Supply and Demand for Field Crops
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Supply and Demand

The primary components of market conditions that determine prices for U.S. field crops are the supply and demand situation for each crop and the value of the dollar. Supply and demand conditions are indicated by stocks-to-use (S/U) ratios which are reported monthly (USDA, WASDE 2016). Stocks are the ending quantity of a crop in the final month of the marketing year. Use is total distribution for the marketing year and includes total domestic consumption and exports. Measures of S/U represent the percentage of annual use that is available for the period between the end of the current crop marketing year and the time when production from the subsequent marketing year enters the industry supply. Crop prices attempt to ration supply with anticipated demand to achieve equilibrium stocks-to-use throughout the marketing year.

Crops are traded in global markets with U.S. currency as the common medium of exchange. Fluctuations in the value of the dollar relative to other currencies impacts U.S. crop prices. Increased value of the dollar leads to increased expenditures in terms of currencies for international purchasers of U.S. crops. This results in downward pressure for U.S. prices and could provide incentives for purchases from foreign competitors producing crops.

Figure 1 presents the dollar index for the previous year with a comparison to the 2006-2014 annual average (FSR 2016). Figures 2-16 present S/U measures with a comparison to the average for the 2006-2015 period (USDA, FAS 2016). Marketing years are September-August for corn and soybeans, August-July for rice, cotton, and peanuts, and June-May for wheat. Current price forecasts are compared to historical average prices that correspond to historical S/U measures (USDA, NASS 2016).

The dollar index has been above the 2006-2014 annual average for the previous 13 months. Increasing strength of the dollar results in downward pressure for U.S. commodity prices. The dollar index increased in July and is on an increasing trend after following a decreasing trend during February-April.

Figure 1. Broad Dollar Index, Price Adjusted, Monthly July 2015 to July 2016, Average 2006-2014 = 88.0
U.S. corn stocks-to-use for 2016 is projected greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding average of $4.50/bu. The current USDA price forecast is $3.15/bu. for the crop harvested in 2016. Historically, U.S. corn price is significantly responsive to S/U.

Stocks-to-use in the rest of the world for 2016 is projected greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding average of $4.50/bu. The current USDA price forecast is $3.15/bu. for the crop harvested in 2016. Large foreign supply limits export potential for relieving excessive supply in the U.S. Ending 2016 S/U is projected lower than 2015 S/U.

Monthly projections for August 2016 U.S. corn stocks-to-use have decreased in the three most recent months from levels earlier in the marketing year. The current projection for the 2015-2016 marketing year is slightly less than the ending stocks-to-use in the previous marketing year.
U.S. soybean stocks-to-use for 2016 is projected greater than the average for 2006-2015 which results in downward pressure for price that is below the 2006-2015 average price of $10.65/bu. The current USDA price forecast is $9.10/bu. for the crop harvested in 2016. Historically, U.S. soybean price is significantly responsive to S/U.

Figure 5. Soybean U.S. Stocks-to-Use, 2006-2015 and Average Price = $10.65/bu., Long-term Average S/U = 6.0, 2016 S/U and Price Forecasts

Stocks-to-use in the rest of the world for 2016 is less than the 2015 S/U and less than the long-term average. ROW stocks-to-use indicates potential for increased exports to relieve excessive U.S. supply. However, the current USDA price forecast of $9.10/bu. for the crop harvested in 2016 is less than the 2006-2015 average U.S. soybean price.


Monthly projections for August 2016 U.S. soybean stocks-to-use are slightly greater than the 2006-2014 average and greater than ending S/U in the previous marketing year. Monthly projections have decreased in each of the five most recent months.

Figure 7. Soybean U.S. Stocks-to-Use, Year Ending August 2015, Projected Year Ending August 2016, by September 2015 to August 2016 WASDE Report, Long-term Average S/U = 6.0
U.S. long-grain rice stocks-to-use for 2016 is projected greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding average of $5.70/bu. The current USDA price forecast is $4.50/bu. for long-grain rice harvested in 2016. Projected stocks-to-use for 2016 represents an increase from 2015 ending stocks-to-use.

