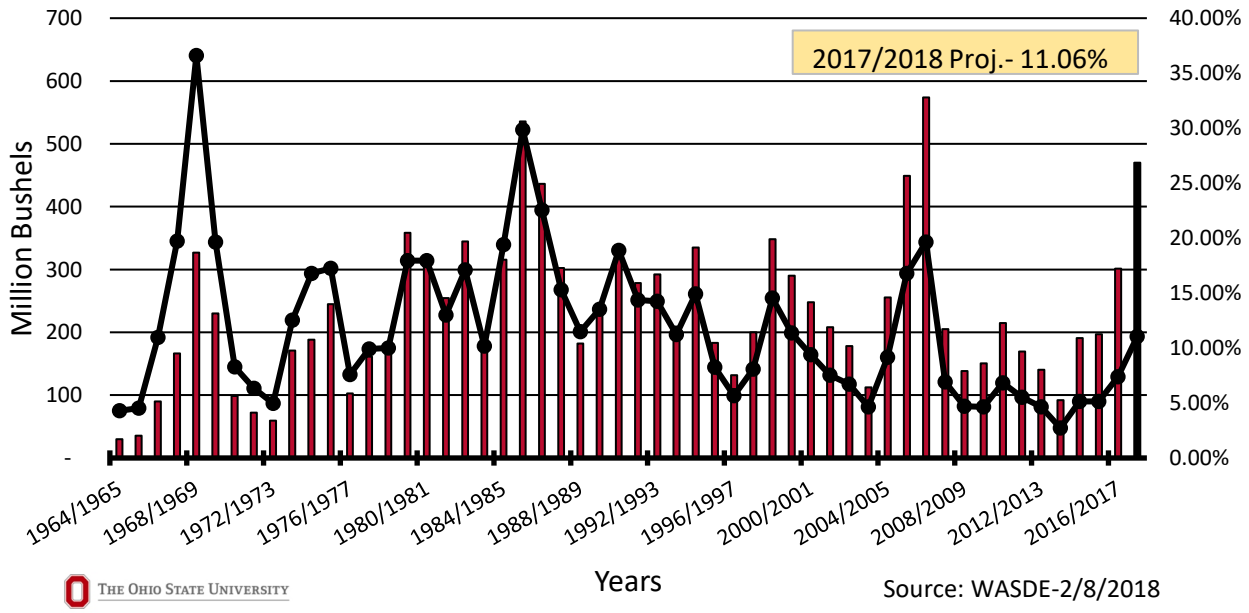
Grain Storage in the United States and Abroad

Happy Grain Bin Safety Week! That right, February 18th through the 24th is national Grain Bin Safety Week. Grain bins are certainly nothing to play chicken with as the grain inside, while used to make the food that nourishes our bodies, can also be a quicksand-like hazard. Taking extreme caution and having at least one other person around while inside a grain bin is highly recommended. In fact, since some grain bins are located on the edge of the field without a readily known mailing address, making sure the address is posted somewhere visible is just an added layer of preparedness in case emergency help is needed. Grain bin safety is important! In honor of Grain Bin Safety week here is a quick review of the grain on hand both in the United States and internationally.

There should be little surprise that stocks, both domestically and abroad, have been on the rise the last five years as world prices for corn, soybeans, and wheat declined after their peaks in 2012/13. Five straight years of above trend yield for worldwide grain production have contributed to the abundant stocks. An example of trend would be if a football team won six games one year, seven the next, and eight the following. Given trend, one would expect that in the fourth year, the team would win nine games, but instead they won fourteen. This would be an above trend year. Arguments can be made whether the exceptional world yields were products of good weather globally or technological advancements in seed. Lower prices for grains have encouraged producers to retain larger portions of their crop on farm or in storage at local elevators in the hope for an upward bounce in price.

Starting with domestic soybeans, 2017 was another solid year for soybean production. The National Agricultural Statistics Service will make the county yield estimates for 2017 official later in February, but early estimates are for 49 bushels per acre. This is slightly down from the previous year of 52 bushels per acre. However, planted acres for soybeans have steadily increased the last few years and the increased acreage more than compensated for the decrease in yield. Soybean production in the U.S. totaled a record 4.39 billion bushels in 2017. Luckily there has been an increased use for crushed soybeans, soy protein and soybean oil. Figure 1 shows domestic stocks and the percent of total use.

