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U.S. Farm Policy: Revenue Support Program Outlays, 2014-2020

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SUMMARY

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U.S. Farm Policy: Revenue Support Program Outlays, 2014-2020

Provisions of Title I of the 2018 farm bill (Agriculture Improvement Act of 2018; P.L. 115-334) authorize a set of revenue support programs for major program crops for crop years 2019-2023 as part of the so-called farm safety net. This includes three principal revenue support programs—Marketing Assistance Loan (MAL), Agricultural Risk Coverage (ARC), and Price Loss Coverage (PLC). Participation in these revenue support programs is free. However, individuals must sign up their base acres for ARC and PLC and comply with certain requirements to be eligible for payments.

Under the MAL, PLC, and ARC programs, most grain, oilseed, and pulse crop producers in the United States are eligible for two tiers of revenue support. The first tier of support is provided by the MAL program in the form of a price floor and interim financing—a nonrecourse, nine-month loan at statutory loan rates for harvested production of eligible crops (referred to as loan crops). The MAL program may be supplemented by a higher, second tier of revenue support comprised of either (1) the PLC program, which provides price protection at the national level via statutorily fixed "reference" prices for eligible crops, or (2) the ARC program, which provides revenue protection via historical moving average revenue guarantees at the county or whole-farm levels.

The ARC and PLC programs were first authorized under the 2014 farm bill (Agricultural Act of 2014; P.L. 113-79) for the crop years 2014-2018. At the start of the 2014 farm bill, participating producers were offered a one-time opportunity to enroll their historical program acres (referred to as "base" acres), on a crop-by-crop basis, for either ARC or PLC. Under the 2014 enrollment, 76% of base acres—including 93% of corn, 97% of soybeans, and 58% of wheat—signed up for the county-level ARC program. The high ARC sign-up for these crops was due to record or near-record farm prices during the 2010-2013 period. These historically high prices factored into the ARC revenue guarantee formula and assured producers of receiving payments during 2014-2016. However, in recent years, market conditions have turned in favor of PLC. The 2018 farm bill's first sign-up (for the crop years 2019 and 2020) allowed producers to reallocate base acres between ARC and PLC. Under this new enrollment, producers overwhelmingly shifted away from ARC and to PLC for all crops, as 70% of total enrolled base acres elected to participate in the PLC program.

Payments under the MAL, ARC, and PLC programs vary countercyclically with market conditions—that is, payments tend to increase when farm prices fall below support levels and decline when farm prices rise above support levels. Such a price-contingent approach has long been part of U.S. farm policy, using programs with different names but related attributes. Since 2010, farm prices for most program crops have risen substantially above their statutorily fixed MAL loan rates, and the MAL program has diminished in effectiveness as a floor price, particularly for corn and soybean producers. Total MAL program outlays averaged $205 million per year during the five-year period (2014-2018) of the 2014 farm bill. In contrast, combined payments under ARC and PLC averaged $5.2 billion per year during the same five-year period. This included substantial combined payments during the first three years of the 2014 farm bill period—$5.3 billion in 2014, $7.9 billion in 2015, and $7.0 billion in 2016—driven largely by strong ARC payments. By 2017, farm prices for most program crops had fallen below their respective reference prices, and PLC payments had risen in importance relative to ARC. ARC and PLC payments fell to $3.1 billion and $2.6 billion, respectively, in 2017 and 2018. Under the 2018 farm bill sign-up, producers shifted enrollment of their eligible base acres away from ARC and to PLC. This enrollment shift, coupled with projections (U.S. Department of Agriculture [USDA], February 2020) of weak farm prices for most program crops over the 2019-2023 period, suggest that USDA will make substantially larger PLC payments than ARC payments under the 2018 farm bill.

ARC and PLC implementation and operational issues of potential interest to Congress include the delayed payment schedule under both programs—payments do not occur until at least a year after the enrolled crop is harvested. Congress may also want to consider potential inequities among program crops related to statutory reference prices relative to market conditions, as some crops have received larger per-acre program payments with greater frequency than others. Finally, another potential issue is the extent to which the general level of farm prices has moved above MAL loan rates, thus diminishing their functionality as floor prices for eligible crops.

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Introduction

Provisions of Title I of the 2018 farm bill (Agriculture Improvement Act of 2018; P.L. 115-334) authorize a set of revenue support programs for eligible crops for crop years 2019-2023 as part of the so-called farm safety net. This includes three revenue support programs—Marketing Assistance Loan (MAL), Agricultural Risk Coverage (ARC), and Price Loss Coverage (PLC)—that are available for most grain, oilseed, and pulse crops in the United States.[1] Participation in these revenue support programs is free. However, individuals must sign up their base acres for ARC and PLC and comply with certain requirements to be eligible for payments.[2]

Title I authorizes separate revenue support programs for dairy and sugar.[3] Specialty crops—such as fruits, vegetables, and tree nuts—are not covered by revenue support programs.[4]

The revenue support programs are implemented by the Farm Service Agency within the U.S. Department of Agriculture (USDA) and are funded through the Commodity Credit Corporation.[5] Producers must meet eligibility requirements to participate in the Title I commodity programs.[6] In addition, producers that receive benefits under most of these programs are subject to annual payment limits.

Although the ARC and PLC programs have been in existence since 2014, the delayed nature of payments under these two programs has made it difficult for policymakers to assess their effectiveness. This report examines available USDA program data to compare participation rates and annual outlays for the three revenue support programs—MAL, ARC, and PLC—for 2014-2018 based on historical data, along with projected outlays for 2019-2023 based on projections by the Food and Agricultural Policy Research Institute (FAPRI) of the University of Missouri. The report ends with a discussion of issues related to MAL, ARC, and PLC that may be of potential interest to Congress.

Two Tiers of Revenue Support

Under the MAL, ARC, and PLC programs, most grain, oilseed, and pulse crop producers in the United States are eligible for two tiers of revenue support (see text box below).[7]

[1] In addition to revenue support programs, Title I authorizes the noninsured disaster assistance program for commodities not eligible for crop insurance and modifies the permanent disaster assistance programs that are focused on livestock and tree crops. See CRS In Focus IF11163, *2018 Farm Bill Primer: The Farm Safety Net*.

[2] See CRS Report R46248, *U.S. Farm Programs: Eligibility and Payment Limits*.

[3] The dairy and sugar programs are essential parts of the 2018 farm bill. However, because their programs differ markedly from the MAL, ARC, and PLC programs, they are not discussed in this report. For more information on the dairy and sugar programs, see CRS In Focus IF11188, *2018 Farm Bill Primer: Dairy Programs*; and CRS In Focus IF10689, *Farm Bill Primer: Sugar Program*.

