Understanding the 2018 Farm Bill Effective Reference Price

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The 2018 Farm Bill created a new Effective Reference Price (ERP) to act as an escalator to the statutory reference price (RP) when marketing year average (MYA) prices increase. This publication provides a more detailed discussion about the new ERP that can affect Price Loss Coverage (PLC) and Agriculture Risk Coverage-County (ARC-CO) payments. The ERP is used to calculate PLC and ARC-CO payments, which better respond to changing market conditions. The ERP calculation is effective beginning with the 2019 crop year.

Effective Reference Price Calculations

The ERP for a Title I covered commodity during a crop year is equal to the higher of:

- 85% of the 5-year Olympic Average (OA) of the marketing year average prices (MYA) or
- the reference price.

When 85% of the 5-Yr OA MYA price exceeds the RP, then the ERP equals 85% of the 5-Yr OA-MYA price, up to an upper limit of 115% of the RP. The calculations for the ERP are as follows:

> Effective Reference Price = the higher of the Statutory Reference Price or 85% of 5-Yr OA MYA Price[1],
> not to exceed 115% of the Statutory Reference Price
>
> [1]*5-Yr OA MYA Price (5 Year Olympic Average of the Marketing Year Average Price) is the MYA price of the covered commodity for the previous 5 crop years, dropping the highest and lowest prices and averaging the remaining three prices.*

For the PLC program, a PLC payment will be made when the MYA price for a covered commodity is less than the ERP for that crop.

For the ARC-CO program, if the MYA price for any given year is lower than the ERP, then the ERP will be used to replace the MYA price for that year in calculating the ARC-CO benchmark revenue. ARC-CO payments for the county are then calculated using this benchmark revenue and the actual revenue.

Potential Impact of Effective Reference Price

Table 1 below shows the ERP calculations for major row crops and covered commodities planted in Georgia. The RP for these covered commodities remains the same as in the 2014 Farm Bill. One new addition is seed cotton[1] which was added through the Bipartisan Budget Act of 2018. The ERP escalator allows the RP to increase during the period of higher prices. However, OA calculations require dropping the high and low prices in the past 5 years. So, for the ERP to reach a higher level than the RP, it requires more than just a single year of increased commodity prices. Using peanut as an example, the RP for peanut is $535 per ton (Column A). The maximum amount the ERP for peanut can reach is $615.25 per ton (Column B), which is 115% of the RP for peanut. For the ERP to increase above the RP, the 5-yr OA MYA price for peanut would have to be more than $629.41 per ton (Column C). To reach the maximum ERP, the 5-year OA MYA price for peanut would have to be $723.82 per ton (Column D).

Table 1 Reference Prices for Major Covered Commodities.

Commodity	Statutory Reference Price	Maximum Effective Reference Price Column A × 115%	Equivalent 5-Yr OA MYA Price		Unit
			Trigger Column A / 85%	Maximum Column B / 85%	
	A	B	C	D	
Corn	$3.70	$4.26	$4.35	$5.01	Bushel
Grain Sorghum	$3.95	$4.54	$4.65	$5.34	Bushel
Peanuts	$535	$615.25	$629.41	$723.82	Ton
Seed Cotton	$0.367	$0.422	$0.432	$0.497	Pound
Soybeans	$8.40	$9.66	$9.88	$11.36	Bushel
Wheat	$5.50	$6.33	$6.47	$7.44	Bushel

To understand the impact of this new ERP on row crop producers, it is therefore of interest to look back at previous years and look forward into the future to see when the ERP is likely to be higher than the RP. Figures 1-3[2] illustrates the relationship between the MYA price, escalator, and the RP, and the maximum of the ERP for corn, soybeans, and wheat during the years 2009-2019. For corn, the ERP would have been higher than the RP during the five-year period of 2011-2015, while soybeans would have been higher during the seven-year period of 2010-2016. The ERP for both commodities would have been bound by the maximum ERP in three of those

