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# 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 detailed discussion about the new ERP. The ERP is used in the calculation of the payments for the Price Loss Coverage (PLC) and Agriculture Risk Coverage-County (ARC-CO) programs, so they can better respond to changing market conditions. The use of ERP for payments calculation is effective beginning with the 2019 crop year, with rates announced on the USDA Farm Service Agency (FSA) website under Program Year Specific Data: https://www.fsa.usda.gov/programs-and-services/arcplc_program/arcplc-program-data/index.

## *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 available marketing year average prices (MYA) or
- the reference price.

When 85% of the available 5-Yr OA MYA price exceeds the RP, then the ERP equals 85% of the available 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 available, dropping the highest and lowest prices and averaging the remaining three prices. For example, the ERP for 2019 is calculated using MYA prices from 2013 to 2017.*

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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 of the available past five 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 peanuts as an example, the RP for peanuts is $535 per ton (Column A). The maximum amount the ERP for peanuts can reach is $615.25 per ton (Column B), which is 115% of the RP for peanuts. For the ERP to increase above the RP, the 5-yr OA MYA price for peanuts would have to be more than $629.41 per ton (Column C). To reach the maximum ERP, the 5-year OA MYA price for peanuts 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 |

[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).

To understand the impact of this new ERP on row crop producers in Georgia, 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 1-5[2] illustrates the relationship between the MYA price, escalator, and the RP, and the maximum of the ERP for corn, soybeans, wheat, peanuts, and seed cotton during the years 2008-2020. **The ERP for the five covered commodities listed will remain at the RP for the 2019 and 2020 marketing year.**

From 2008 to 2018, the ERP for corn (Figure 1) would have been higher than the RP during the five-year period of 2013-2017, while soybeans (Figure 2) would have been higher during the six-year period of 2013-2018. The ERP for both commodities would have been bound by the maximum ERP in three of those years: 2014-2016 for corn and 2015-2017 for soybeans. Meanwhile, the ERP for wheat (Figure 3) would have been higher than the RP during the four-year period of 2014-2017, without reaching the 115% maximum ERP. The same analyses were conducted for peanuts and seed cotton. As shown in Figures 4 and 5, the ERP would have remained at the RP for peanuts and seed cotton from 2008 to 2018.

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.

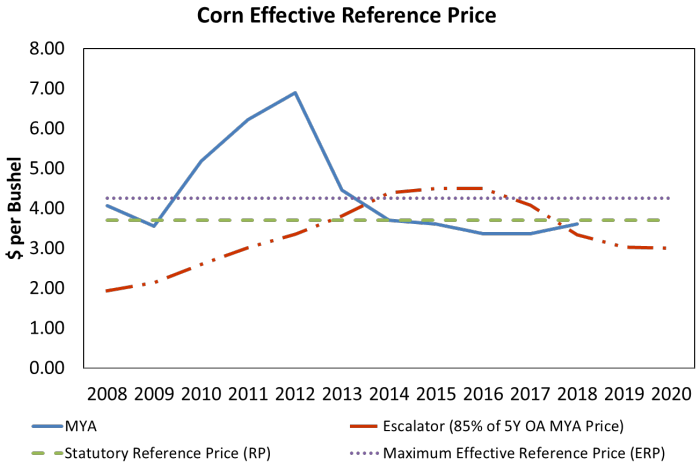


Figure 1 Application of the 2018 Farm Bill Effective Reference Price to Corn from 2008-2020.

[2]The 2018 final MYA price for seed cotton is not available as of October 2, 2019. We use projected/final MYA prices for 2002 -2018 from NASS QuickStat as of October 4, 2019.

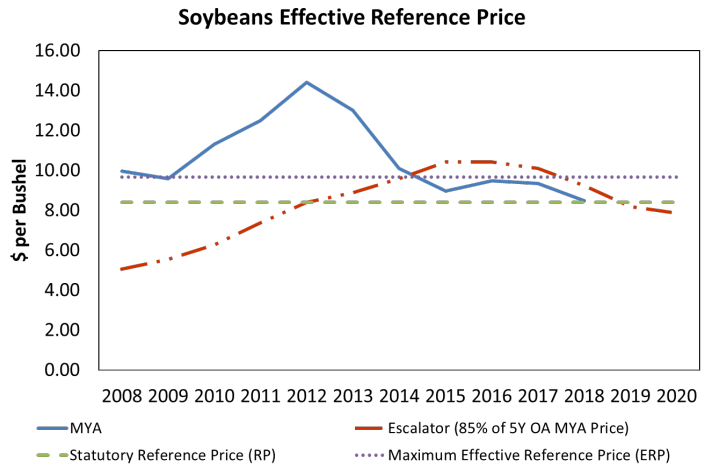


Figure 2 Application of the 2018 Farm Bill Effective Reference Price to Soybean from 2008-2020.

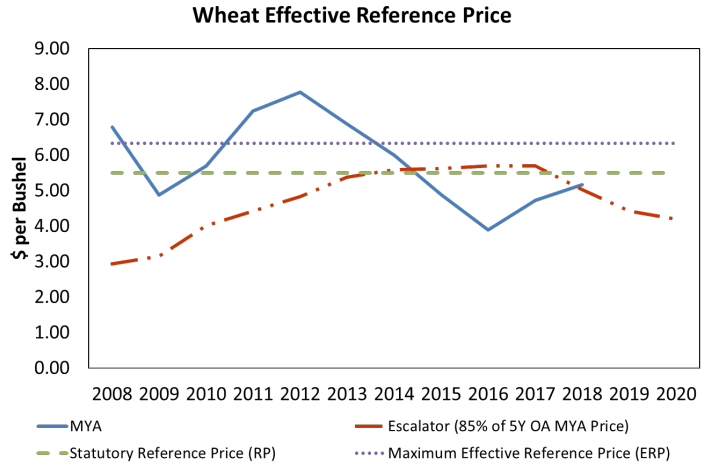


Figure 3 Application of the 2018 Farm Bill Effective Reference Price to Wheat from 2008-2020.

