

In the Midsouth, there was a notable farmland transaction in the Mississippi River Delta that brought a price of $6,280 per acre. The land was located in Western Mississippi and was considered a high-quality property with adequate irrigation and soil types. The sale signals that high-quality farmland properties in the Midsouth are maintaining their value in 2019 compared to values in 2018. According to the St. Louis Fed's "Agricultural Finance Monitor," however, quality farmland values reportedly declined 1.7% in the 3rd quarter of 2019 compared to the 3rd quarter of 2018.

Ranchland and pastureland values rose 10.6% in the 3rd quarter of 2019 compared to the 3rd quarter of 2018. The survey also gathered responses on bankers' outlook for farmland values in the 4th quarter of 2019 in which they predicted values would remain constant to slightly lower than the previous quarter. The survey reported that cash rental rates for quality farmland increased 0.9% in the 3rd quarter of 2019 compared to the 3rd quarter of 2018.[6]

Midwest farmland values were relatively stable in 2019. Across the region, slight value gains mixed with slight declines in farmland values. Despite the economics of the agricultural landscape over the past few years and the projections into 2019, the average value per acre of farmland increased in Wisconsin, Missouri, Nebraska, and Ohio in 2019.[7] Wisconsin, Missouri, and Ohio saw increases of 0.6%-1.5% in the average value of farmland, while Nebraska saw farmland values increase by 3.6%. According to the USDA, there was no change in farmland values in Illinois and Indiana from 2018.[7] In 2019, Iowa saw a decline of 1.1% from 2018 in part due to the quality composition of the land being sold.[7]

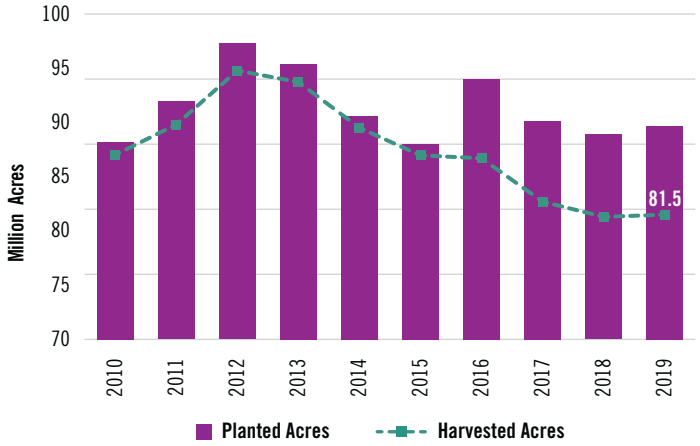
CORN

An Overview of the Central U.S. Corn Market

The 2019 corn harvest yields saw a decline of 8.4 bushels per harvested acre compared to 2018 due to record rainfall across the Midwest during the spring which delayed planting. Average corn yield is projected at 168.0 bushels per acre, down from 176.4 in 2018 and 2017's record yield of 176.6. Slightly increased planted acreage in 2019 of 89.7 million acres contributed to a total production of an estimated 13.69 billion bushels, below the 14.34 billion bushels produced in 2018. Ending stocks, due to lower production, are expected to decrease to 1.89 billion bushels for 2019/20, down from 2.22 billion bushels that began the 2019 marketing year. Exports in 2019 decreased an estimated 290 million bushels from 2018 to 1.78 billion bushels. The 2019 average farm price received for corn was $3.61 per bushel, an increase of $0.25 above the average price in 2018.[8]

Global competition from major exporters is also a continuing trend. Exports from major competitors Argentina and Brazil have increased significantly from 1.84 billion bushels in 2018 to an estimated 3.07 billion bushels in 2019. Production in both countries increased in 2018 resulting in the increased exports in 2019. Projected production for Argentina and Brazil in 2019 is expected to be near 2018 totals at 5.94 billion bushels. This is anticipated to cause continued competition with the United States as exports from Argentina and Brazil are projected at 2.74 billion bushels in the year ahead. China has projected to increase imports by 99 million bushels, to 275.6 million bushels in 2020.[8]

CORN Historical Planted and Harvested Corn Acres in the U.S., 2010 – 2019



168.0
BUSHELS PER ACRE IN 2019

U.S. AVERAGE CORN YIELD

The 2019 projected U.S. average corn yield is down nearly 5% from 2018.

-14.8%
FROM 2018/2019

U.S. CORN ENDING STOCKS

Expected decrease in ending stocks for the 2019/20 crop year are projected to be 1.89 billion bushels, down 14.8% from 2.22 billion bushels in the 2018/19 crop year.

Source: USDA, NASS, PAI Research

SOYBEANS

An Overview of the Central U.S. Soybean Market

The 2019 soybean crop fell below 2018's record crop of 4.43 billion bushels. In 2019, the U.S. produced a projected 3.56 billion bushels of soybeans, 870 million bushels below the 2018 record. Soybean acreage decreased significantly from 89.2 million acres in 2018 to 76.1 million acres in 2019, due to planting struggles and anticipated reduced profitability compared to corn during the planting season. Yields decreased slightly from the 2018 record of 50.6 bushels per acre to a projected 47.4 bushels per acre in 2019. Ending stocks decreased to an estimated 475 million bushels in 2019 from 909 million bushels in 2018. After consecutive years of near-record production in 2017 and 2018, matched with a decrease in exports, the lower production in 2019 is projected to bring ending stocks down from the record high.[9]

U.S. prices were relatively strong despite increases in domestic and global stocks. The 2018/19 season average farm price for soybeans was projected at $8.48 per bushel, a decline of $0.85 from the 2017/18 average farm price of $9.33 per bushel. In 2019/20, the domestic stocks-to-use ratio is projected to decrease by 11.0% from 2018/19 and end the year at 11.9%. This was mainly due to the decline in production for the 2019 crop as exports are projected to rebound slightly after the significant drop in 2018/19 due to increased competition and tariff implementation, rising from 1.75 billion bushels in 2018/19, to 1.78 billion bushels in 2019/20.[9]

Domestic demand is continuing to help slightly offset the competitive export markets. U.S. soybean crushing for oil and meal is projected to set a record at 2.11 billion bushels, up 13 million bushels from last year's record.[9] Planted acreage for soybeans will be watched closely by the market as prices hinge on projected supply and anticipated export demand.

SOYBEANS Historical Average Monthly Price Received by U.S. Farmers for Soybeans, January 2010 – November 2019

-14.7%
FROM 2018

SOYBEAN PLANTED ACREAGE

Due to planting struggles and anticipated profitability compared to corn during the planting season, soybean planted acreage for the 2019 crop was 89.2 acres compared to 76.1 acres in 2018.

-6.3%
FROM 2018

SOYBEAN YIELDS PER ACRE

The 2019 projected U.S. average soybean yield of 47.4 bushels per acre is 3.2 bushels per acre lower than 2018's record yield.

Source: USDA, NASS, PAI Research

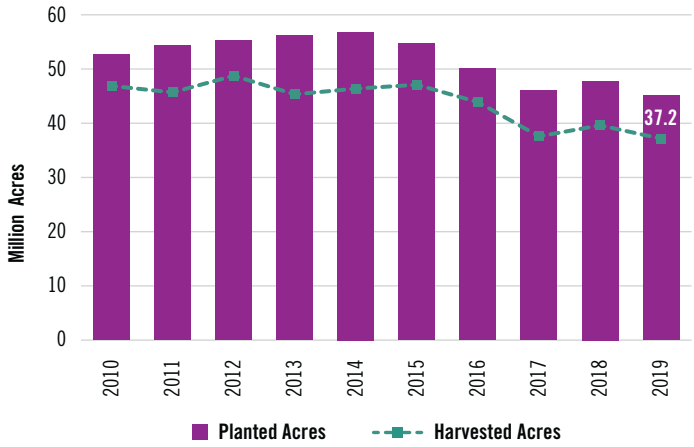
WHEAT

An Overview of the Central U.S. Wheat Market

The production for the 2019/20 crop year is projected at 1.92 billion bushels, a 1.6% increase from the estimated 2018/19 production of 1.89 billion bushels. This is driven by increased average yields. Wheat acreage is projected to decrease by 5.4% from 47.8 million acres estimated in 2018/19 to 45.2 million acres in 2019/20. Average yields are projected to increase by 8.6% to 51.7 bushels per acre. Increased production estimates are resulting in lower prices, with a projected average farm price of $4.55 per bushel for the 2019/20 crop. This is down from last year's average farm price of $5.16 per bushel.[10] U.S. winter wheat acres are projected to be 30.8 million acres in 2020. Not only are these the lowest projected wheat acres in the U.S. in 110 years, it is a decrease of 1% from the 2018/2019 acres planted.[11]

In addition to expecting a production increase in the U.S., global wheat production is projected to increase as well. Wheat production globally is projected to be 28.1 billion bushels in 2019/20, an increase of 1.2 billion bushels from the 2018/19 estimate. Along with increased production, the U.S. is projected to increase exports in 2019/20 by 975 million bushels. Drought conditions continue in Australia resulting in steadily reduced production. Demand for wheat continues to remain strong in the EU and Russia, as well as Turkey and Yemen, supporting competitive prices. It is estimated that 236 million bushels of U.S. wheat were exported during the 2nd quarter of 2019/20. Global ending stocks are projected to increase to 10.6 billion bushels in 2019/20 from the estimated 2018/19 ending stock of 10.2 billion bushels with increased production.[11]

WHEAT Historical Planted and Harvested Wheat Acres in the U.S., 2010 – 2019



-1%
FROM 2018/2019

U.S. WHEAT ACRES PLANTED

The projected total wheat acres planted for 2019/2020 is the lowest in 110 years at 30.8 million acres.