Figure 1: U.S. Soybeans: Ending Stocks and % of Use



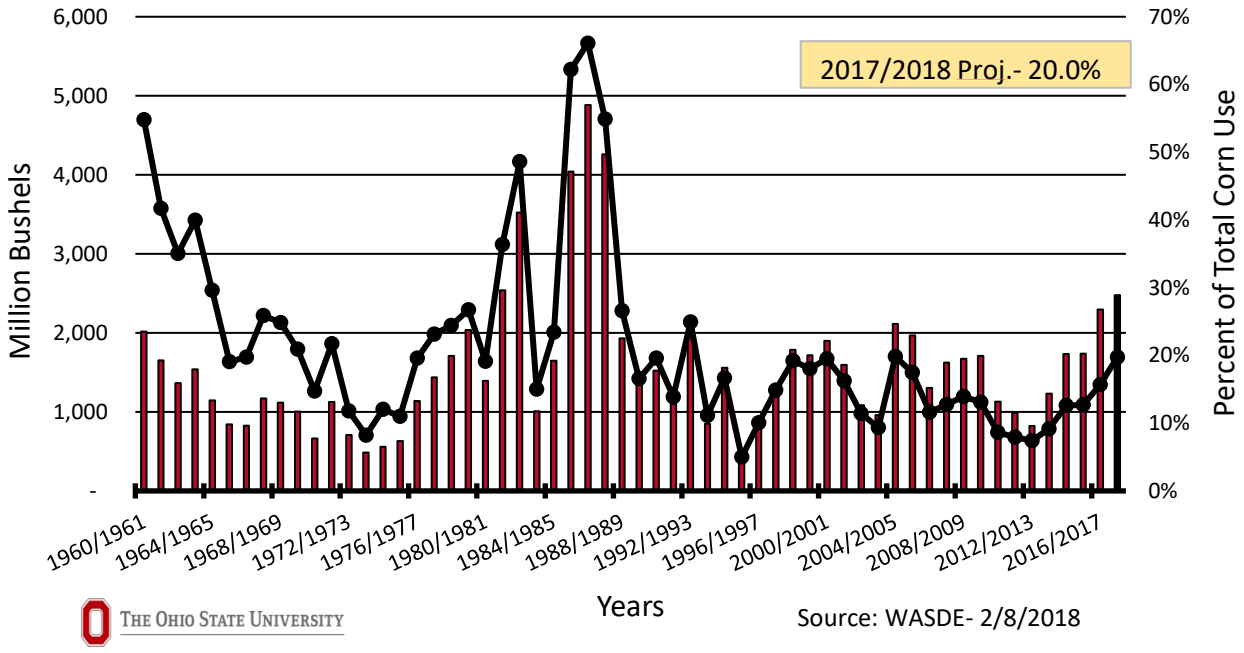
The Ohio State University

Source: WASDE-2/8/2018

In figure 1, we see that the stocks to use ratio for U.S. soybeans has increased the last four years largely contributed to strong yields across the Midwest and increased acreage. Due to profitability of corn and soybeans per acre, the United States Department of Agriculture has projected that soybean acreage will continue to increase in the years to come. The U.S. exports a little over 2 billion bushels of soybeans each year, which is almost half of the total use of domestic production.

Moving to "King" corn, the same story roughly applies. However, this time record corn yields across the Corn Belt were counteracted with a decrease in harvested acreage. Not all of the increase in soybean acreage for 2017 came from corn acreage, as wheat and sorghum were also contributors. Especially in Kansas, Nebraska and the Dakotas. However, with a national yield of 177 bushels per acre, 2017 beat the previous record yield. Total production in the U.S. came in at 14.6 billion bushels, down 4 percent from 2016.