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[1] Seed cotton is unginned upland cotton—a combination of both cotton (lint) and cottonseed. For more information related to the calculation of the MYA for seed cotton, please refer to Shurley (2018).
[2] This publication was written during the 2018 marketing year, and thus final MYA prices for 2018 are not known. We use estimates of MYA prices for 2018 as of June 11, 2019 from USDA FSA. 2004 -2017 MYA prices come from NASS QuickStat.

years: 2012-2014 for corn and 2013-2015 for soybeans. Meanwhile, the ERP for wheat would have been higher than the RP during the four-year period of 2012-2015, without reaching the 115% maximum ERP. The same analyses were conducted for peanuts and seed cotton. The results indicate that the ERP remains at the RP for peanuts and seed cotton during the previous 11 years. Thus, there is an opportunity for the ERP to increase with higher MYA prices. However, it must be a sustained increase in price above the RP for at least two years, as a single-year increase in prices will be factored away by the OA calculation.
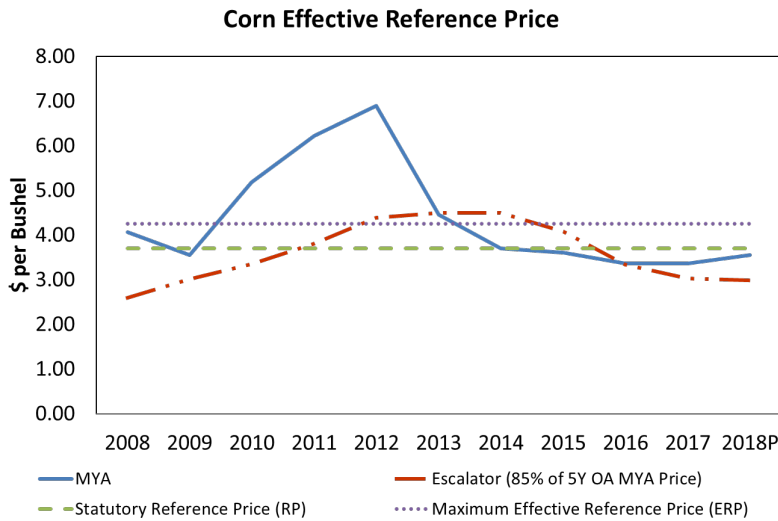
Corn Effective Reference Price

Figure 1 Application of the 2018 Farm Bill Effective Reference Price to Olympic Average Corn Prices from 2009-2019.
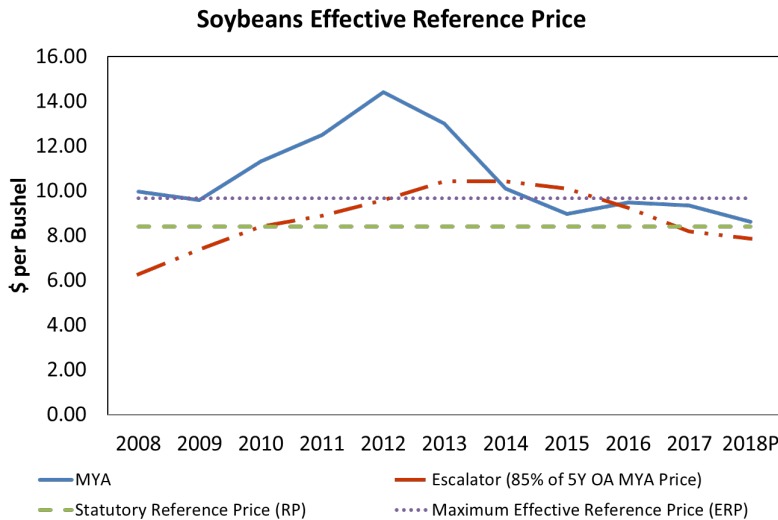
Soybeans Effective Reference Price