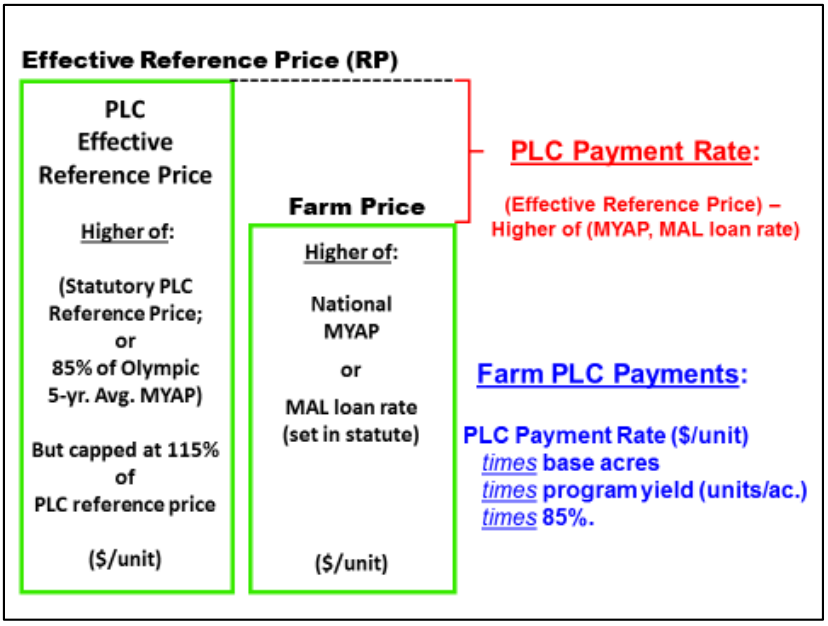
[4] However, many specialty crops qualify for certain disaster assistance programs and federal crop insurance. For information on farm programs that support specialty crop agriculture, see CRS In Focus IF11317, *2018 Farm Bill Primer: Specialty Crops and Organic Agriculture*.

[5] See CRS Report R44606, *The Commodity Credit Corporation: In Brief*.

[6] CRS Report R45659, *U.S. Farm Program Eligibility and Payment Limits Under the 2018 Farm Bill (P.L. 115-334)*.

[7] For a list of eligible commodities under MAL, ARC, and PLC, see **Table 2** at the end of this report or CRS In Focus IF11164, *2018 Farm Bill Primer: Title I Commodity Programs*.

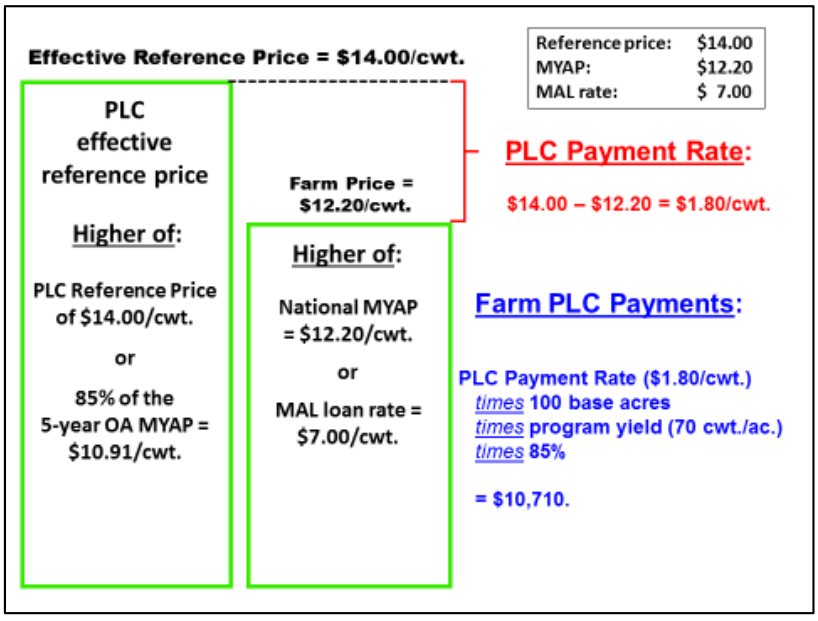
Figure 1. Price Loss Coverage (PLC) Payment Formula



Source: Compiled by CRS based on the 2018 farm bill (P.L. 115-334).

Notes: MAL = Marketing Assistance Loan program; MYAP = the national market-year average farm price. The Olympic average (OA) is calculated by removing the high and low years then averaging across the remaining years. Program yields are historical farm-level yields used to determine per-acre payment rates.

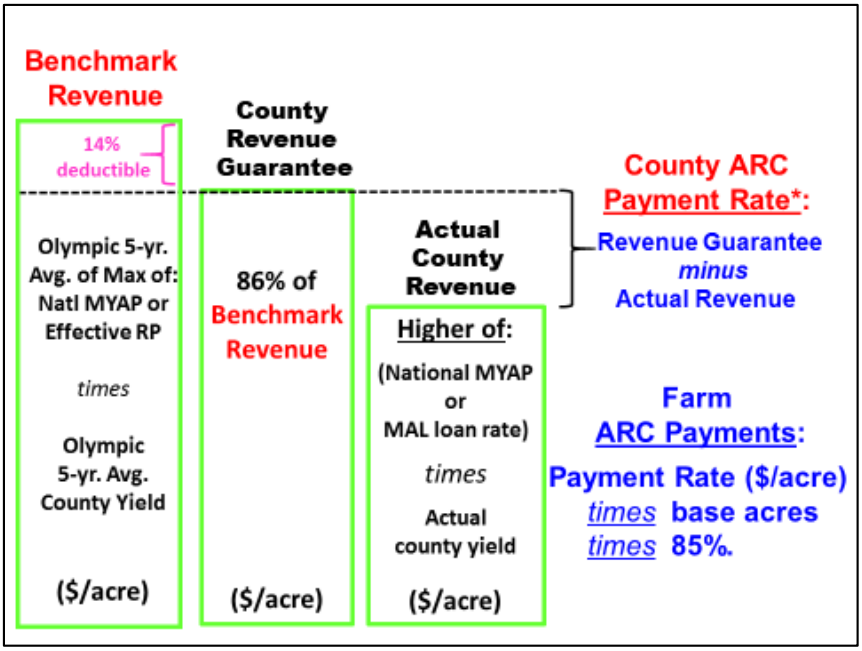
Figure 2. PLC Low-Price Scenario for Rice



Source: Compiled by CRS.

Notes: cwt. = hundredweight or 100 lbs. This example assumes a farm with 100 base acres enrolled in the rice PLC program, a program yield for rice of 70 cwt./acre, and a national OA for MYAP for 2013-2018 of $12.20 per cwt. In a declining market, the per-unit payment rate increases until the farm price drops below the loan rate ($7.00/cwt. for rice), at which point the PLC payment rate is fixed at $14.00 - $7.00 = $7.00/cwt. If market prices decline further, benefits under the MAL program may become available.