Figure 2: U.S. Corn: Ending Stocks and % of Total Use

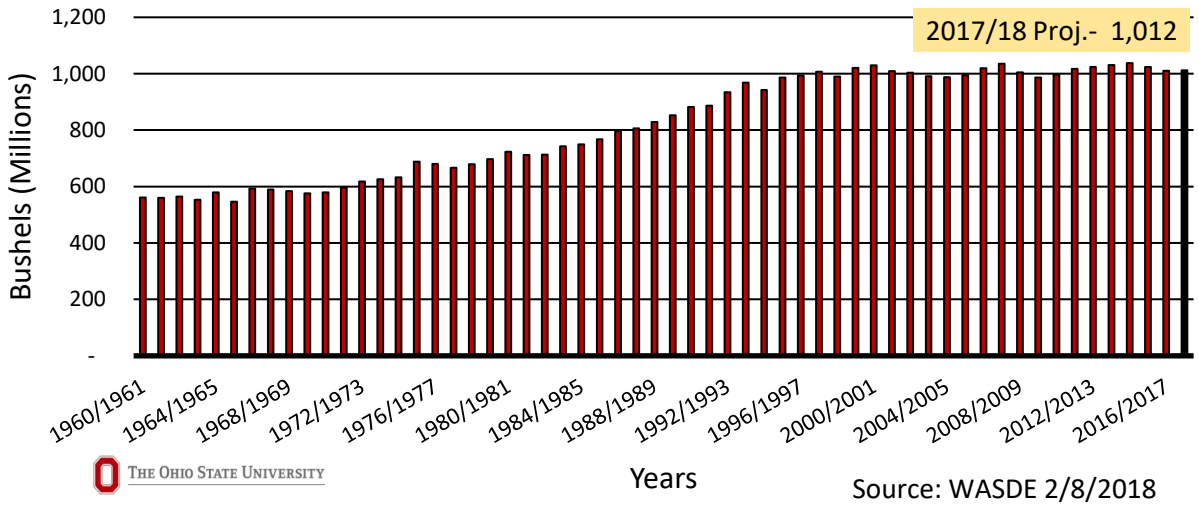


At 20 percent, the stock to use ratio for corn has increased in six consecutive years. Another strong yielding year or a decrease in the demand for corn products could put even more downward pressure on corn prices. Ethanol production uses about 5.5 billion bushels and corn used for animal feed makes up about 5.6 billion bushels. These two categories make up the largest segments of U.S. corn use. Currently the World Agricultural Supply and Demand Estimates are projecting a 2017/18 marketing year average price of $3.30, which is below Ohio's average breakeven price and $0.40 below the reference price created in the Agricultural Adjustment Act of 2014 for Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) payments at $3.70.

For wheat, one of the bright spots is that the U.S. stocks to use ratio has started to decrease after a historic high last year. However, the downside for wheat is that there has not been the large driver for demand like in corn and soybeans with ethanol and protein respectively. Since 1996, the total use for wheat has remained relatively flat with slightly decreasing production on reduced acreage. Until demand for wheat picks up, wheat acreage will continue to decrease. The 2018 wheat planning was

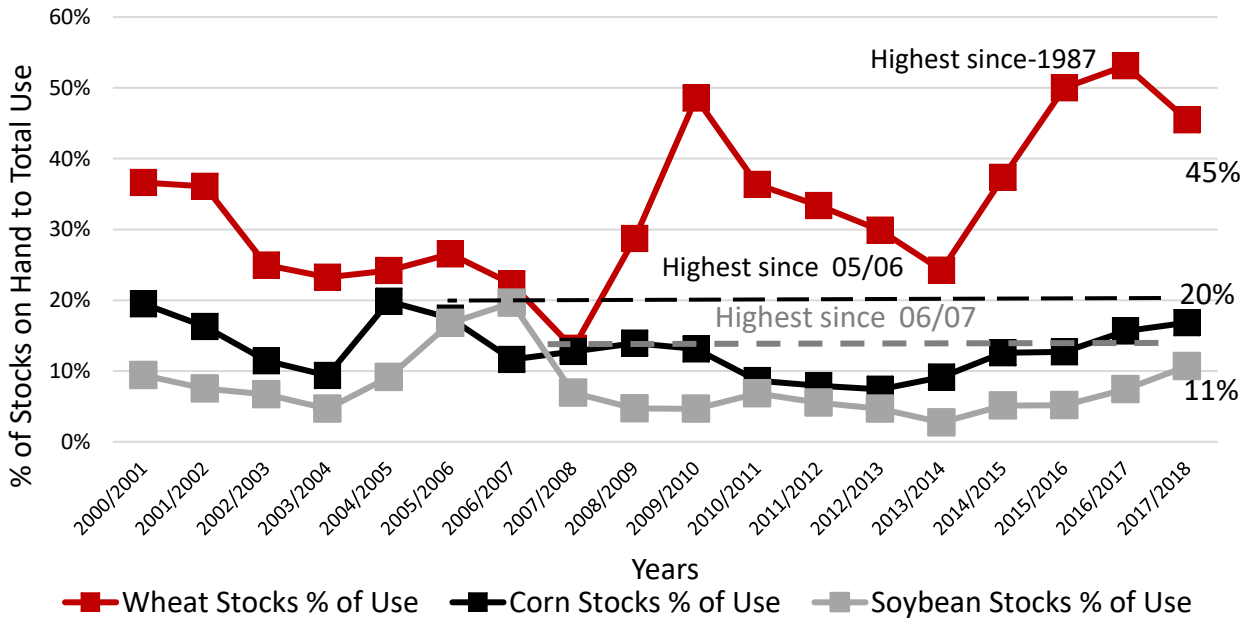
down 1 percent from 2017 and down 10 percent from 2016 coming in at the second lowest projected planting on record. The WASDE projected price for 2017/18 is $4.60 also below the reference price of $5.50. Figure 3 shows the quantity of U.S. wheat use. The majority of wheat use is in foodstuffs like bread, cookies and pasta.

