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Summary

Farm bill deliberations in 2018 may leave farm programs largely intact for crop years 2019 and beyond. If so, reference prices, including a new one for seed cotton, will continue to provide some support for producers.

Farm payments are made under either the Agriculture Risk Coverage (ARC) program or the Price Loss Coverage (PLC) program, depending on which program each farmer selected in 2015. Under PLC, a payment is issued if the season-average farm price falls below the reference price.

Under ARC, the reference price serves as a minimum price in the calculation of a revenue guarantee. The price portion of the guarantee equals 86 percent of the five-year rolling average price (excluding the high and low years, with the reference price replacing any annual price that is lower than it).

For each of the major program crops in 2018, the PLC price trigger (reference price) is greater than the price portion of the ARC revenue trigger. However, PLC uses historical yields (not current yields as in ARC), which can lower the payment amount.

Reference prices are important because, across the seven crops considered in this report, annual farm prices since the 2000 crop year have been lower than today's reference prices for these crops two-thirds of the time.

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Price Triggers for Farm Programs

Farm programs are designed to assist farmers when crop prices drop below trigger levels. Program payments vary inversely with season-average farm prices, declining when the prices go up and increasing when they go down.

For crop years 2014 to 2018, payments are made under either Agriculture Risk Coverage (ARC) or Price Loss Coverage (PLC), depending on the program farmers selected in 2015.

Congressional debate on reauthorizing commodity programs is pending. Many policy observers expect that farm programs will be largely unchanged in the next farm bill and farmers will be able to reselect their program. If so, the current reference prices used in farm programs could determine when farm payments are triggered for the foreseeable future.

To examine the program trigger levels, this report compares current reference prices with historical and projected farm prices.

Reference prices and program payment triggers

The 2014 farm bill established reference prices for crop years 2014 through 2018. Selected crops are in table 1 (cotton was added this year).

- Under PLC, a payment is issued if the season-average farm price falls below the reference price. In other words, the reference price serves as the program trigger.
- Under ARC, the reference price serves as a minimum in the revenue guarantee, with the price portion equal to 86 percent of the five-year rolling average price (excluding the high and low years, with the reference price replacing any annual price that is lower than it). For ARC, the reference price is just one component of the trigger.

Table 1. Season-average farm prices and program triggers for 2018

Crop	Price 2018/19 Forecast	PLC Reference Price	ARC Price Portion of Trigger 86% x 5-year avg. (excludes high and low; reference is minimum)
Corn, \$/bu.	3.40	3.70	3.18
Soybeans, \$/bu.	9.25	8.40	8.28
Wheat, \$/bu.	4.70	5.50	4.87
Sorghum, \$/bu.	3.30	3.95	3.42
Seed cotton, \$/lb.	0.3177	0.3670	0.3156
L.G. rice, \$/cwt	11.20	14.00	12.04
Peanuts, \$/lb.	Not avail.	0.2675	0.2301

Sources: Farm prices from USDA; for cotton, Univ. of Georgia and author. Reference prices from 2014 farm bill; for seed cotton, Bipartisan Budget Act of 2018.

Because the ARC trigger also depends on yields, ARC payments are less likely than PLC payments to be issued when the farm price falls below the reference price. An advantage of ARC is that it uses current yields rather than historical yields, which can result in a larger payment. Because of ARC and PLC program design, plus payment and income limits, farmers do not receive a penny-for-penny reimbursement under either program when the farm price drops.

Price gap to generate Price Loss Coverage payments for most 2018 crops

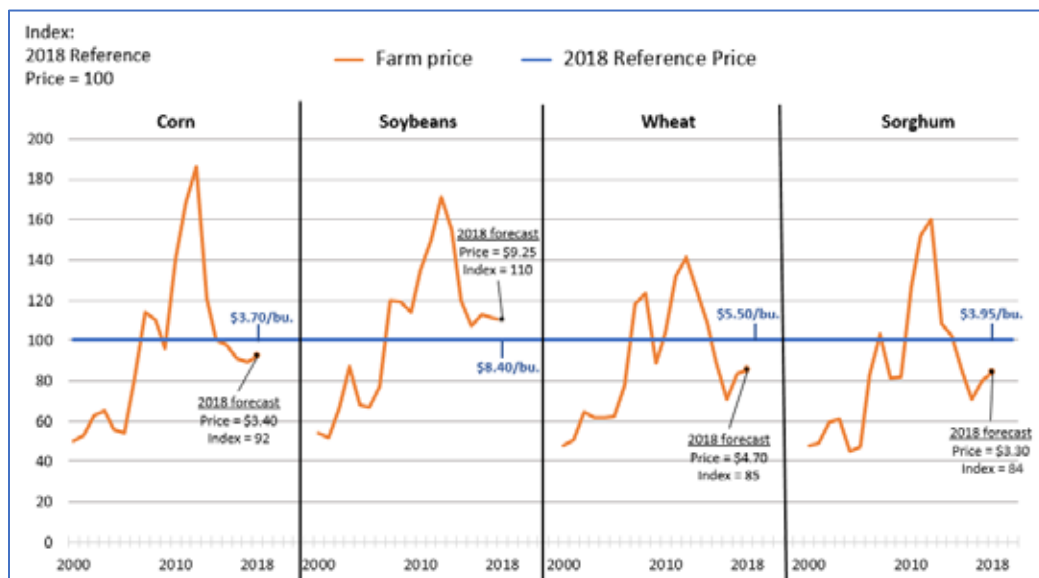
The gap between the season-average farm price and reference price approximates the price protection afforded to a program crop. In the case of the 2018 corn crop, the reference price is \$3.70 per bushel and USDA's price forecast is \$3.40 (see far left panel of figure 1). If the forecast is realized, the simple PLC payment rate would be 30 cents per bushel (\$3.70 minus \$3.40) before accounting for other factors that reduce the total payment (e.g., 85 percent payment factor on base acreage). If the actual farm price turns out to be at least as high as the reference price, the gap is zero, so the simple rate would be zero. For ARC in 2018, the price portion of the revenue trigger is \$3.18 per bushel (table 1). (Note that the ARC revenue trigger also depends on county yields.)