Stocks-to-use in the rest of the world for 2016 is greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding long-grain rice average of $5.70/bu. Recent estimates of ROW S/U for 2015 and 2016 are not as tight as earlier reports. Historically, U.S. long-grain rice price is significantly responsive to values of the dollar. Thus, the current high value of the dollar is exerting downward pressure on long-grain rice price. The current USDA price forecast is $4.50/bu. for long-grain rice harvested in 2016.

The August estimate for the 2015-2016 ending long-grain rice stocks-to-use in Figure 8 is lower than the July projection from the July WASDE report in Figure 10. The August estimate for the 2015-2016 marketing year is lower than the July 2015 level that ended the previous marketing year. Thus, carry over into the current 2016-2017 market year is not as great as earlier estimates.
U.S. all wheat stocks-to-use for 2016 is greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding average of $6.10/bu. The current USDA price forecast is $3.70/bu. for the crop harvested in the 2016 marketing year. Historically, U.S. wheat price is significantly responsive to S/U. Ending stocks in Figure 11 correspond to beginning stocks for winter wheat planted in 2016 and harvested in 2017.

Stocks-to-use in the rest of the world for 2016 is greater than the average for 2006-2015 which results in downward pressure for price that is below the corresponding average of $6.10/bu. The current USDA price forecast is $3.70/bu. for the crop harvested in 2016. Ending stocks in Figure 12 correspond to beginning stocks for winter wheat planted in 2016 and harvested in 2017.

Monthly estimates for May 2016 U.S. all wheat stocks-to-use had an increasing trend and were significantly greater than ending stocks-to-use of the previous marketing year. Ending stocks in Figure 13 correspond to beginning stocks for winter wheat planted in 2015 and harvested in 2016.

Soft red winter wheat ending S/U for the current 2016-2017 market year is projected as 57.0 which compares to a long-term average of 38.0. This exerts downward pressure on prices for Arkansas wheat potentially planted in the fall of 2016 for harvest in 2017.
U.S. cotton stocks-to-use for 2016 is projected approximately equal to the average for 2006-2015.

Cotton stocks-to-use in the rest of the world for 2016 is projected greater than the average for 2006-2015. 2016 ROW stocks-to-use is projected to decline for the second consecutive year.

U.S. peanut stocks-to-use for 2016 is projected greater than the average S/U for 2006-2015. The projection for 2016 is a decrease from the estimated level ending the previous market year for the crop harvested in 2015.
Table 1. U.S. Annual Animal Product Production

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef (Million Pounds)</th>
<th>Pork (Million Pounds)</th>
<th>Broiler (Million Pounds)</th>
<th>Turkey (Million Pounds)</th>
<th>Total Red Meat &amp; Poultry (Billion Pounds)</th>
<th>Egg (Million Dozen)</th>
<th>Milk (Billion Pounds)</th>
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<tbody>
<tr>
<td>2015</td>
<td>23,698</td>
<td>24,501</td>
<td>40,048</td>
<td>5,627</td>
<td>94,630</td>
<td>7,977</td>
<td>208.6</td>
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<td>2016 Projected</td>
<td>24,962</td>
<td>24,907</td>
<td>40,996</td>
<td>5,985</td>
<td>97,610</td>
<td>8,349</td>
<td>212.1</td>
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<tr>
<td>2017 Projected</td>
<td>25,800</td>
<td>25,510</td>
<td>42,060</td>
<td>6,135</td>
<td>100,296</td>
<td>8,515</td>
<td>215.8</td>
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Table 2. U.S. Annual Prices for Animal Products

<table>
<thead>
<tr>
<th>Year</th>
<th>Steers ($/Cwt.)</th>
<th>Barrows and Gilts ($/Cwt.)</th>
<th>Broilers (Cents/lb.)</th>
<th>Turkeys (Cents/lb.)</th>
<th>Eggs (Cents/Doz.)</th>
<th>Milk, All ($/Cwt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>148.12</td>
<td>50.23</td>
<td>90.50</td>
<td>116.20</td>
<td>181.80</td>
<td>17.12</td>
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<td>125.50</td>
<td>47.50</td>
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<td>86.00</td>
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<td>2017 Projected</td>
<td>122.50</td>
<td>45.00</td>
<td>86.50</td>
<td>115.00</td>
<td>90.50</td>
<td>16.30</td>
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References