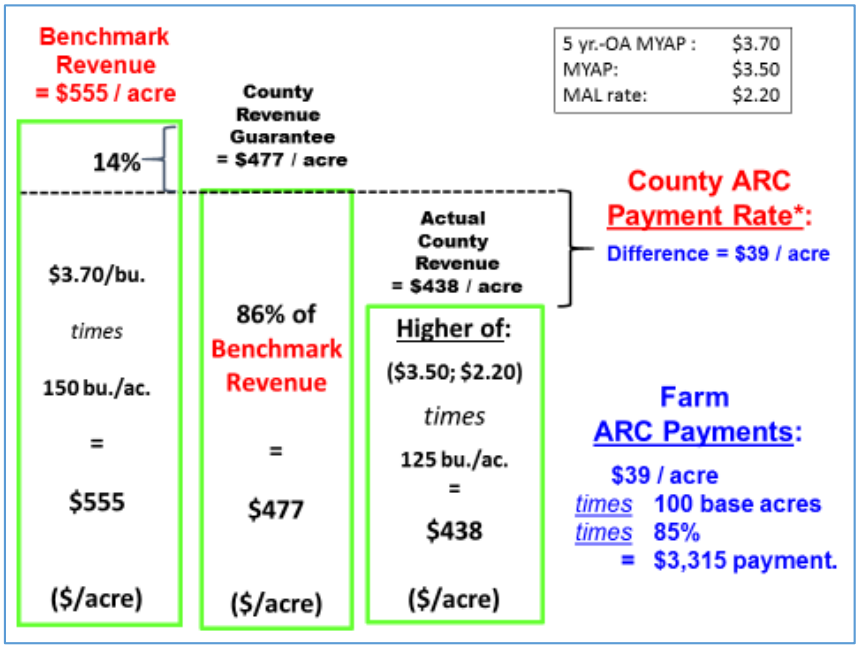
Figure 3. County-Level Agricultural Risk Coverage (ARC) Payment Formula



Source: Compiled by CRS based on the 2018 farm bill (P.L. 115-334).

Notes: See notes for **Figure 1**. All references to ARC refer to the county-level, not the individual-level, ARC program. The ARC per-acre payment rate is capped at 10% of the ARC county benchmark revenue per acre.

Figure 4. ARC Low-Revenue Scenario for Corn



Source: CRS.

Notes: bu. = bushel. Assumes the five-year average price (excluding high and low years) is $3.70 per bushel and five-year average yield (excluding high and low years) is 150 bushels per acre. In this example, the maximum potential ARC payment rate is $55.50 per acre (10% of the benchmark revenue of $555 per acre).

The first tier of support is provided by the MAL program in the form of a price floor and interim financing—a nonrecourse, nine-month loan at statutory loan rates for harvested production of eligible crops (referred to as loan crops). USDA's nonrecourse loan program was originally established in the 1930s as a government loan that did not need to be repaid if market prices remained below statutory support levels and the crop was surrendered to the government. The nonrecourse loan program was modified by the addition of special repayment benefits to become the MAL program under the 1985 farm bill (P.L. 99-198). The MAL program provides a price floor to producers of certain statutorily designated crops and sets a lower bound for per-unit payment rates under both ARC and PLC (see **Figure 1** and **Figure 3**). It has been modified and extended by successive farm bills, including the 2018 farm bill.[8]

The MAL program may be supplemented by a higher, second tier of revenue support comprised of either (1) the PLC program, which provides price protection at the national level via statutorily fixed "reference" prices for eligible crops, or (2) the ARC program, which provides revenue protection via historical moving average revenue guarantees at the county or whole-farm level.

Two Tiers of Market-Based Revenue Support

Tier I: Market Assistance Loan (MAL) Program

First tier revenue protection—in the form of a price floor—is available under the MAL program, which offers producers a commodity-specific, statutorily fixed loan rate that is available for all harvested production of eligible commodities (referred to as loan crops). See **Table 2** for a list of MAL loan rates by loan crop. A participating producer may put a harvested loan crop under a nine-month nonrecourse loan valued at the statutory commodity loan rate. Thus, the value of the loan is equal to the harvested crop (measured in bushels or pounds) times the loan rate (statutorily set at a price per unit).

For a nonrecourse loan, USDA agrees to accept the crop as full payment for the loan if a producer forfeits. The loan uses the crop as collateral (thus coupling MAL benefits to current production), and the loan rate, in effect, establishes a price guarantee. If local market prices increase above the loan rate (plus interest), a producer may repay the MAL and reclaim the crop. If market prices are below the loan rate, then other program benefits are available to producers, including repayment of the loan at a USDA-announced lower repayment rate, forfeiting the crop and retaining the value of the loan, or taking a loan deficiency payment in lieu of a MAL.[9]

Tier II: Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) Programs

A second, higher tier of support is available under the ARC and PLC programs. Producers choose between PLC and ARC depending on their preference for protection against a decline in crop prices (PLC) or crop revenue (ARC).

PLC provides price protection based on reference prices set in statute at levels above the MAL loan rates (**Figure 1**). The 2018 farm bill added an escalator provision that could raise a covered commodity's effective reference price to as much as 115% of the statutory PLC reference price based on market conditions.[10]

ARC provides revenue protection based on the product of five-year Olympic (excludes the high and low years) moving averages of both (1) historical county yields and (2) the higher of the national market-year average farm price or the PLC effective reference price (**Figure 3**).

Each farm's historical program acres (referred to as "base" acres) and historical yields are associated with specific program crops that are enrolled in either ARC or PLC on a crop-by-crop basis. Producers may choose to participate in a mixture of both ARC and PLC for the base acres of different program commodities.

[8] See CRS In Focus IF11162, *2018 Farm Bill Primer: Marketing Assistance Loan Program*.

[9] For a description of producer choices under the MAL program, see CRS Report R45730, *Farm Commodity Provisions in the 2018 Farm Bill (P.L. 115-334)*.

[10] The effective reference price is determined by formula as the higher of the statutory reference price (RP) or 85% of the five-year Olympic average of the market-year average farm price for the five preceding years, capped at 115% of the RP.