In contrast to a relatively small prospective price gap for 2018 corn, larger PLC per-bushel rates are projected for wheat (80 cents) and sorghum (65 cents) because farm prices are significantly lower than their respective reference prices. Soybeans are not projected to receive a PLC payment because the farm price is above the reference price.

For 2019 crops and beyond, simple PLC payment rates for crops would be similar to those generated for the 2018 crop if prices move sideways and the farm bill is reauthorized in 2018 with little change to farm programs. If a crop's annual price remains below its reference price, the price portion of the ARC guarantee stabilizes at 86 percent of the reference price (in the rolling average calculation, the reference price replaces any annual price that is lower than the reference price). If farm prices are above the reference price level, the price portion of the ARC revenue guarantee will be higher because these higher prices are incorporated into the guarantee.

Figure 1 also illustrates how reference prices protect farmers from extremely poor market conditions. Prices during the early 2000s were significantly lower than today, as shown by the orange historical price lines running well below the blue reference price lines. At these very low levels, large PLC payments to farmers would be generated, subject to payment limits and other factors.

Figure 1. Farm prices and the 2018 reference prices for corn, soybeans, wheat and sorghum



Sources: Farm prices (actual and forecast) from USDA; for cotton, Univ. of Georgia and author. Reference prices from 2014 farm bill; for seed cotton, Bipartisan Budget Act of 2018.

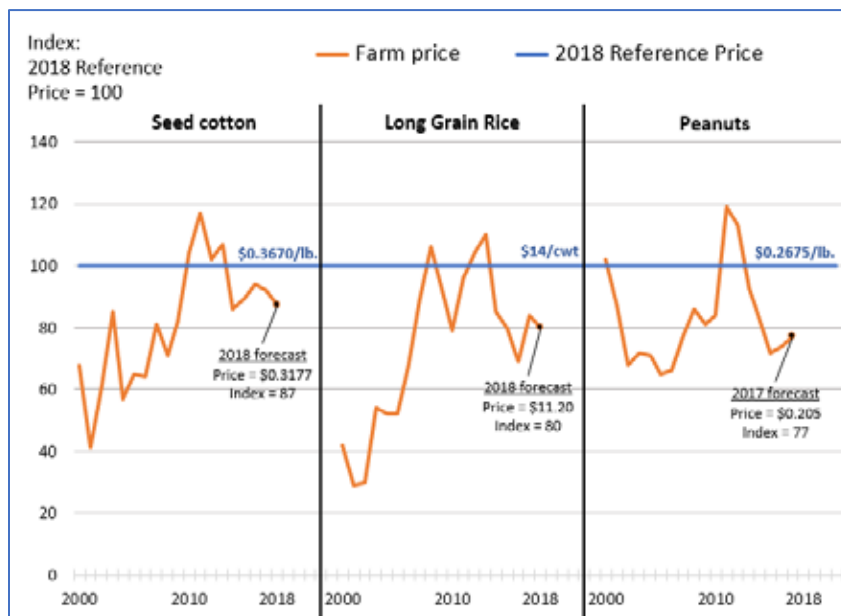
Note: Orange line = the actual or forecast farm price divided by the 2018 reference price times 100.

Reference prices to trigger support for cotton, rice, and peanuts

Farm prices are likely low enough to generate program payments for 2018 crops of seed cotton (unginned upland cotton, both lint and seed), long grain rice, and peanuts. As shown in figure 2, the gap between the reference price and expected farm price is 13 percent for seed cotton (calculated by subtracting the price index of 87 from 100). The gap for long grain rice is 20 percent, and for peanuts, it's 23 percent (estimate is for 2017 peanut crop; 2018 estimate is not available).

If current reference prices had been in place since the 2000 crop, PLC payments would have been triggered approximately 78 percent of the time for seed cotton and 83 percent of the time for both long grain rice and peanuts. To the extent that farmers plant a crop in proportion to its base (historical planting), PLC payments in the coming years will make up at least a portion of any price shortfall for each crop.

Figure 2. Farm prices and the 2018 reference prices for seed cotton, rice, and peanuts



Sources: Farm prices (actual and forecast) from USDA; for cotton, Univ. of Georgia and author. Reference prices from 2014 farm bill; for seed cotton, Bipartisan Budget Act of 2018.

Notes: Orange line = the actual or forecast farm price divided by the 2018 reference price times 100.

Conclusion

Farm bill deliberations in 2018 may leave farm programs largely intact for crop years 2019 and beyond. If so, producers will benefit because current reference prices, including a new one for seed cotton, will continue to provide them with some support.

Reference prices are important because, across the seven crops considered in this report, annual farm prices since the 2000 crop year have been lower than the reference prices for these crops two-thirds of the time.