+8.6%
FROM 2018

U.S. AVERAGE WHEAT YIELD

The 2019 U.S. average wheat yield is 51.7 bushels per acre.

Source: USDA, NASS, PAI Research

COTTON

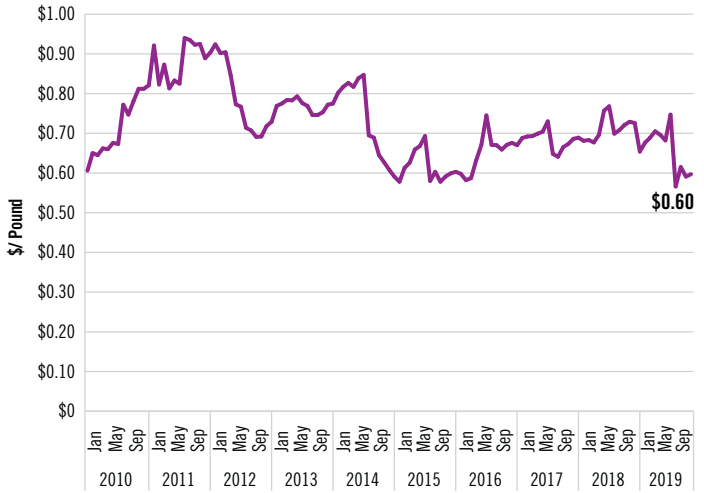
An Overview of the Central U.S. Cotton Market

The USDA projects U.S. cotton production will be higher in 2020 compared to 2019. In terms of total production, the USDA projects that the U.S. will produce 20.1 million bales of cotton in 2020, which is up 8.6% from the 2019 crop season estimation. In 2019, it is estimated that 14.1 million acres of cotton were planted with only 10.21 million acres being harvested. In 2020, planted acres are projected to increase to 13.74 million acres with 11.80 million acres projected to be harvested. Cotton yields are projected to be lower in 2020, compared to 2019 with the USDA projecting the 2020 average cotton yield will be 817 pounds per acre for the U.S., down 5.8% from the 2019 estimated yield.[12]

The year-end estimate for the 2019 upland cotton price is 70.3 cents per pound. U.S. upland cotton prices are projected to decrease 7.3 cents per pound in 2020.[12]

The latest 2020 U.S. balance sheet for cotton shows the beginning stock projection of 4.64 million bales, which is up 11.6% from the 2019 beginning cotton stocks estimation. The 2020 stocks-to-use ratio for cotton is projected at 27.4% and is up slightly from 27.2% in 2019. U.S. cotton exports of 15.83 million bales projected for 2020 are up 11% from 2019. Global cotton ending stocks are estimated to be 79.53 million bales at year-end 2019, which is down from the December 2018 estimate of 81.14 million bales.[13]

COTTON Historical Average Monthly Price Received by U.S. Farmers for Cotton, January 2010 – November 2019



+8.6%
FROM 2019

U.S. COTTON PRODUCTION

The total 2020 U.S. cotton production is projected at 20.1 million bales.

-$0.07
PER POUND
FROM 2019

JANUARY U.S. COTTON PRICE

The projected USDA 2020 price for U.S. upland cotton is 63 cents per pound.

Source: USDA, NASS, PAI Research

RICE

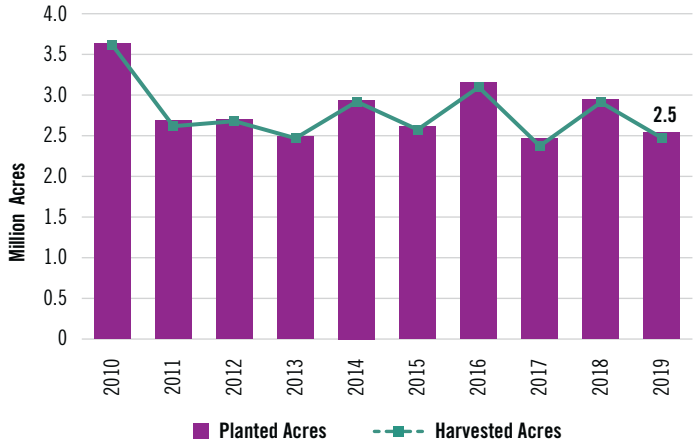
An Overview of the Central U.S. Rice Market

The total U.S. rice production forecast for 2019 is 184.7 million cwt, down -17% from 2018. Average rice yields per acre across the U.S. are down 2.87% in 2019 compared to average U.S. rice yields in 2018.[14] 2019 planted rice acres are estimated at 2.54 million acres which is down 13.9% from 2018 planted rice acres. Harvested rice acres are estimated at 2.47 million acres for 2019, down 15% from 2018's 2.91 million harvested rice acres.

U.S. ending stocks for all rice are projected at 28.6 million cwt for 2019/20, which is a decrease of 16.3 million cwt, or 36.3%, from 2018 ending rice stocks. Long grain rice ending stocks are projected at 13.7 million cwt for 2019/20 which is down 58% from 2018 and marks the lowest ending stocks for long grain rice for the past five years. In contrast, the 2018 ending stocks were the highest level in the same time frame. The drastic drop in long grain rice ending stocks is largely due to the 12% decline in U.S. long grain rice supply in 2019/20 from 2018/19. Rice total use in 2019/20 actually declined from 174 million cwt in 2018/19 to 169 million cwt in 2019/20.[14]

According to the most recent USDA WASDE report, the 2019/20 U.S. all rice marketing year average price is estimated at $13.20 per cwt, up 7% from the 2018/19 all rice marketing price at $12.30 per cwt. U.S. long grain rice price is projected at $12.20 per cwt for 2019/20 compared to $10.80 per cwt in 2018/19. U.S. medium and short grain rice prices are projected at $16.30 per cwt, compared to $17.60 per cwt in 2018/19.[15]

RICE Historical Planted and Harvested Rice Acres in the U.S., 2010 – 2019



-17%
FROM 2018

U.S. RICE SUPPLY

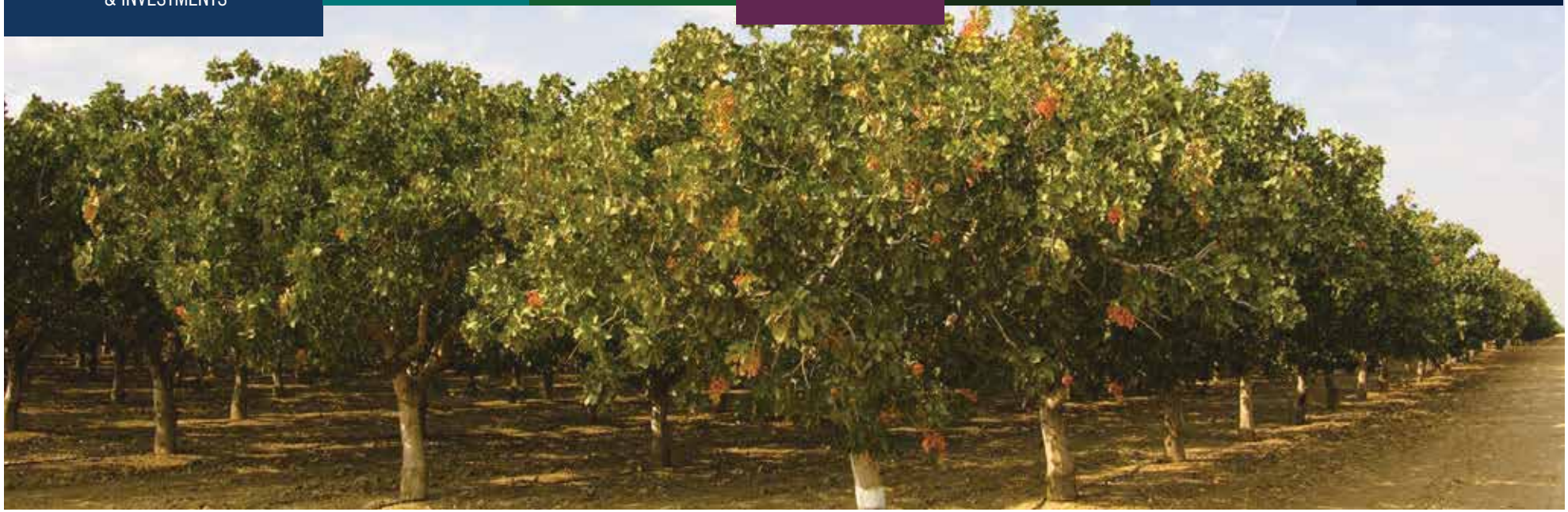
Domestic rice supply is estimated to be 184.7 million cwt in 2019.