Alternatively, instead of choosing commodity-specific ARC and PLC, a farmer could choose to combine all of the farm's base acres for covered commodities into a single, whole-farm revenue guarantee under the farm-level "individual" ARC (ARC-IC) program.[11]

MAL Is Coupled; ARC and PLC Are Decoupled

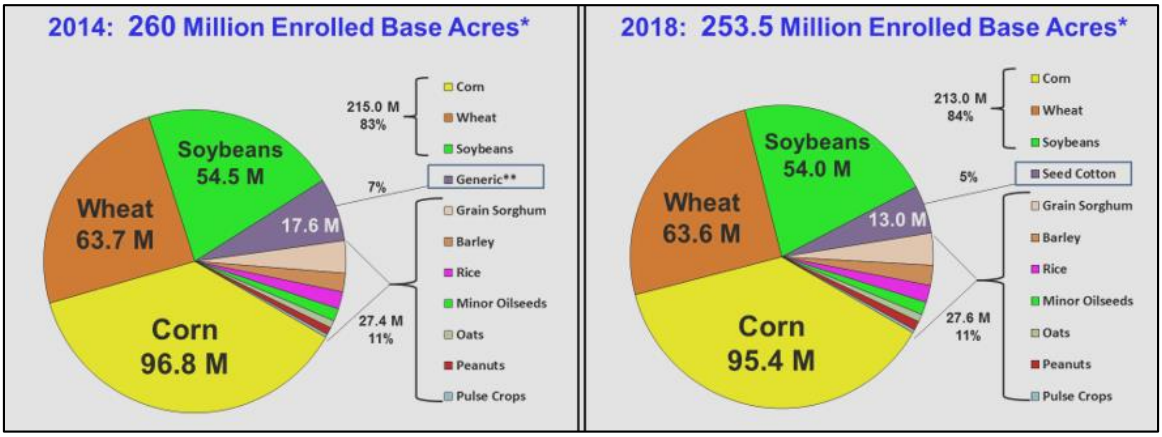
MAL benefits are linked to current production—a producer must harvest an eligible crop to participate in the MAL program. In contrast, ARC and PLC payments are made on a portion of enrolled base acres (85% under ARC and PLC; 65% under ARC-IC) and are therefore decoupled from producer production choices. In other words, a producer does not need to plant the crop to receive a payment. However, a producer must own or rent base acres and must enroll those base acres for either PLC or ARC during USDA-announced sign-up periods.

ARC and PLC Enrollment Under the 2014 and 2018 Farm Bills

The ARC and PLC programs were first authorized under the 2014 farm bill (Agricultural Act of 2014; P.L. 113-79) for the crop years 2014-2018. At the start of the 2014 farm bill, participating producers were offered a one-time opportunity to enroll their historical program (or "base") acres, on a crop-by-crop basis, for either ARC or PLC. The enrollment choice was to remain unchanged for the duration of the 2014 farm bill—that is, through the 2018 crop year. Under the 2014 sign-up, producers enrolled 260 million base acres for 20 covered commodities (see **Figure 5**). The three largest crops in terms of base acres—corn, soybeans, and wheat—accounted for 83% of enrolled base acres.

Figure 5. Base Acres Enrolled Under 2014 and 2018 Farm Bills

Base acres signed up for ARC or PLC by covered commodity



Source: Compiled by CRS from U.S. Department of Agriculture (USDA), Farm Service Agency (FSA) data.

Notes: Program crops eligible for ARC and PLC are referred to as "covered commodities." Under the 2014 farm bill, a producer with base acres made a one-time choice for either ARC or PLC for each relevant covered commodity for the entire 2014-2018 period. Under the 2018 farm bill, the initial base acre sign-up was for the 2019 and 2020 crop years, with an annual sign-up each year thereafter—2021, 2022, and 2023. *Base acres are historical average acres on a farm that have been planted to program crops, defined under the 2002 farm bill (P.L. 107-171; §1101). Each base acre is associated with a particular program crop. Not all base acres are enrolled in ARC and PLC programs. Under the 2018 farm bill, producers had the option to reallocate their base acres among program crops. For details, see CRS Report R45730, *Farm Commodity Provisions in the 2018 Farm Bill (P.L. 115-334)*. **Generic base is former upland cotton base. Upland cotton was removed from eligibility as a covered commodity by the 2014 farm bill (P.L. 113-79). However, it indirectly regained its status as a covered commodity, via seed cotton, under the Bipartisan Budget Act of 2018 (P.L. 115-113). For details, see CRS Report R45143, *Seed Cotton as a Farm Program Crop: In Brief*.

[11] See CRS In Focus IF11161, *2018 Farm Bill Primer: ARC and PLC Support Programs*.

The 2018 farm bill extended both programs with several modifications intended to increase flexibility in how producers use the programs.[12] Producers could choose to reallocate their existing base acres between ARC and PLC on a commodity-by-commodity basis, effective for the 2019 and 2020 crop years.[13] If no initial choice was made, then the default was whichever program was in effect under the 2014 farm bill. Beginning in 2021, producers can again choose between ARC and PLC annually for each of the 2021, 2022, and 2023 crop years.

Under the 2019 sign-up and reallocation, producers enrolled 253.5 million base acres in ARC and PLC—a decline of 6.5 million acres from the 2014 enrollment. A large portion of the difference in base acres was the result of the reassignment of generic base acres. Generic base acres were created in 2014 when upland cotton was removed from eligibility for ARC and PLC payments. In 2018, when the Bipartisan Budget Agreement (P.L. 115-123) added seed cotton as a covered commodity, generic base acres needed to be either assigned to a covered commodity or eliminated.[14] Of the 17.6 million acres of former generic base, 13 million were reallocated to seed cotton with the balance either enrolling under other covered commodities or dropping out of participation—likely accounting for a substantial portion of the decline in total enrolled base acres. The share of total base acres for the top three crops—corn, soybeans, and wheat—increased from 83% to 84%.

Participation Shifts from ARC to PLC Under 2018 Farm Bill

Under the 2014 farm bill, most base acres (76.4%) were enrolled in the county-level ARC program, compared with 22.8% base acres enrolled in PLC (**Figure 6**).

The preference for ARC under the 2014 sign-up was driven by the three largest crops—corn, soybeans, and wheat—which enrolled major portions of their base acres under the county-level ARC program, including 93.4% of corn base acres, 96.9% of soybeans, and 57.5% of wheat. The high ARC participation implies a low PLC participation for these three crops, as shown in **Figure 7**.

The high enrollment share for ARC under the 2014 sign-up for corn, soybeans, and wheat was due to their high farm prices during the 2010-2013 period (**Figure 8**). The prices for these years factored into the ARC revenue guarantee formula (which looked back over the five years from 2009 to 2013) and assured producers of receiving payments for at least the first three years of the program (i.e., for 2014-2016).

The 2018 farm bill's first sign-up (for the crop years 2019 and 2020) allowed producers to reallocate base acres between ARC and PLC. Enrollment results revealed that producers overwhelmingly shifted away from ARC and to PLC for all crops (**Figure 6**). Total ARC participation fell from 76.4% under the 2014 sign-up to 26.3% under the 2019-2020 sign-up, while PLC participation rose from 22.8% to 69.9%.

