

USDA's ten-year projections for the corn sector

Each year in preparation for the Agricultural Outlook Forum at the end of February, the USDA releases a report providing projections for the agricultural sector for the next ten years (<http://tinyurl.com/jzi8g8v>). The projections cover production and utilization of agricultural commodities including agricultural trade as well as crop prices and net farm income. The newly released 2017-2026 projections were completed prior to the new administration's withdrawal from the Trans-Pacific Partnership and does not include changes in NAFTA.

To generate their projections, the USDA makes specific assumptions about macroeconomic conditions, policy, weather, and international developments. In the case of farm policy, the provisions of the 2014 Farm Bill are assumed to be continued through the projection period. However, it is assumed that farmers would have the opportunity to make a new choice between Agricultural Risk Coverage and Price Loss Coverage for the 2019-2026 period.

We begin our analysis of the new baseline projections by looking at corn because corn is the most widely grown crop in the US. For corn farmers, the 2017-2026 long-term price projection does not contain good news. For 2017 corn's season average price received by farmers is projected to be \$3.30 per bushel, which is unchanged from USDA's price projection for the 2016 crop marketing year.

In subsequent years the price begins a slow climb to \$3.70 for the 2026 crop marketing year. Farmers who have their land and machinery paid off can probably survive at those prices. But for many farmers, receiving \$3.70 a decade from now is nothing short of catastrophic.

Let's work our way through the production and utilization numbers to see how the USDA comes to their price projections, remembering that any deviation in the actual numbers from those numbers in the projection will move the price up or down.

Corn planted acres are expected to decline from 94.5 million acres in 2016 to 90 million acres in 2017. Over the next nine years, planted acres continue to decline, reaching 86 million acres in 2026. Harvested acres make a similar decline from 86.8 million acres in 2016 to 82.3 million acres in 2017, reaching 78.3 million acres in 2026.

Whether or not corn will shed 8.5 million planted acres over the ten-year period remains to be seen. What we do know from history is that much of any reduction in corn acreage will show up as increased acreage for other crops, especially soybeans. As we have seen, total acreage of major crops increases rapidly in response to higher prices but, once that additional acreage is brought into production, it takes a much longer time to shed those extra acres.

Yield is projected to return to the long-term trend in 2017 declining from 2016's 175.3 bushels per acre to 170.8 bushels per acre. Over the next nine years the yield increases steadily, reaching 188.8 bushels per acre in 2026. Any record-setting yield years not offset by changes in demand would significantly depress prices from those in the projection. On the other hand, a string of below-trendline yields would have a positive impact on prices.

With lower acreage and a return to trend-line yields, 2026 corn production is 14.8 billion bushels, 400 million bushels below the 15.2 billion bushels harvested last fall.

On the demand side, feed use is projected to increase by 425 million bushels while ethanol and by-products is projected to decrease by 175 million bushels. Corn exports are projected to reach 2 billion bushels or above for 8 of the next 10 years.

Challenging these demand numbers is the dependence of ethanol utilization on the continued political support for the Renewable Fuel Standard (RFS). In a changing political climate, it is difficult to gauge whether or not the projected low prices will result in increased support for the RFS. With regard to exports, corn exports first exceeded 2 billion bushels in the 1978-1981 period and exceeded that level 8 times over the next 36 years. For corn exports to exceed 2 billion bushels 8 times over the next 10 years would be a significant change.

The baseline includes the variable cost of production per harvested acre of corn which increases from \$337 per acre in 2016 to \$367 in 2026. To calculate the fixed cost of production per harvested acre of corn we extrapolated from the USDA Commodity and Costs of Returns tables for corn (<http://tinyurl.com/j2pxesv>) using a 1 percent per annum inflation factor. That calculation would result in a 2026 fixed cost of production of \$385 per acre for a total cost of production per acre of \$752.

The projected revenue per acre is \$699 per acre, leaving the corn farmer with a \$53 per acre loss or 28¢ per bushel. With a \$3.60 reference price, farmers would receive little in the way of government payments. The total loss for the next ten years of corn production would be \$867 per acre.

Next week we will turn to other crops.

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