+7%
FROM 2018

U.S. RICE AVERAGE MARKETING PRICE

The 2019/2020 U.S. average rice price is projected at $13.20 per cwt.

Source: USDA, NASS, PAI Research



WEST REGION

Our Overview of the Agricultural Real Estate Market

California agricultural real estate transactions of size, investment grade quality, and desirable characteristics have been scarce the past few years. More recently, there has been an uptick in transaction activity likely driven by some clarity on the impact of the Sustainable Groundwater Management Act ("SGMA") on land values. The market continues to digest the implementation of SGMA. Groundwater Sustainability Plans ("GSPs") for critically overdrafted high- and medium-priority basins were submitted to the Department of Water Resources on January 31, 2020. As the strength of the basins is better known, we are starting to see a divergence in land values for properties in water districts providing reliable deliveries in comparison to those with groundwater only in overdraft basins. For instance, values in Fresno County fell 20% this past year alone for farmland with groundwater only.[16]

Many commodity types continue to experience softer prices, mainly attributable to the trade uncertainty with China and a strong U.S. dollar. Most commodity prices for permanent plantings have rebounded from their short-term lows as commodity marketing groups have helped increase shipments by finding and promoting in new markets, as well as a slightly weaker U.S. dollar.

Overall, land values have been stable to increasing for properties with two sources of water and quality developments. In particular, pistachio land values have strengthened significantly with pent-up demand and few orchards of size and institutional quality on the market. Fresh citrus has been an exception to this, as many industry experts believe the availability and affordability of other fresh fruits in the domestic market have kept prices stable to softening.

WINE GRAPES

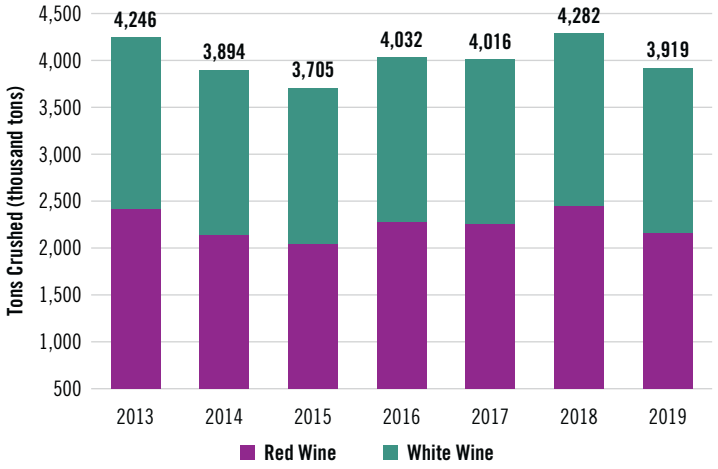
An Overview of the Western U.S. Wine Grape Market

The 2019 wine grape harvest produced a high-quality crop as a result of ideal conditions throughout the growing season. A rainy winter and spring was followed by a mild summer and fall, which helped the crop mature gradually and ripen at lower sugar levels. The 2019 California Crush Report indicated the 2019 California wine grape crush at 3.9 million tons, down 8.4% from the record 2018 harvest of 4.3 million tons.[17]

The lower harvest in 2019 is not likely to offset the current oversupply condition in the market. The oversupply has been fueled by the 2018 record crush, as well as 2016 and 2017 harvests that each saw over 4 million tons crushed.[18] Adding more challenges to the oversupply environment, U.S. consumption of wine declined for the first time in 25 years. While the decline was small at 0.09%, wine consumption in 2019 accounted for 11% of total U.S. alcohol consumption.[19] The declines can partially be explained as millennials are not yet embracing wine consumption and are instead choosing to consume substitutes like hard seltzer and craft beer.[20] Furthermore, 2019 U.S. wine shipments from seven of the largest California wineries, which account for approximately 70% of total annual wine sales, reported shipping 3 million fewer gallons year-over-year. As a result of the oversupply, bulk wine and grape prices have suffered, with some varieties seeing more decline than others. For example, bulk and grape prices for Pinot Noir in Q3-2019 experienced price declines of 39.7% and 16%, respectively, from Q3-2018.[21]

Despite the decline in wine consumption and grape prices, growth in certain segments could provide opportunities to alleviate the supply and demand imbalance. Direct-to-Consumer sales volumes for wines in the $100 and above category rose 15% from 2018, outperforming the entire Direct-to-Consumer channel. The average price per bottle for all wines was up 2.5%, the largest increase in eight years. In addition, Oregon and Washington saw sales volumes increase by 9.2% and 13%, while the value of wines shipped increased by 13% and 16%, respectively.[22]

WINE GRAPES U.S. Wine Grape Production (Tons Crushed) 2013 – 2019



-8.4%
FROM 2018

CALIFORNIA WINE GRAPE PRODUCTION

The California wine grape crush was 3.9M tons in 2019.

+15%
VOLUME FROM 2018

DIRECT-TO-CONSUMER WINE SHIPPING

2019 sales volume for bottles over $100 rose 15% within the Direct-to-Consumer channel.

Source: California Department of Food and Agriculture, Silicon Valley Bank, Wine Intelligence, PAI Research

TABLE GRAPES

An Overview of the Western U.S. Table Grape Market

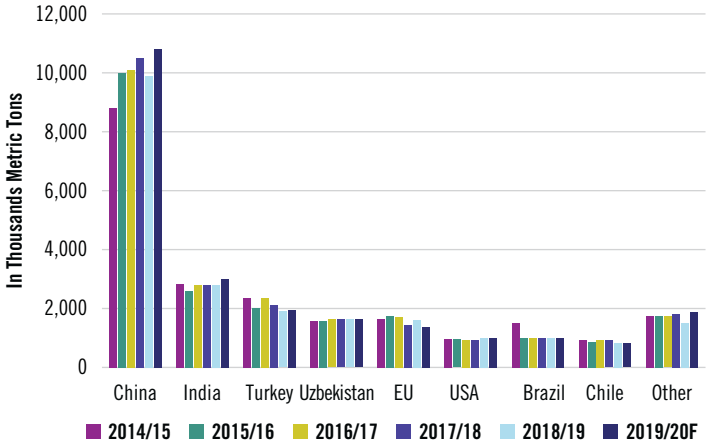
Recent assessments by the California Table Grape Commission estimate 2019 volume at 109 million boxes, down 6% from 2018's second-largest table grape volume produced in California history. The trend of lower table grape inventories in 2019 was underpinned by improved prices. California white seedless grape average prices through November 2019 increased by 53% year-over-year to $24.50 per box, while California red seedless grapes were trading at an average of $22.50 per box, up nearly 22% compared to prices reported by the USDA one year ago.[23]

While California table grape production is forecasted to soften, global production is estimated to rise by 4% to a record 23.4 million tons. Global supply in 2019 was supported by sizeable harvests in China and India, which offset the losses felt in the European Union due to heavy rain impeding production results.