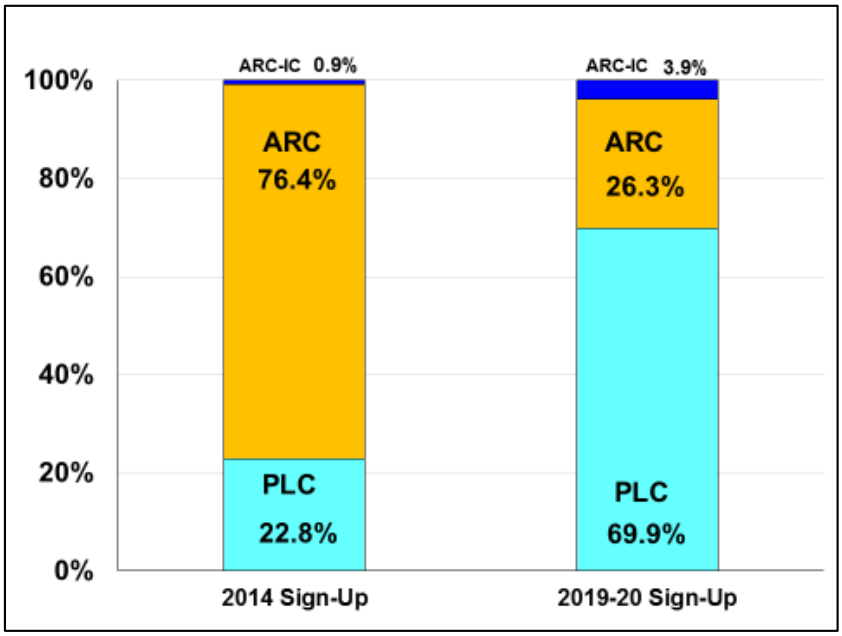
[12] See CRS Report R45730, *Farm Commodity Provisions in the 2018 Farm Bill (P.L. 115-334)*.

[13] Producers had until March 16, 2020, to complete their sign-up for the 2019 and 2020 crop years. ARC and PLC payments for the 2019 crop year are made after October 1 following the end of each crop's marketing year. See **Table 1** and **Figure 14** later in this report for a discussion of the ARC and PLC payment schedule.

[14] For details on the addition of seed cotton as a covered commodity and the reassignment of generic base acres, see CRS Report R45143, *Seed Cotton as a Farm Program Crop: In Brief*.

Figure 6. Enrollment of Base Acres by Program: PLC, ARC, and ARC-IC

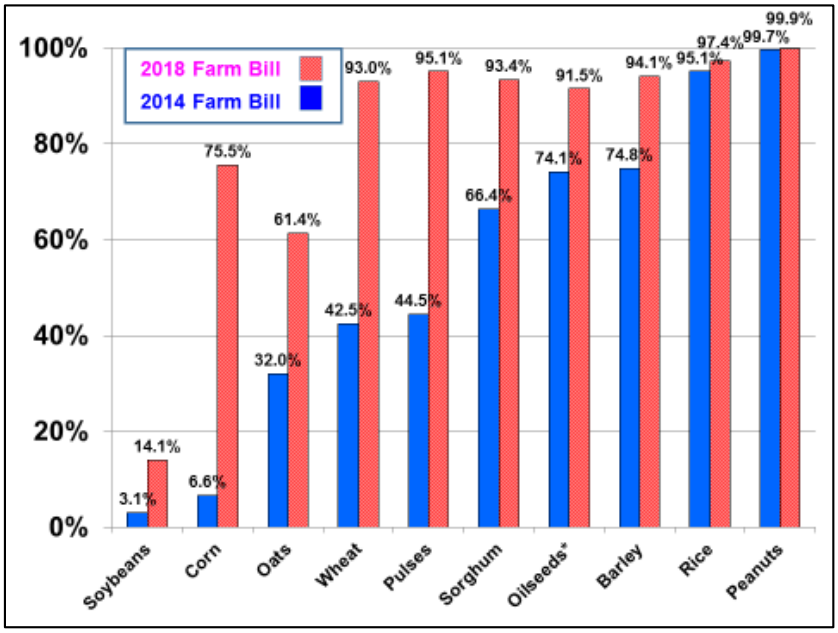
Share of enrolled base by program for each sign-up period



Source: FSA data on enrollment in ARC and PLC by program crop base acres for the 2014 and 2018 farm bills. The 2018 farm bill enrollment shown in this chart is for the crop years 2019 and 2020.

Figure 7. PLC Participation Rate: 2014 Versus 2018 Farm Bills

Share of base acres enrolled in PLC for selected covered commodities



Source: FSA data on enrollment in ARC and PLC by program crop base acres for the 2014 and 2018 farm bills. The 2018 farm bill enrollment shown in this chart is for the crop years 2019 and 2020.

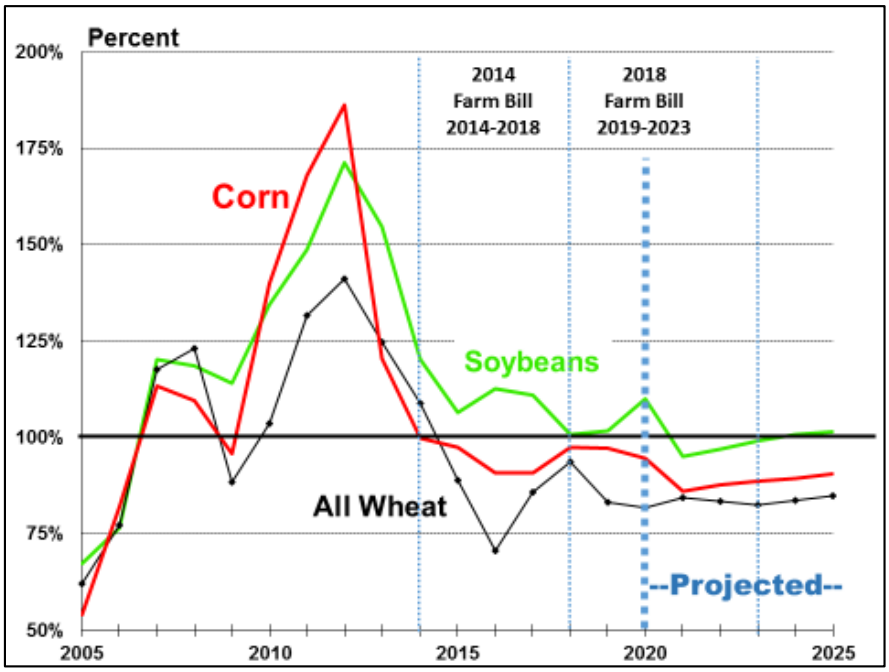
Notes: *Minor oilseeds include sunflower, flaxseed, canola, rapeseed, mustard, safflower, crambe, and sesame. The ARC participation rate may be derived by subtracting the PLC participation rate from 100%. For example, the soybean PLC participation rate under the 2014 farm bill is 3.1%, and its ARC participation rate is 96.9%.

The largest shift occurred for corn base acres, which rose from 6.6% participation in PLC under the 2014 farm bill to 75.5% enrollment in PLC under the 2019-20 sign-up (**Figure 7**). In addition, over 90% of base acres for wheat, sorghum, barley, pulses, minor oilseeds, rice, and peanuts enrolled in PLC under the 2019-2020 sign-up. The major exception was soybeans base acres, where 85.9% of producers preferred to stick primarily with ARC.