Figure 3: U.S. Wheat Food, Seed & Industry Use



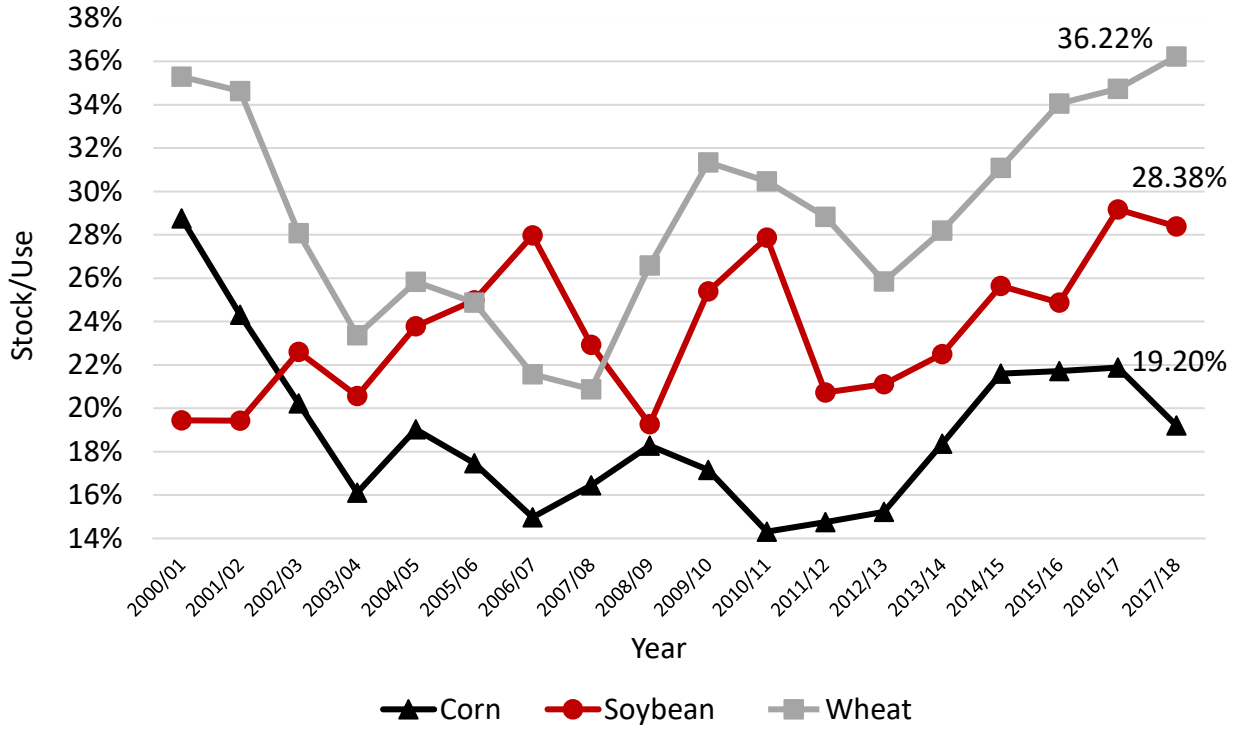
Putting all three crops on the same graph, Figure 4 compares the stock to use ratios for all three U.S. commodities.

Figure 4: U.S. Stocks to Use Ratios



However, the U.S. is not the only place with large ending stocks in storage. World supplies of corn, soybeans and wheat have also been on the increase the last few years as referenced by Figure 5. Corn and soybeans stocks to use ratios have both showed a decrease on stronger demand and a growing drought in South American crops specifically Argentina causing reduced yields.

Figure 5: World Ending Stock to Use Ratios



International trade is a topic of popular discussion in America right now as the renegotiation process of the North America Free Trade Agreement just finished its sixth round of negotiations. Canada and Mexico are importers of U.S. corn and soybeans with China remaining as the largest importer of U.S. soybeans. A strong U.S. dollar relative to international currencies weakens the market share of U.S. goods in the international markets. In the last few years, Brazilian soybeans have chipped away at the U.S. export market to several of the world's largest importers of soybeans. Exports remain vital to the U.S. as large portions of both corn and soybeans production rely on international trade.

Summary:

Stocks in the United States and globally have grown in the last few years on larger than expected yields. Large stocks suppress grain prices as grain comes to the market out of private storage when market prices tick up. It is unlikely to see large movements in future prices for the coming growing season without a weather related shock. However, local elevators will probably fluctuate their delivery price based on their need for grain. Ethanol plants in Ohio have already started to do this when needing more corn. Large stocks internationally will continue to hurt U.S. trade internationally as a strong U.S. dollar makes U.S. products more expensive. Some countries like China have reversed domestic commodity price supports to work down their stockpiles of corn. As stocks decrease, the expectation is to see larger swings in markets from weather related events both domestically and abroad. Happy National Grain Bin Safety Week!

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