California produces the majority of table grapes grown in the United States, exporting over a third of its volume to top destinations such as Canada, Mexico, and Southeast Asia. Traditionally, Chile and the United States have been the dominant exporters in the international table grape market. However, Peru recently gained strong headwinds in the industry, passing the U.S. as the second-largest exporter of table grapes in 2018 and is expected to remain on this trajectory in 2019 with table grape exports projected to reach 400,000 tons compared to U.S. exports forecasted at 345,000 tons. The U.S. remains a top importer of table grapes, which are projected to trend up by 13% in 2019, buoyed by Peru's strong output and rising domestic consumption in the United States.[24, 25]

Growers have been on the heels of the retaliatory tariffs imposed by China on U.S. agricultural goods with California's table grape exports to China dropping 83% in 2019 over the prior year. Nevertheless, potential trade gains may soon be realized, as the phase-one trade agreement was signed by the U.S. and China on January 15, 2020, where China agreed to purchase between $40 billion and $50 billion of U.S. crops annually between 2020 and 2021.[26]

TABLE GRAPES Historical Production of Fresh Grapes by Major Countries, 2014/15 to 2019/20F



-6%
FROM 2018

CALIFORNIA TABLE GRAPE PRODUCTION

The 2019 California Table Grape crop is projected at 109 million boxes.

+4%
FROM 2018

GLOBAL TABLE GRAPE PRODUCTION

The 2019 Global Table Grape production is estimated at a record 23.4 million tons supported by sizeable harvests in China and India.

Source: USDA, PAI Research

AVOCADOS

An Overview of the Western U.S. Avocado Market

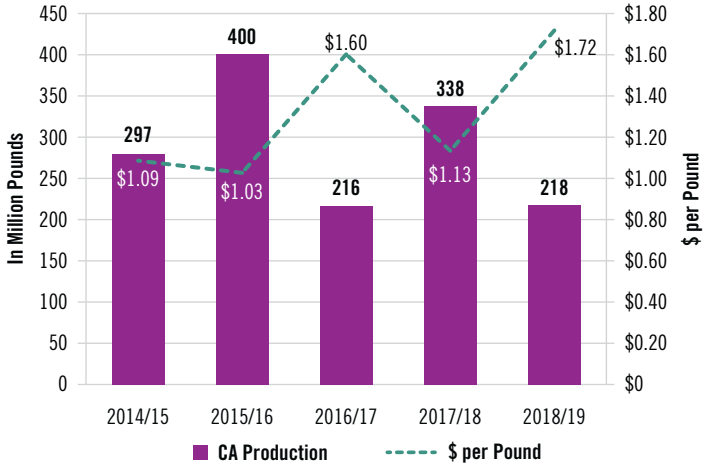
The California avocado crop for the 2020 calendar year falls on an "on year" and is estimated at 369 million pounds. The 2019 crop is estimated to final at 210 million pounds, roughly 6% higher than original crop estimates. In 2019, growers faced unfavorable growing conditions from wildfires and a record heatwave. To date, growing conditions for the 2020 crop have been considered good with favorable temperatures and moderate winter rains. California avocado trees can bloom from late winter through early summer, but most of the harvested fruit develops from flowers that are pollinated during early spring.

For the 2019 calendar year, avocados grown in California represented slightly under 8% (204 million pounds) of the U.S. avocado volume (2.6 billion pounds). During the same time period, Mexico represented roughly 84% (2.1 billion pounds) of volume in the U.S. California growers continue to strategically pick and ship fruit at times when Mexico may not be able to meet full market demand. Most avocados are being harvested for shipments leading up to the Super Bowl and continue through the summer.

Domestic demand continues to remain strong and can absorb larger supplies. From 1997 to 2019, the avocado market grew from roughly 350 million pounds to today's range of about 2.5 billion pounds per year. All while maintaining attractive prices to growers. The industry average price of $1.72 per pound, for all varieties and all grades, was a historic high and was up 51.5% from the prior year.

Holiday sales continue to trend upward. The Fourth of July dollar sales have increased each of the last four years. 2019 Fourth of July dollar sales were $62 million, an increase of almost 38% from 2016's $45 million in sales.[27]

AVOCADOS California's Annual Avocado Production and Prices 2014/15 to 2018/19



$1.72

FOR 2019

CALIFORNIA AVOCADO PRICE

Prices for avocados saw an increase of 51.5% from the prior year.

369M

LBS
FOR 2020

CALIFORNIA AVOCADO PRODUCTION

Avocado production in California is expected to increase by 76% from 2019 due to the alternate bearing cycle for this commodity.

Source: California Avocado Commission, PAI Research

CITRUS

An Overview of the Western U.S. Citrus Market

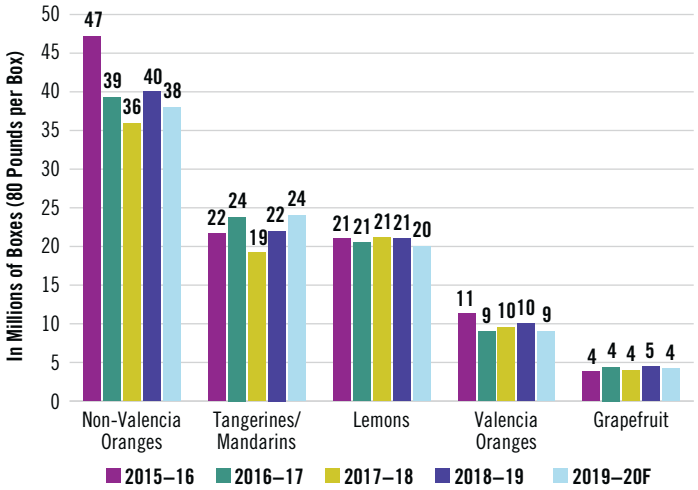
Lemons – The 2019/20 U.S. lemon crop is projected to be 21.4 million 80-pound boxes, down 11% over last season. Arizona is projected to have a slight production gain, while California production is estimated to decrease to 20 million 80-pound boxes, down 12% from the prior year. Demand and fruit quality is considered good. The strong demand over the last few years has increased imported fruit, bringing down prices slightly. However, the market has generally been able to absorb this increased volume.

Valencia Oranges – The 2019/20 U.S. valencia crop is projected to be up 2% from the prior season at 51.7 million 80-pound boxes. Florida continues to be the leading valencia producer with 82% of total output and California making up 17%. The majority of the fruit grown in California is used for fresh consumption, while Florida's crop is generally utilized for juice. California valencia harvest concluded at the end of October 2019. Pricing was lower than past seasons.[28]

Navel Oranges – The 2019/20 California navel crop harvest began mid-October. Current estimates suggest that U.S. production should be 72 million 80-pound boxes, down roughly 2% in volume over last season. The California crop is anticipated to be 38 million 80-pound boxes, down 6% year-over-year.[29] California fruit sizing this year is trending large, and quality looks to be strong, with utilization averaging 90%. Domestic pricing is averaging $26 per box, slightly lower than last season with the larger sizes capturing a $5 to $8 premium.

Mandarins – The 2019/20 U.S. mandarin crop is estimated at 24 million 80-pound boxes, 95% of which is produced in California with the balance grown in Florida. 2019/20 production is forecasted to be down 11%. Overall, quality and sizing have been good, with utilization hovering around 75%. According to IRI retail data, mandarin sales show an 8% volume decline, despite a 4% retail price drop. Many retailers have reported that competitively priced apples and grapes are likely disrupting mandarin sales. Sales moving into 2020 are anticipated to improve as tariffs that were imposed in 2019 are taking effect and will likely limit, if not prevent foreign citrus imports. Overall citrus imports from South Africa are down 50% and this trend is being seen for the clementine and mandarin crops.

CITRUS Historical and Projected Production for California Citrus, 2015/16 through 2019/20F



95%

MARKET SHARE

U.S. MANDARIN MARKET

California is the leading mandarin grower in the U.S. with a projected 24 million 80-pound boxes in 2019/20, with the balance grown in Florida.

-6%

FROM 2018/19

NAVEL PRODUCTION IN CALIFORNIA

The estimated production for navel oranges in 2019/20 is expected to be 38 million 80-pound boxes. California fruit sizing this year is trending large, and quality looks to be strong, with utilization averaging 90%.