The shift from ARC to PLC reflects expectations about the relationship between each commodity's market-year average farm price (MYAP) relative to its reference price. When MYAPs are expected to remain above the reference price, the revenue-based ARC program offers a higher probability of making a payment than does the PLC program. The PLC program will not make a payment so long as the MYAP remains above the reference price. In contrast, the ARC program uses a moving average revenue guarantee that rises with higher MYAPs and yields. A substantial drop in the national average yield in the current year may be sufficient to trigger an ARC payment, even if the MYAP remains above the commodity's reference price. This is particularly true for crops that have strong upward trends in their yields, such as corn and soybeans. This was clearly the case in 2014 when producers used the previous five years as a guide for the future and enrolled large percentages of their corn, soybean, and wheat base acres in ARC.

In contrast, if a commodity's MYAP is projected at levels below the reference price, then the PLC program may appear more attractive to many producers as a safety net against low prices. Accordingly, the preference for PLC under the 2018 farm bill is supported by the projected outlook through 2025 for MYAPs to be below reference prices for many covered commodities, including corn and wheat (**Figure 8**). Soybeans are the notable exception, as FAPRI projects the MYAP for soybeans to trend from slightly below the soybean reference price of $8.40 per bushel in 2020 to slightly above by 2025. Thus, many soybean producers continued to enroll their soybean base acres in ARC during the 2018 farm bill's initial sign-up.

Figure 8. MYAP as % of Reference Price for Corn, Soybeans, and Wheat Since 2005



Sources: Calculations by CRS using reference prices from the 2018 farm bill; historical prices for 2005-2019 are from USDA, National Agricultural Statistics Service (NASS); projected prices for 2020 are from USDA, *World*

Agricultural Supply and Demand, September 11, 2020; and projected prices for 2021-2025 are from FAPRI, *Baseline Update for U.S. Farm Income and the Farm Balance Sheet*, University of Missouri, Report #04-30, August 2020.

Notes: Reference prices did not exist prior to the 2014 farm bill. However, prior year farm prices are included in this chart to demonstrate their high levels relative to reference prices. *The All Wheat price is a composite price of the major wheat varieties—Hard Red Winter, Soft Red Winter, White, Hard Red Spring, and Durum wheat. MYAPs for each crop have been divided by their respective reference price and multiplied by 100 to facilitate relative comparisons.

Program Outlays Reflect Market Conditions

Payments under MAL, as well as ARC and PLC, vary countercyclically with market conditions; that is, payments are contingent on relative prices—they tend to increase when farm prices fall below support levels and decline when farm prices rise above support levels.

MAL Program Support Levels Are Low Relative to Farm Prices

Prior to 2010, the MAL program played a major role in providing revenue support to producers of loan-eligible crops (**Figure 9**). From 1998 through 2009, outlays under the MAL program averaged $3.6 billion annually, including $7.9 billion in each of 2000 and 2001.

The MAL program began to diminish in effectiveness as a floor price, particularly for corn and soybeans producers, from 2010 to 2013. During this period, U.S. farm prices for most program crops reached record levels and rose substantially above their statutorily fixed MAL loan rates. The 2014 farm bill extended the MAL program with no changes to the statutory loan rates. The 2018 farm bill raised MAL rates for most loan commodities starting in 2019. The percentage increases in MAL rates varied across program crops—from a low of 7.7% for rice to a high of 43.9% for oats—in an attempt to provide greater equity across program commodities.[15] Prior to the rate increases under the 2018 farm bill, MAL rates had been left unchanged since the early 2000s when provisions in the 2002 farm bill (P.L. 107-171) made modest adjustments to several commodities.[16]

More than $1 billion in total MAL benefits were incurred during the five-year 2014 farm bill period (2014-2018) (**Figure 10**). Three commodities accounted for all of the MAL outlays during this period: upland cotton ($718.3 million, 70.1%); peanuts ($169.0 million, 16.5%); and wheat ($137.0 million, 13.4%).

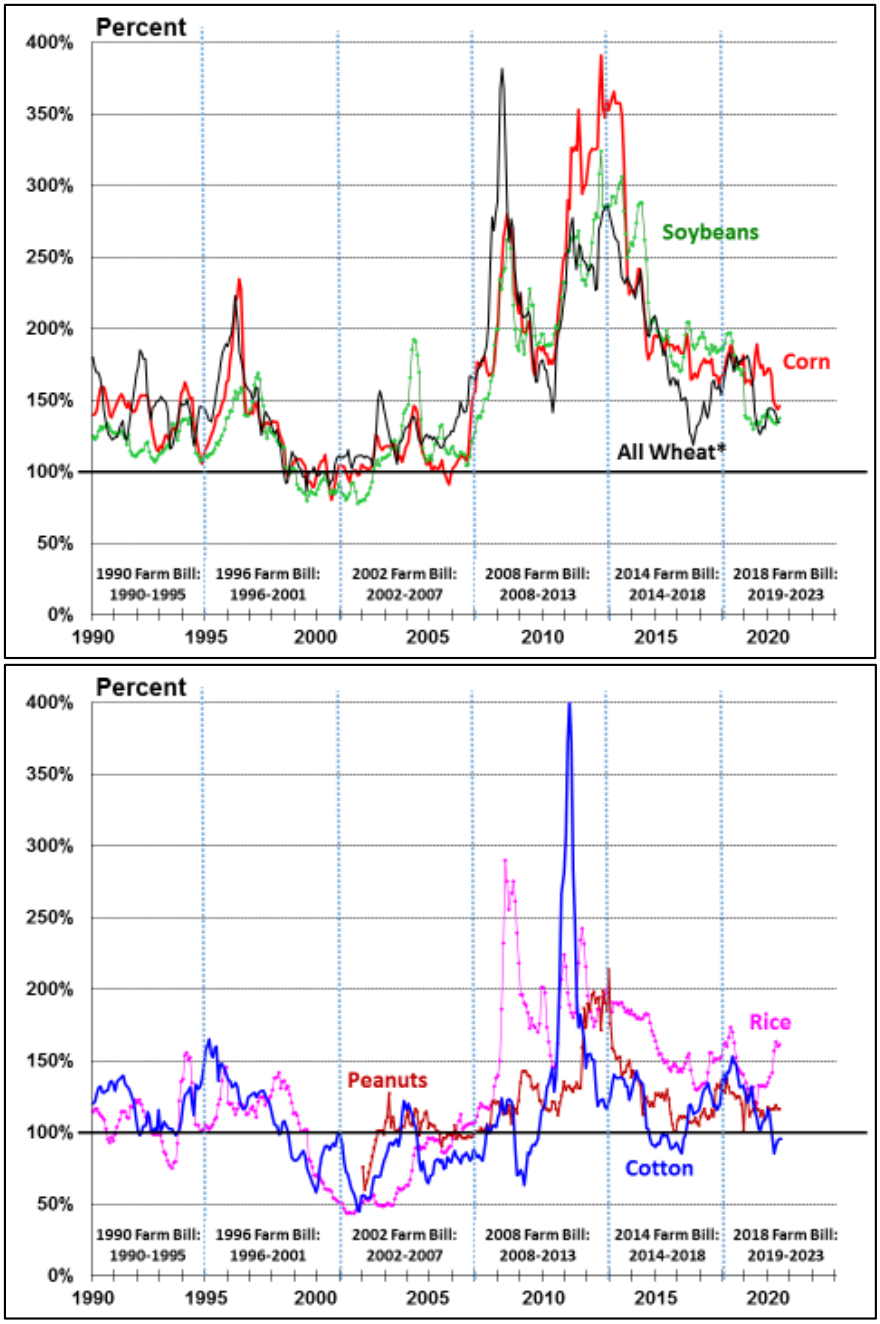
MAL program outlays are not expected to play a major role in USDA program support during the 2018 farm bill period—crop years 2019-2023—as the current outlook projects farm prices for most program crops to remain above their MAL loan rates throughout the period.[17]