Figure 2 Application of the 2018 Farm Bill Effective Reference Price to Olympic Average Soybean Prices from 2009-2019.
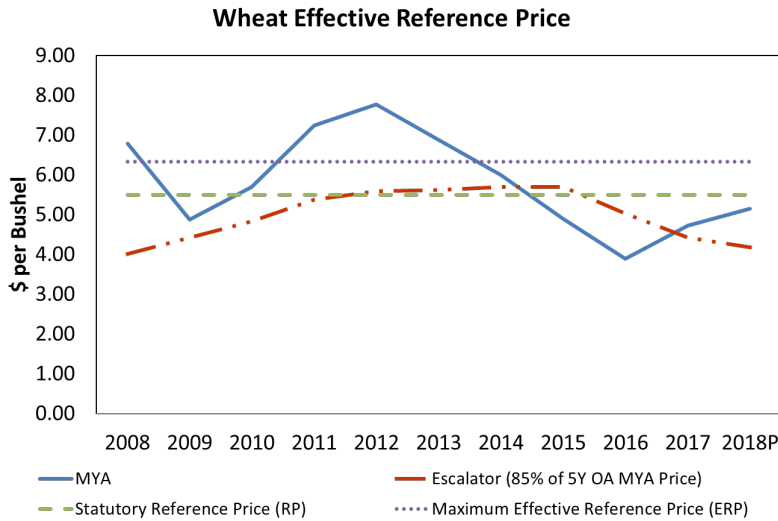
Wheat Effective Reference Price

Figure 3 Application of the 2018 Farm Bill Effective Reference Price to Olympic Average Wheat Prices from 2009-2019.

To further illustrate the impact of the ERP, the escalator for the 2019 marketing year is calculated using MYA prices from 2014 to 2018[3]. Figure 4 represents the reference price escalator (85% of 5-yr OA MYA from 2014 to 2018) as a ratio of the RP. A ratio above 100% implies that the ERP for that commodity is currently expected to be higher than the RP for the 2019 marketing year. A ratio less than 100% implies the ERP for that commodity is currently expected to stay at the RP. As shown in Figure 4, the ERP for the covered commodities listed in Figure 4 will remain at the RP for the 2019 marketing year. In other words, the RP will remain the effective prevailing price for all covered commodities.
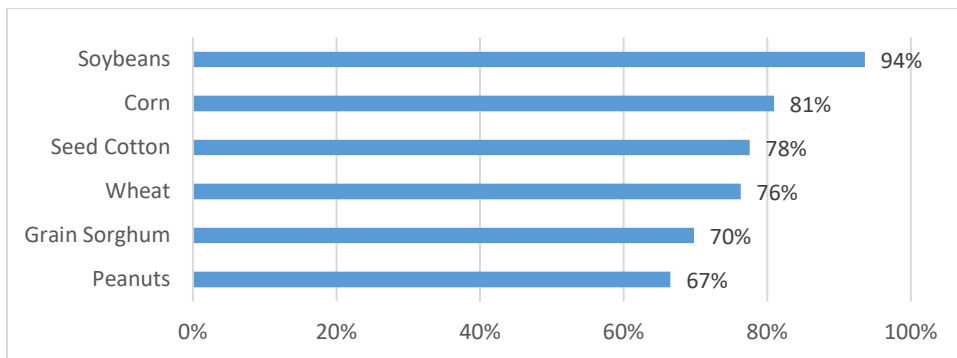

Figure 4 Ratio of the 5-year Olympic Average Marketing Year Average Price (2014 to 2018) to the Statutory Reference Price. Adapted from "2018 Farm Bill Reference Price Escalator for 2019 Market Year" by Zulauf et al. 2019, Farmdoc Daily, February 21, 2019.

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[3] This publication was written during the 2018 marketing year, and thus final MYA prices for 2018 are not known. We use estimates of MYA prices for 2018 as of June 11, 2019. 2014 -2017 MYA prices come from NASS QuickStat.

Beyond 2019, we can look at the likelihood of the ERP exceeding the RP for covered commodities by determining what amount MYA prices would need to reach. In Table 2, we present an analysis of MYA prices and what they need to be to raise the ERP above the RP for the 2020 and 2021 marketing years.