Source: USDA, PAI Research

ALMONDS

An Overview of the Western U.S. Almond Market

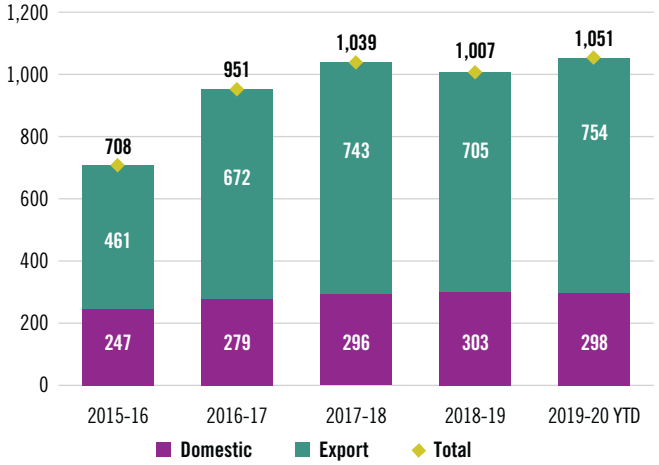
The 2019 almond crop receipts have reached 2.38 billion pounds, up 8.3% from a year ago, according to the Almond Board of California.[30] Last year crop receipts through December accounted for 97% of the total crop. Using the same forecast, the final 2019 crop estimate would be 2.46 billion pounds, representing a supply increase of 8.6% from last year. Current crop receipts and this total crop estimate are much higher than the NASS objective estimate of 2.20 billion pounds released in July 2019.[31] The NASS subjective estimate of 2.50 billion pounds, which was released in May, is more in line with the 2019 crop outcome.[32] The production increase is a result of 80,000 additional acres coming into production and average yields per acre increasing by 50 pounds to 2,250 pounds per acre.[33]

Season-to-date shipments (August through December) for 2019/20 have reached 1.05 billion pounds, up 4.4% from the prior season. Commitments (inventory not shipped) has reached 610 million pounds, also up from the previous year. If the California crop finals at 2.46 billion pounds, the industry is approximately 67% sold through December 2019.

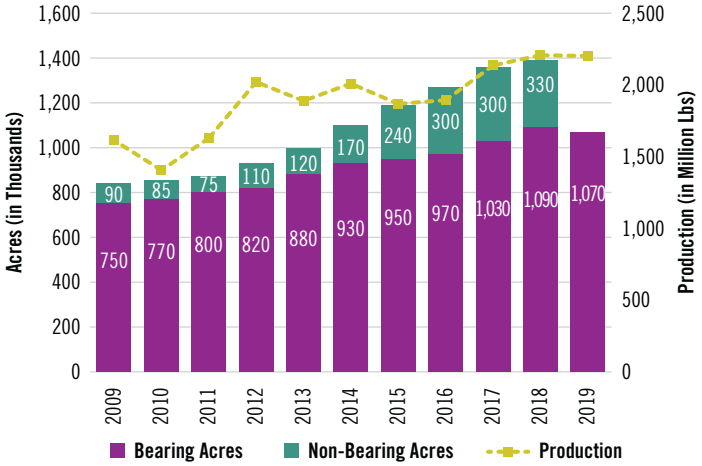
Export markets experienced growth for the year with season-to-date shipments (August through December) up 7% compared to the same time last year. Continued growth in export markets is expected as trade agreements are implemented. The Japan Free Trade Agreement went into effect January 1, bringing the duty for shelled almonds down to zero. To reduce trade tension with China, the phase-one agreement was signed mid-January. Our expectation is that China will reenter the market and increase international shipments.

For the California almond industry, 2019 production for the nonpareil crop was the largest to date, exceeding 1 billion pounds. There has been a considerable compression in variety value over the past several years, but the good quality nonpareil variety continues to hold the highest value. Current price levels are ranging from $2.55 per pound to $2.90 per pound which is slightly above prior year's range of $2.40 per pound to $2.80.

ALMONDS Domestic and Export Shipments for California Almonds, 2015/16 to 2019/20 YTD Season-to-Date (August – December)



ALMONDS Historical California Almond Acreage 2009 to 2019*



*2019 Non-bearing acreage statistics will be available in April 2020

Source: USDA, NASS, Almond Board of California, PAI Research

WALNUTS

An Overview of the Western U.S. Walnut Market

The 2019/20 walnut season YTD receipts total was 639,000 tons, down 5.5% from last year's realized production of 676,000 tons, but overall higher than the 630,000 tons projected for 2019 according to the 2019 California Walnut Objective Measurement Report. Overall quality throughout the state has been considered good. The 2018/19 marketing year finalized total shipments of shelled and in-shell walnuts at 783.5 million pounds. Season-to-date shipments (September through December) are 375 million pounds, 2.5% or nearly 10 million pounds below the same period last year. In-shell and shelled shipments to Europe are respectively 12.5% and 19.5% higher year to date. Increased shipments to Germany are the primary driver, while shipments to the rest of the world are down.

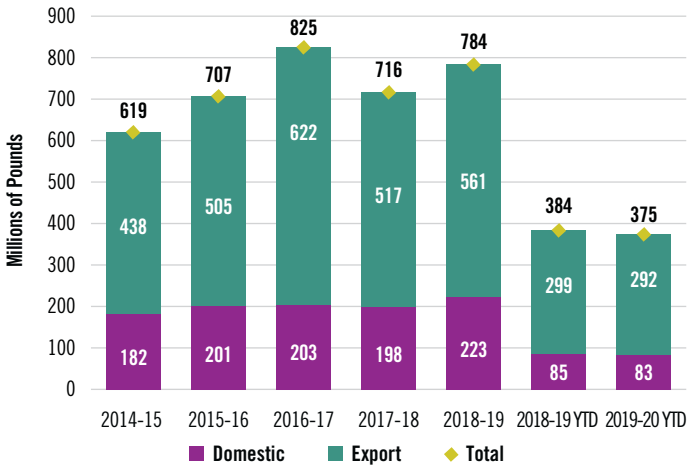
Domestic shipments reached a record high of 222.6 million pounds due to the larger 2018/19 crop combined with a renewed marketing focus by the Walnut Board. Domestic in-shell shipments were down 27.3%, while shelled shipments were 17.2% higher, totaling 207 million pounds. Domestic shipments through December 2019 were down 2.6%.[34]

2018/19 export shipments were the second highest on record, shipping a combined 560.9 million pounds. Export in-shell shipments were up 14.6%, while shelled shipments were flat. In-shell shipments to China/Hong Kong and India were down nearly 50% YoY; however, increased in-shell shipments to the Middle East more than offset the decline. Through December 2019, export shipments were down 2.5%.[35]

Globally, China is the largest producer of walnuts, followed by the U.S., Chile, and Ukraine. U.S. and Chilean producers are respectively responsible for approximately 50% and 20% of total global exports. China's 2019/20 production is expected to rebound after a short 2018/19 crop year, to nearly 1 million metric tons, and is expected to continue to grow for the next 5 to 7 years as new trees come into maturity. Chinese production primarily consists of local varieties, which are dark and more bitter, despite consumer preferences for lighter and less bitter nuts.

In 2019, India increased their tariffs on in-shell U.S.-produced walnuts to 100%, while China's remains at 65%. 2018/19 prices averaged $0.65 per pound. The shorter 2019/20 crop has helped bolster prices. The forecasted average price is $1.00/pound.

WALNUTS Domestic and Export Shipments for California Walnuts, 2014/15 to 2019/20 YTD Season-to-Date (September – December)



375M
LBS FROM 2018/19 YTD

CALIFORNIA WALNUT SHIPMENTS

Overall shipments of walnuts are 2.5% lower than last season to date.

-5.5%
FROM 2018 PRODUCTION

CALIFORNIA WALNUT PRODUCTION RECEIPTS TO DATE

2019/20 walnut season YTD receipts total was 639,000 tons.

Source: USDA, California Walnut Board, PAI Research

PISTACHIOS

An Overview of the Western U.S. Pistachio Market

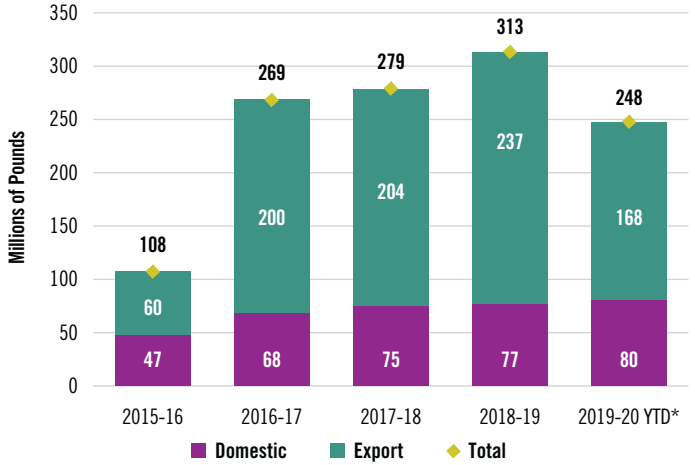
The 2019 U.S. pistachio crop harvested 749 million pounds, down 25% from the record-setting 2018 crop, but 24% larger than the previous off-year crop of 606 million pounds in 2017.[36] Overall supply is down 23% from a smaller crop and less than usual carryover from the 2018/19 season. The carryover of 132 million pounds from the 2018/19 crop year adds to the total gross inventory of 863 million pounds. Marketers have shipped through season to date (September 2019 – December 2019) 248 million pounds of which 68% was exported. As a result, the estimated total marketable inventory was 521 million pounds at December 31, 2019.[37]

Although U.S. export shipments are 40% lower than last year, the global pistachio market is currently moving as expected. The lower export shipments are due to lower sales to China and the EU. The lower sales to China are due to a rebound in the Iranian market, higher prices than 2018, and a 55% tariff on U.S. pistachios. Conversely, year-to-date domestic shipments are stable and have increased slightly versus last year.