[15] The loan rates for minor oilseeds, peanuts, wool, mohair, and honey were left unchanged by the 2018 farm bill. For more information, see CRS Report R45730, *Farm Commodity Provisions in the 2018 Farm Bill (P.L. 115-334)*.

[16] The 2008 farm bill adjusted the MAL rates upwards slightly for barley, oats, wheat, minor oilseeds, graded wool, and honey.

[17] For example, see the price projections from USDA's most recent baseline report at Erik Dohlman, James Hansen, and David Boussios, *USDA Agricultural Projections to 2029*, OCE-2020-1, USDA, Economic Research Service (ERS), February 2020; FAPRI, *Baseline Update for U.S. Agricultural Markets*, FAPRI-MU Report #04-30, August 2020.

Figure 9. Monthly Farm Prices as % of MAL Loan Rate Since 1990



Sources: Calculations by CRS using MAL program loan rates from the 1990, 1996, 2002, 2014, and 2018 farm bills. Historical monthly farm prices for corn, soybeans, and all wheat for 1990 to 2020 and peanuts for 2002 to 2020 are from USDA, NASS, Agricultural Prices. Historical monthly average world prices for cotton and rice are used in lieu of farm prices to capture potential MAL loan repayment rates. Average world price data are from ERS, commodity yearbook data tables for cotton and rice.

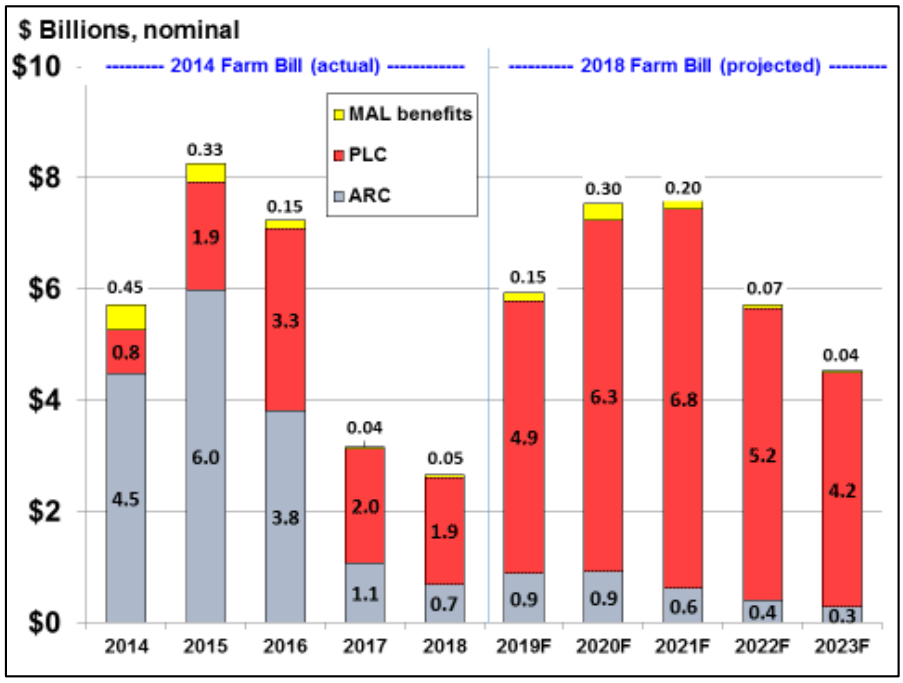
Notes: *The All Wheat price is a composite price of the major wheat varieties—Hard Red Winter, Soft Red Winter, White, Hard Red Spring, and Durum wheat. Calculations for upland cotton and rice compare their average world prices, as announced by USDA for purposes of MAL loan repayment, with each commodity's statutory loan rate. Peanuts were added as a loan crop in 2002. This chart is indicative of potential MAL benefits. It likely understates the extent of actual MAL benefits, which are based on daily or weekly announced repayment rates that have more variation than monthly averages.

ARC and PLC Outlays Large in 2014-2016, Declined in 2017-2018

As mentioned earlier, the high commodity prices of the 2010-2013 period resulted in attractive ARC revenue guarantees under the Olympic average of prices from the preceding five years (**Figure 8**). This resulted in both high participation rates in ARC for corn, soybeans, and wheat base acres and substantial ARC payments during the first three years of the 2014 farm bill period: $4.5 billion in 2014, $6.0 billion in 2015, and $3.8 billion in 2016 (**Figure 10**). By 2017, declining MYAPs from the 2014-2016 period had dampened the price component of the ARC revenue guarantee and reduced ARC payments in 2017 and 2018.

Figure 10. MAL, PLC, and ARC Program Outlays, 2014-2023F

Crop-year data; not adjusted for inflation



Sources: Data for 2014-2018 are actual outlays compiled by CRS on a crop-year basis from FSA, farm program data, March 12, 2020. Data for 2019 includes likely PLC payments based on FSA base sign-up and announced PLC payment rates as of September 11, 2020. All other data for 2019-2023 are crop-year projections derived by CRS using FAPRI's "Baseline Updated for U.S. Agricultural Markets," University of Missouri, Report #03-20, June 2020. Nominal values are not adjusted for inflation.

Notes: ARC and PLC program outlays correspond to the crop year for which the payment was triggered, not the year the payment was made. MAL benefits include marketing loan gains, loan deficiency payments, and gains from forfeiture.

MYAPs remained above reference prices for most program crops in 2014, thus limiting PLC outlays that year. Starting in 2015, wheat and corn MYAPs fell below reference prices, and PLC payments began to rise. In 2016, PLC outlays reached $3.3 billion. MYAPs remained below reference prices for most commodities during 2017 and 2018, and PLC payments surpassed ARC payments in both of those years.