For 2020, it is not possible for the ERP to be higher than the RP for any of the commodities listed in Table 2. This is because any price in the 2019 marketing year higher than the previous four years would be dropped in the OA calculations. Thus, it is not until 2021 that it is even theoretically possible for the ERP to be higher than the RP. For 2021, it is a near-zero probability for peanuts to have an ERP higher than the RP of peanuts. For this to occur the 2019 and 2020 MYA prices would need to both be at least $1,002/ton. The highest MYA price for peanuts in U.S. history was $694/ton in 1990. A wheat price of $9.544/bu is needed for both the 2019 and 2020 MYA for the wheat ERP to be greater than the RP. This is also highly unlikely to occur as wheat prices topped out at $7.77 in 2012 and there is a significant amount of wheat currently available on the world market. For seed cotton, the price during the 2019 and 2020 marketing years would need to increase to $0.612/lb for each year, which is 43% higher than the highest price during the past 10 years.

The two commodities where there might be a possibility for the ERP to be greater than the RP are soybeans and corn. For soybeans, the MYA prices for 2019 and 2020 need to be $10.848/bu and for corn $6.151/bu. However, prices forecasted by the Food and Agricultural Policy Research Institute (FAPRI) indicate these prices for corn and soybeans are unlikely to occur during 2019 and 2020.

Summary

The 2018 Farm Bill established the Effective Reference Price (ERP) to allow for Price Loss Coverage (PLC) and Agriculture Risk Coverage-County (ARC-CO) payments to better reflect market conditions. We examined the five largest row crop commodities produced in Georgia and have illustrated that the ERP will likely not take effect during the 2019-2021 crop marketing years. Thus, producers of these agricultural commodities should expect to use the statutory reference price (RP) in computing expected payments for the first three years of the current farm bill. Whether the ERP applies for the 2022 or 2023 crop years primarily depends upon the outcomes of the marketing year average (MYA) prices for the 2019 and 2020 crop years, respectively. As each subsequent year of price data becomes known it will be possible to assess the likelihood that the ERP will apply in future years. Current price forecasts from the Food and Agricultural Policy Research Institute for these commodities indicate that the ERP will likely not exceed the RP during the life of the 2018 Farm Bill. Thus, expectations for an ERP to apply for corn, soybeans, peanuts, seed cotton, and grain sorghum should only be based on significant changes to the current market conditions that produce a significant and sustained increase in the price of that particular crop.

Table 2. Potential to Raise the Effective Reference Price above Current Reference Price

Commodity	Marketing Year	OA Years	Potential for 85% of OA-MYA Price Greater than RP
Peanuts	2020	2015-2019	Not possible. If the 2019 MYA price is higher than $430/ton, it will be dropped through the OA calculation.
	2021	2016-2020	Only possible if both 2019 & 2020 MYA prices are at least $1,002/ton. Only one of those years will be dropped in the OA calculation.
Corn	2020	2015-2019	Not possible. If the 2019 MYA price is higher than $3.61/bu, it will be dropped through the OA calculation.
	2021	2016-2020	Only possible if both 2019 and 2020 MYA prices are at least $6.151/bu. Only one of those years will be dropped in the OA calculation.
Soybeans	2020	2015-2019	Not possible. If the 2019 MYA price is higher than $9.47/bu, it will be dropped through the OA calculation.
	2021	2016-2020	Only possible if both 2019 and 2020 MYA prices are at least $10.849/bu. Only one of those years will be dropped in the OA calculation.
Wheat	2020	2015-2019	Not possible. If the 2019 MYA price is higher than $5.15/bu, it will be dropped through the OA calculation.
	2021	2016-2020	Only possible if both 2019 and 2020 MYA prices are at least $9.544/bu. Only one of those years will be dropped in the OA calculation.
Seed Cotton	2020	2015-2019	Not possible. If the 2019 MYA price is higher than $0.346/lb, it will be dropped in the OA calculation.
	2021	2016-2020	Only possible if both 2019 and 2020 MYA prices are at least $0.612/lb. Only one of those years will be dropped in the OA calculation.

Source: Authors calculations. Assumes 2018 MYA price is equal to 2018 Year to Date estimates.

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