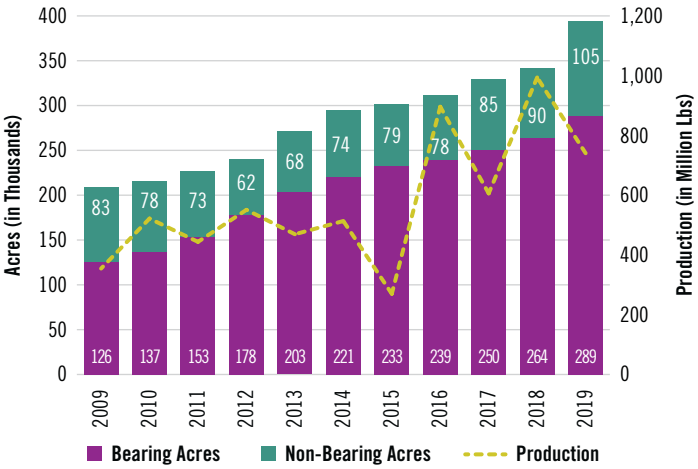
Season-to-date domestic shipments totaled 80 million pounds, up 5% from the same period last year. Export markets season to date have supported shipment levels of 168 million pounds, down 29% from prior year's 237 million pounds due to a rebound in the Iranian pistachio crop after the freeze that occurred in 2018. Exports have historically been active with higher shipment levels near the end of year in November and December. Shipments of 107 million pounds to Asia represented 64% of total U.S. exports. Consequently, China and Hong Kong are credited with 58% or 97 million pounds of export shipments. Other major export regional shipments season to date include Europe (21% of total exports) and Middle East/ Africa (7% of total exports).

The 2019/20 estimated California bearing acreage has increased 9% from 264,095 acres to 288,595 acres, with an estimated 105,000 acres of non-bearing acres.

PISTACHIOS Domestic and Export Shipments for California Pistachios, 2015/16 to 2019/20 YTD Season-to-Date (September – December)



PISTACHIOS California Pistachio Acreage in Production, 2009 to 2019



Source: Administrative Committee for Pistachios, PAI Research

APPLES

An Overview of the Western U.S. Apple Market

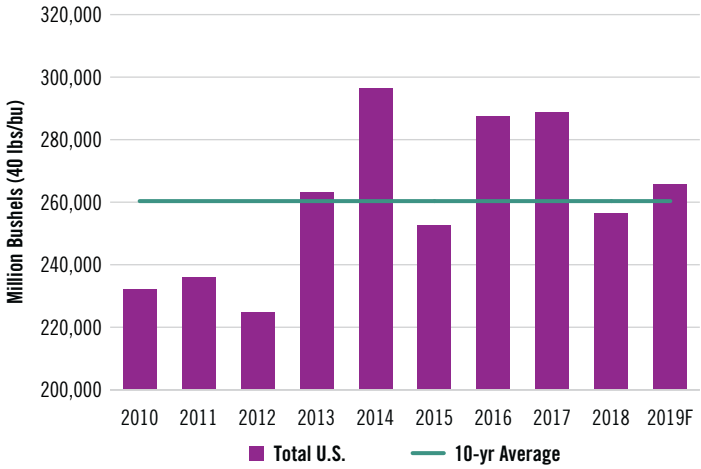
The 2019 U.S. apple crop is forecast at 10.6 billion pounds according to the USDA, an increase of 4% from the 2018 harvest of 10.2 billion pounds.[38] Washington, which accounts for approximately 65% of the nation's fresh apple production, is estimating production of 7.2 billion pounds and is projected to pack nearly 138.1 million boxes, an increase of over 18% from the 2018 season. The projected increase is due to larger harvest numbers for earlier varieties, along with excellent fruit quality that has supported the higher production forecast and strong packout estimates. The top projected varieties as a percentage of total production are: Gala (23.5%), Red Delicious (19.7%), Fuji (13.1%), Granny Smith (12.8%), Honeycrisp (12.5%), and Golden Delicious (5.5%).

The U.S. Apple Association reported fresh holdings of 104.0 million bushels as of January 1, 2020. Overall, there were 144.1 million bushels of apples in storage on January 1, a rise of 15% from the same point in 2019, and 3% above the 5-year average. The top holdings by variety were: Red Delicious, Gala, Fuji, Granny Smith, Honeycrisp, Golden Delicious, and Pink Lady.

Greater supplies due to the larger 2019 crop and slower domestic sales have added further uncertainty to an industry facing some marketing challenges. The U.S. Apple Outlook Association Conference reported in August that U.S. apple consumption fell 11% over the last five years due to increased competition from other fruits, along with too many apple varieties on the grocery shelves.[39] Despite the large 2019 crop, price ranges across nearly all apple varieties through December 2019 are only slightly lower than those of last year according to USDA Fresh Market Data.[38] The new Cosmic Crisp variety hit store shelves for the first time in December, and pricing is expected to remain strong due to limited volume.[40]

Though China has not yet agreed to drop a 60% tariff on tree fruit, the removal of Mexico's 20% retaliatory tariff in May and India's ban on Chinese apples has provided a major opportunity for U.S. apple exports. The industry exported 8.8 million boxes as of December 2019, which was 47% higher than the 5.8 million boxes exported at the same point in 2018.[41] In addition, industry analysts believe China's commitment to spend $80 billion on U.S. agricultural goods through 2021 will benefit apple producers, as Chinese consumers and retailers are said to be hurting from their inability to access premium Washington apples and cherries over the past several years.[42]

APPLES Historical Production of U.S. Fresh Apples, 2010-2019F



+4%
PRODUCTION FROM 2018

U.S. APPLE HARVEST

U.S. Apple production is forecast at 10.6 billion pounds in 2019.

65%
WASHINGTON'S TOTAL SHARE OF FRESH APPLE PRODUCTION IN THE U.S.

WASHINGTON STATE PRODUCTION

Washington is estimating production of 7.2 billion pounds in 2019 and is expected to pack nearly 138.1 million boxes, an increase of over 18% from 2018.

Source: USDA, U.S. Apple Association, PAI Research

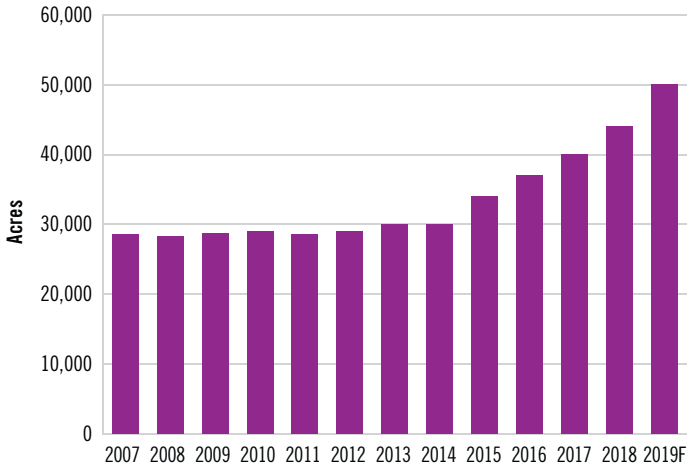
HAZELNUTS

An Overview of the Western U.S. Hazelnut Market

The 2019 hazelnut yield is projected to be 49,000 tons, a 4% decline from 2018's record-setting crop of 51,000 tons.[43] The increase in demand for hazelnut products over the past five years has incentivized farmers to either begin producing hazelnuts or expand their current acreage. Out of nearly 80,000 planted acres in Oregon, 30,000 acres are 1- to 5-year-old orchards and bearing acreage increased to nearly 50,000 acres in 2019.[44] Depending on cultural practices, hazelnuts can take anywhere from 8 to 12 years to reach full production. Production is expected to double by 2025, up to an estimated 90,000 tons, and growers have been planting an additional 8,000 acres each year.

