Farm bill economics: Commodity markets, farm income

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Agenda

- Global grain and oilseed markets
- Outlook for particular commodities
- Farm income outlook
Global grain and oilseeds
Production, use and stocks

Yields per hectare for an aggregate of 9 grains (corn, wheat, rice, sorghum, barley, oats, rye, millet and mixed grains) and 5 oilseeds (soybeans, rapeseed, sunflower seed, peanuts and cottonseed).

Source: author calculations based on Feb.2018 data from USDA’s PSD Online
Yields per hectare for an aggregate of 9 grains (corn, wheat, rice, sorghum, barley, oats, rye, millet and mixed grains) and 5 oilseeds (soybeans, rapeseed, sunflower seed, peanuts and cottonseed).
Global grain and oilseeds

Area harvested

World area harvested of 9 grains (corn, wheat, rice, sorghum, barley, oats, rye, millet and mixed grains) and 5 oilseeds (soybeans, rapeseed, sunflower seed, peanuts and cottonseed).

Increase in world area harvested from 2002-2017: 118 million ha.

Total U.S. area planted to 13 crops in 2017: 105 million ha.

Source: author calculations based on Feb.2018 data from USDA’s PSD Online
World population and use of grains and oilseeds

Source: Author calculations based on Feb. 2018 USDA PSD Online data for 9 grains and 5 oilseeds and U.S. Census Bureau population estimates

World population increase in 2017: 1.1% (79 million people)
Two major sources of grain and oilseed demand increases

U.S. corn used in ethanol plants

China’s use of corn and soybean meal for feed

Source: USDA World Agricultural Supply and Demand Estimates, various issues, and USDA PSD Online, February 2018
Per-capita use of grains and oilseeds

Source: Author calculations based on Feb. 2018 USDA PSD Online data for 9 grains and 5 oilseeds and U.S. Census Bureau population estimates.
Corn: USDA farm price projections

Sources: USDA WASDE, Feb. 2018; USDA long-term baseline, Nov. 2017
Why corn price projections matter: PLC outlays if 70% of base in PLC

<table>
<thead>
<tr>
<th>Marketing year average corn price ($/bu.)</th>
<th>PLC outlays if 70% elect PLC in 2019</th>
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<tbody>
<tr>
<td>$3.80</td>
<td>$0</td>
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<tr>
<td>$3.70</td>
<td>$0</td>
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<tr>
<td>$3.60</td>
<td>$0.77 billion</td>
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<tr>
<td>$3.50</td>
<td>$1.53 billion</td>
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<tr>
<td>$3.40</td>
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<tr>
<td>$3.10</td>
<td>$4.59 billion</td>
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<tr>
<td>$3.00</td>
<td>$5.36 billion</td>
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Assumes a $3.70/bushel reference price, 97.5 million base acres of corn, a program yield of 131.8 bushels/acre, and no sequestration.

In FAPRI-MU March 2017 stochastic baseline, median 2019/20 corn price was $3.69/bu., but given distribution of prices, mean PLC outlays were $2.2 billion.
Corn ARC-CO calculations for a county with U.S. average yields

Source: Author calculations using Nov. 2017 actual and projected prices and yields per harvested acre. In reality, these calculations would be different in every county.
U.S. avg. corn ARC and PLC payments
(Dollars per base acre for participating producers)

Source: FAPRI-MU March 2017 stochastic baseline (average of 500 outcomes)
Soybeans: farm and futures prices

Wheat: farm and futures prices

Cotton: farm and futures prices

Seed cotton: calculated prices given FAPRI-MU November baseline

Sources: Calculations based on FAPRI-MU projected prices for cotton fiber and cottonseed, November 2017. The reference price for seed cotton is 36.7 cents/lb. for 2018.
Long grain rice: farm and futures prices

U.S. net farm income

Farm debt-asset ratio

Summary points

- 5 straight years of above-trend world yields have resulted in large stocks, low prices
- Under “normal” conditions, projected crop prices remain far below 2010-2012 peaks
- Projected farm program costs are very sensitive to price projections
- Farm income may stop declining, but not increase much in the years ahead
Thanks!

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