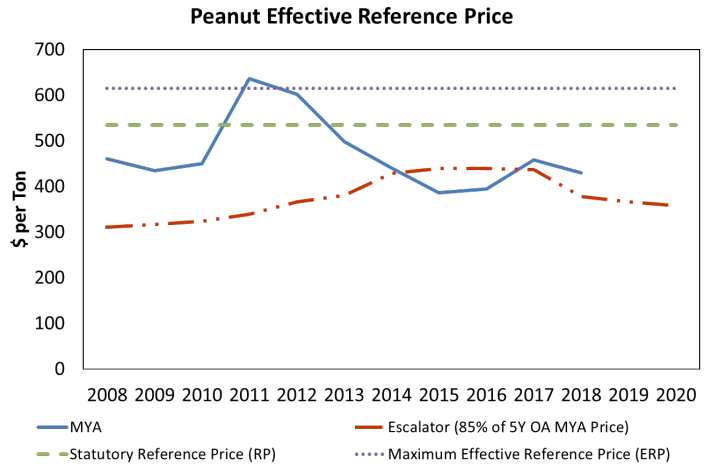


Figure 4 Application of the 2018 Farm Bill Effective Reference Price to Peanut from 2008-2020.

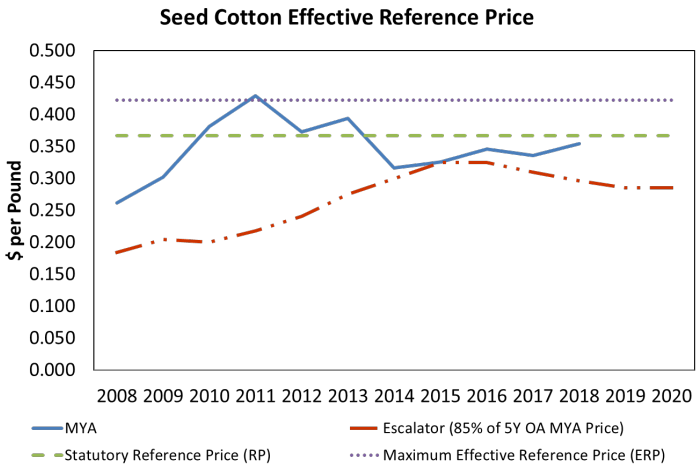


Figure 5 Application of the 2018 Farm Bill Effective Reference Price to Seed Cotton from 2008-2020.

Beyond 2020, we can look at the likelihood of the ERP exceeding the RP for covered commodities by determining what the MYA prices would need to be to achieve that level. 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 2021-2022 marketing years.

For 2021, it is not possible for the ERP to be higher than the RP for any of the commodities listed in Table 2. The calculation of the 2021 ERP requires the MYA prices from 2015 – 2019. Due to the Olympic average calculation, the increase in price for a single year will be dropped. As a result, the MYA prices for 2019 would be dropped if it is higher than the previous four years.

It is not until 2022 that it is even theoretically possible for the ERP to be higher than the RP. For 2022, 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 $9.55/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 $0.598/lb for each year, which is about 40% 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 $10.87/bu and for corn $6.11/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.

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 | 2021 | 2015-2019 | Not possible. If the 2019 MYA price is higher than $458/ton, it will be dropped through the OA calculation. |
| | 2022 | 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 | 2021 | 2015-2019 | Not possible. If the 2019 MYA price is higher than $3.61/bu, it will be dropped through the OA calculation. |
| | 2022 | 2016-2020 | Only possible if both 2019 and 2020 MYA prices are at least $6.11/bu. Only one of those years will be dropped in the OA calculation. |
| Soybeans | 2021 | 2015-2019 | Not possible. If the 2019 MYA price is higher than $9.47/bu, it will be dropped through the OA calculation. |
| | 2022 | 2016-2020 | Only possible if both 2019 and 2020 MYA prices are at least $10.87/bu. Only one of those years will be dropped in the OA calculation. |
| Wheat | 2021 | 2015-2019 | Not possible. If the 2019 MYA price is higher than $5.16/bu, it will be dropped through the OA calculation. |
| | 2022 | 2016-2020 | Only possible if both 2019 and 2020 MYA prices are at least $9.55/bu. Only one of those years will be dropped in the OA calculation. |
| Seed Cotton | 2021 | 2015-2019 | Not possible. If the 2019 MYA price is higher than $0.354/lb, it will be dropped in the OA calculation. |
| | 2022 | 2016-2020 | Only possible if both 2019 and 2020 MYA prices are at least $0.598/lb. Only one of those years will be dropped in the OA calculation. |

Source: Authors calculations.

***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 not take effect during the 2019 and 2020 crop marketing years, and is highly unlikely during 2021 and 2022**. 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 2023 crop year primarily

depends upon the outcomes of the marketing year average (MYA) prices for the 2019-2021 crop years. 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 wheat 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.

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