The increased demand for hazelnuts is being driven by their perceived health benefits, along with the introduction of hazelnut-incorporated products into the chocolate industry. In 2019, the Oregon Hazelnut Marketing Board launched an export initiative to improve international reach in China and Canada, where over 80% of their hazelnuts are shipped. The Oregon hazelnut industry is also hoping the initiative will help expand its export efforts into other major markets such as: Japan, South Korea, and India.[45] Although China is a prominent hazelnut importer, the ongoing trade war with the United States has added marketing challenges with Chinese tariffs increasing from 25% to 65% in 2018.[44] Despite the tariff environment, the industry has managed to adapt, and Chinese consumers have been willing to pay higher prices for hazelnuts. As a result, a floor price of $1,660 per ton was established for Oregon growers in 2019, an increase from the $1,240 per ton floor that was established in 2018.[46]

HAZELNUTS Oregon Hazelnut Bearing Acreage (2007 – 2019F)



90,000
TONS IN 2025

OREGON HAZELNUT PRODUCTION

Due to the increased demand for hazelnut products, production is expected to double by 2025, from 49,000 tons projected in 2019 to an estimated 90,000 tons of annual production in 2025.

$1,660
PER TON FOR 2019

2019 HAZELNUT PRICES IN OREGON

Oregon growers will receive a minimum price of $1,660 per ton for hazelnuts in 2019, up from the floor of $1,240 per ton set in 2018.

Source: USDA, NASS, PAI Research

DATES

An Overview of the Western U.S. Date Market

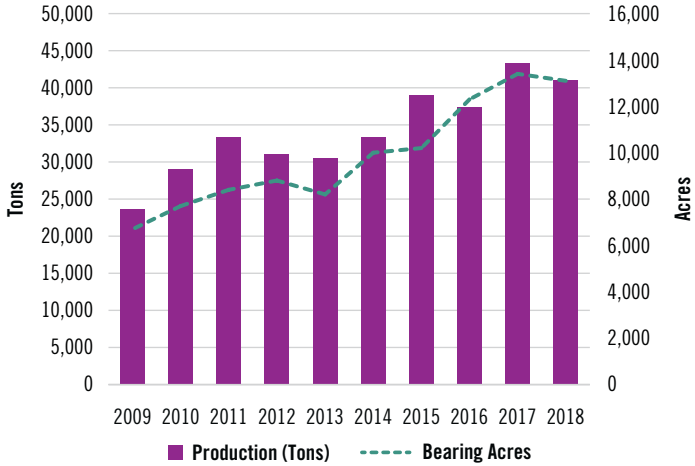
Date palms are farmed for commercial fruit production and as an ornamental in the deserts of southern California and Arizona. These regions have an ideal climate for growing high quality dates and receive abundant water from the Colorado River. The most popular varieties grown are Deglet Noor, Medjools, Barhi, and Zahidi. Cultivation areas in California include Indio, Thermal, and Coachella Valley in Riverside County and Bard Valley in Imperial County. Coachella Valley is the largest date growing district overall. Deglet Noor, the principal variety, is grown for the fresh market and as a value-added product for the food processing sector. Date production in Arizona is concentrated along the Colorado River near Bard Valley in Yuma. The fresh market Medjool is the main variety grown in the Yuma area.[47]

California leads the U.S. in date production. Bearing acreage nearly doubled in California between 2009 and 2018.* Strong grower returns from fruit production and palm date ornamentals caused increased plantings leading into the second decadal period. Due to the increase in bearing acreage, California production also increased 73% over the same 10-year period (2009 – 2018).[48]

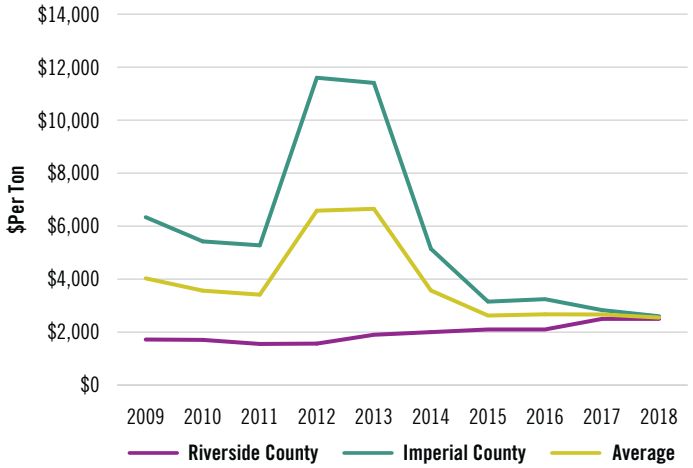
Around 10% of global date production is exported. Popular export varieties include Deglet Noor, Barhi, and Medjools. U.S. production, however, only constitutes approximately 1% of the global market supply. Iraq is the leading exporter of dates followed by the UAE Pakistan, Iran, and Tunisia, altogether accounting for 75% of exportable supplies. Although the U.S. date industry is not a major player in the global market, U.S. dates command the highest price in the world by a wide margin due to high demand from developed nations that view U.S. fresh dates as a luxury product.[49]

In 2012 and 2013, Imperial County growers experienced a substantial uplift in pricing, while Riverside County experienced modest growth. The spike in pricing was driven by tight supplies of Medjools and strong demand in export markets. In Bard Valley, adverse weather in 2014 and 2015 led to poor crop quality. The marketing groups attempted to keep prices higher than comparable quality and buyer demand fell. As a result, prices were lowered to clear inventory and move the poor-quality crop. The crop quality has since recovered, driving stable pricing seen from 2016 through the 2018 crop years.[50]

DATES California Historical Date Production and Bearing Acres from 2009 – 2018*



DATES California Historical Date Prices by County from 2009 – 2018*



*2019 Date production, bearing acreage, and prices will be available in June 2020

Source: USDA, NASS, PAI Research

TIMBER

Our Overview of the Timber Real Estate Market

2019 was a very mediocre year across the board for timberland markets. According to the NCREIF Timberland Property Index, total timberland average prices per acre across the U.S. were $1,874 in 2019, up $66 from 2018. Timberland realized a 1.30% total return and a 2.68% EBITDDA return for 2019. The Northwest and the South regions led with the highest timberland prices at $2,853 per acre and $1,810 per acre, respectively, while the Northeast and Lake States followed with prices of $1,241 per acre and $635 per acre, respectively.

Large timberland transactions in 2019 were underwhelming, representing a total of $1.27 billion compared to $3.60 billion in 2018. The most notable was the Lyme Timber purchase of 555,000 acres from Weyerhauser for $330 million ($540/ac). Notable was the IKEA acquisition from FIA at $3,400/ac for 17,000 acres. Hancock Natural Resource Group was responsible for roughly one-third of the total volume traded this year, with $299.5 million in dispositions. Across the country, there are many groups ready to deploy capital, and with many funds beginning to wind down, a robust 2020 seems likely.[51]

The U.S.-China trade war has affected the timber business. Overall, log and lumber exports were down in November 2019 by 37%. Southern yellow pine log exports were down 24%, from the same period in 2019, and hardwood log exports were down 21% for the same time period. However, there is light at the end of the tunnel, as a phase-one trade deal was signed January 15. The lumber exports fall under the "manufactured goods" portion of the agreement whose total allotment under the agreement is $77 billion, an increase over the 2017 baseline.[52] All in all, though no specific figures have been made public, the outlook is good for the U.S. timber export market.

TIMBER

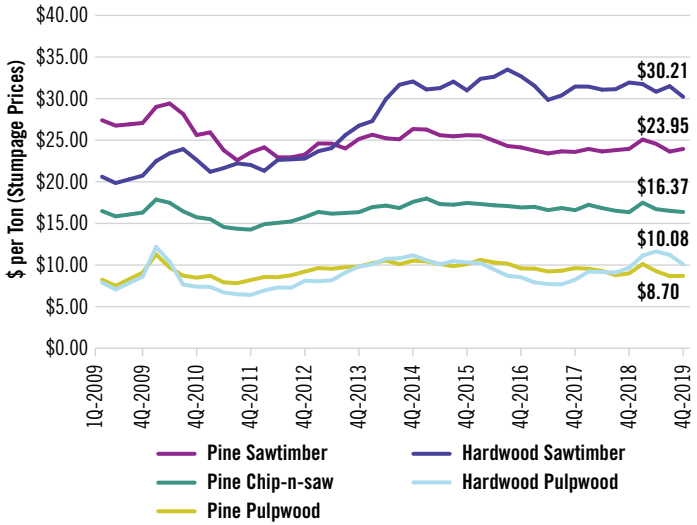
An Overview of the Eastern U.S. Timber Market

In the 4th quarter of 2019, Pine sawtimber and Pine chip-n-saw prices were relatively flat year-over-year at $23.95 and $16.37, respectively. The highest pine sawtimber price was in Florida, at $28.14 per ton, and Pine chip-n-saw's highest price was found in Florida at $21.59 per ton. Pine pulpwood was down $0.30 per ton year-over-year and Hardwood sawtimber was down $1.72 per ton, respectively, representing 3.3% and 5.4% decreases from the prior year. The highest mixed hardwood sawtimber price was in Alabama at $40.08. The highest Oak sawtimber was in Arkansas at $55.60. Hardwood pulpwood saw the highest increase year-over-year at 4.4%.[53]

Undoubtedly due to the "wall of wood" that has been reported on for quite some time now, there are many bright spots, e.g., new mills opening. Several new mills are set to open as well as additional shifts and expansions being added. Part of this being Canadian sawmills moving to the south due to the decreasing capacity in the region over the last several years. If these trends hold true, there will be temporary shortages of inventory, causing periodic upticks for landowners to take advantage of. Ultimately, due to the large number of trees planted from 1982 to 2009 (approximately 2 million trees), it will take multiple years for the new mills in operation to absorb the excess inventory on the stump.

The Homebuilder Market Index (HMI) hit new highs in December 2019, at a score of 76, a level not seen since 1998. The six-month rolling average was 70, a level comparable to 2005. However, private expenditure on single family housing was down 7.7% from 2018 through the first 11 months of 2019. Also, private residential expenditures were down 12.4% from 2018. These figures are largely attributable to tightening in buildable lots, declining house size and lack of contractor availability. Overall, the housing market continued to improve with housing starts in 2019 with 1.3 million units total, up 3% from 2018, the highest levels since 2007.[54]

TIMBER Historical South-wide Average Timber Stumpage Prices ($/ton) For Five Major Products Categories 1Q09 – 4Q19



+4.4%
PER TON
FROM Q4 2018

U.S. HARDWOOD PULPWOOD

Stumpage prices for hardwood pulpwood prices ended at $10.08 per ton, up $0.42 from the 4th quarter in 2018.

+3%
FROM 2018

U.S. HOUSING STARTS

Housing unit starts totaled 1.3 million units in 2019.

Source: Timber Mart-South, Fastmarkets RISI

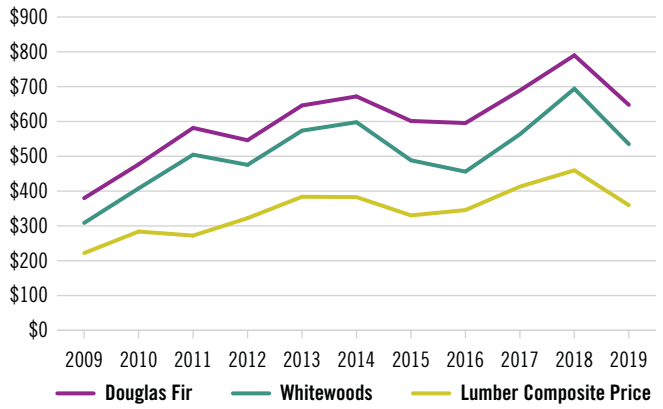
TIMBER

An Overview of the Western U.S. Timber Market

In the 4th quarter of 2019, Douglas Fir prices reached over $800/MBF, and Whitewood prices were above $500/MBF, respectively, due to transportation constraints. This caused some builders to delay starts, which has now leveled off. Due to the high stumpage prices in 2018, there was a price correction in 2019. Year-over-year Douglas Fir was down 22% from 2018 at $648/MBF, while Whitewood was down 30% below 2018 at $535/MBF.[55, 56]

The Western timberland market seems to be plagued by nervousness. Landowners are cautious to test properties on the market, resulting in very little deal flow. Log prices adjusting back 20% has large landowners on the sidelines. Rayonier's acquisition of Pope Resources has helped shore up the support for the PNW as well as Catchmark and FIA's new and increased regional presence in the last few years. 2020 should show moderate improvements. A slight uptick in Douglas Fir in 2020 is called for by many experts. Coastal Hemlock was hurt more by the U.S.-China trade war but should rebound with a phase-one deal having been reached.

TIMBER Random Lengths Log Lines Historical Prices 2009 – 2019



-$159
PER MBF
FROM 2018

WHITEWOOD PRICES

Average Whitewood prices for 2019 decreased 30% from last year.

-28%
FROM 2018

FRAMING LUMBER PRICES

Average Lumber prices were $359 per MBF for 2019 compared to $460 per MBF for the same time period last year.

Source: Fastmarkets RISI, WillSonn Adivsory

CONTACTS

AGRICULTURAL FINANCE

CORPORATE

Jess Jarratt
Atlanta, GA
Head of Agricultural Finance & Investments
404.704.8971
jess.jarratt@pgim.com

Rachelle Schlesinger
Roseville, CA
Executive Director
916.789.4073
rachelle.schlesinger@pgim.com

EASTERN REGION

Josh Culpepper
Orlando, FL
Executive Director
407.649.2197
josh.culpepper@pgim.com

Charlie Hurst
Orlando, FL
Senior Associate
407-235-7930
charlie.hurst@pgim.com

CENTRAL REGION

John Nitz
Lisle, IL
Executive Director
630.829.4679
john.nitz@pgim.com

Shane Hutchinson
Jonesboro, AR
Executive Director
870.217.6365
shane.hutchinson@pgim.com

Ted Cybularz
Champaign, IL
Executive Director
636.544.9472
ted.cybularz@pgim.com

Ethan Branscum
Jonesboro, AR
Senior Associate
870.333.1469
ethan.branscum@pgim.com

WESTERN REGION

William Beyer
Roseville, CA
Executive Director
916.789.4070
william.beyer@pgim.com

Steve Garland
Roseville, CA
Vice President
916.789.4026
steven.garland@pgim.com

Nicole Pedro
Roseville, CA
Vice President
916.789.4072
nicole.pedro@pgim.com

Frank Oberti
Fresno, CA
Executive Director
559.437.3262
frank.oberti@pgim.com

Bill Sciacqua
Fresno, CA
Executive Director
559.437.3265
bill.sciacqua@pgim.com

Jon Dominguez
Fresno, CA
Executive Director
559.437.3264
jon.dominguez@pgim.com

Pacific Northwest Region

Luke McCarthy
Hood River, OR
Executive Director
541.399.4371
lucas.mccarthy@pgim.com

TIMBERLAND CAPITAL GROUP

Seth Palmer
Memphis, TN
Executive Director
901.473.7821
seth.palmer@pgim.com

Doug Moore
Memphis, TN
Senior Associate
478-357-0213
doug.moore@pgim.com

For additional information or to contact other Investment Professionals, please visit our website at pgimrealestate.com

CONTACTS

AGRICULTURAL EQUITY INVESTMENTS

CORPORATE

Jess Jarratt
Atlanta, GA
Head of Agricultural Finance & Investments
404.704.8971
jess.jarratt@pgim.com

Jamie K. Shen
San Francisco, CA
Managing Director
415.291.5025
jamie.shen@pgim.com

Christopher Jay
Lisle, IL
Executive Director
630.829.4689
christopher.jay@pgim.com

Jim Holstein
Lisle, IL
Vice President
630.829.4682
James.Holstein@pgim.com

Derek Fritz
San Francisco, CA
Vice President
415.291.5002
derek.fritz@pgim.com

EASTERN REGION

Ed Lassiter
Orlando, FL
Executive Director
407.649.9601
ed.lassiter@pgim.com

Juan David Castro-Anzola
Orlando, FL
Vice President
407.649.4383
juan.castroanzola@pgim.com

CENTRAL REGION

Jon Mark Erstine
Memphis, TN
Executive Director
901.758.3340
jon.erstine@pgim.com

WESTERN REGION

Steve Fessler
Fresno, CA
Executive Director
559.437.3243
steve.fessler@pgim.com

Jason Pucheu
Fresno, CA
Executive Director
559.437.3254
jason.pucheu@pgim.com

Fendley Ragland
Fresno, CA
Vice President
559.437.3241
fendley.ragland@pgim.com

Sim Batth
Fresno, CA
Senior Investment Associate
559.437.3242
sim.batth@pgim.com

FARM MANAGEMENT

EASTERN REGION

Dan Bott
Orlando, FL
Vice President
772.633.9273
daniel.bott@pgim.com

CENTRAL REGION

Royce Bryant
Memphis, TN
Vice President
901.758.3351
royce.bryant@pgim.com

WESTERN REGION

Kenneth Peters
Fresno, CA
Vice President
559.437.3245
ken.peters@pgim.com

Justin Wylie
Fresno, CA
Farm Manager
559.577.9667
justin.wylie@pgim.com

Dale Arthur
Fresno, CA
Farm Manager
559.437.3246
dale.arthur@pgim.com

For additional information or to contact other Investment Professionals, please visit our website at pgimrealestate.com

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