Producers took notice of the higher payments under PLC compared with ARC, when MYAPs fall below reference prices. Looking forward, USDA's most recent annual baseline report (February

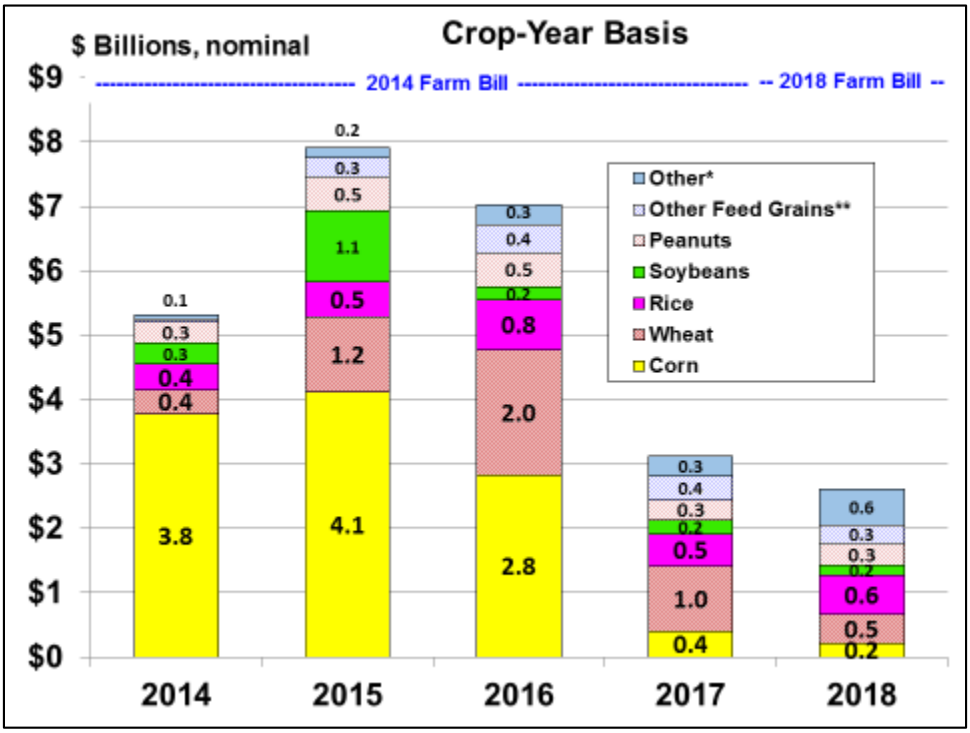
2020) projects MYAPs for most major program crops to remain below reference prices through 2029, thus favoring PLC over ARC in terms of the potential for receiving payments.[18]

Comparison Between ARC and PLC Outlays by Commodity

During the 2014 farm bill's five-year period, corn accounted for $11.3 billion (or 44%) of total combined ARC and PLC payments. Wheat accounted for $5.0 billion (19%), rice for $2.8 billion (11%), soybeans for $2.0 billion (8%), peanuts for $2.0 billion (8%), other feed grains for $1.5 billion (6%), and the remainder for $1.4 billion (5%). However, the payments were not evenly distributed over time—most of the payments to corn base acres came during the first three years of the 2014 farm bill (2014-2016), when corn received $10.7 billion in combined ARC and PLC outlays (**Figure 11**).

Figure 11. Combined ARC and PLC Outlays by Commodity, 2014-2018

Crop-year data; not adjusted for inflation



Source: Compiled by CRS from FSA, official program data, as of March 12, 2020. Outlays are for combined ARC and PLC payments by commodity.

Notes: *Other includes minor oilseeds and pulses for 2014-2018 and seed cotton for 2018. **Other feed grains include grain sorghum, barley, and oats. ARC and PLC program outlays correspond to the crop year for which the payment was triggered, not the year the payment was made. MAL benefits are not included in this chart.

Comparison of ARC and PLC Outlays per Base Acre

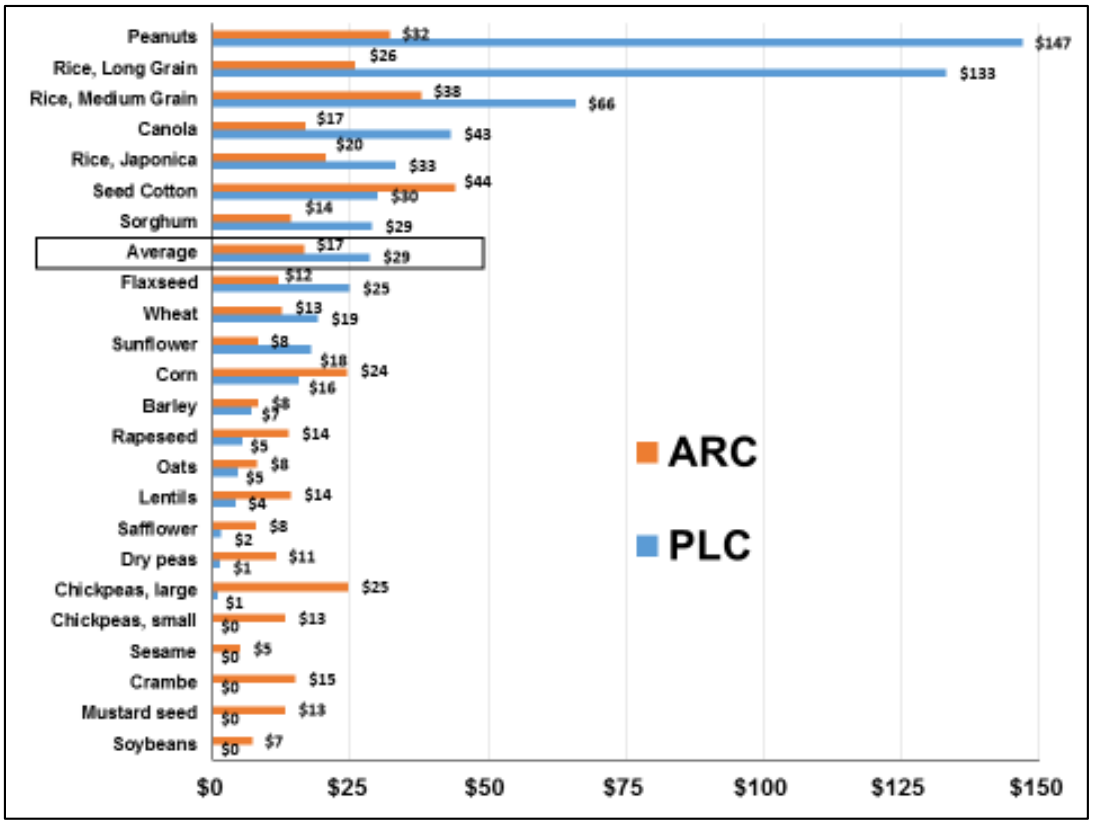
When the ARC and PLC outlays are compared as payments per base acre for the entire 2014-2018 period, the average PLC payment is $29 per acre, and the ARC payment is $17 per acre

[18] For USDA's most recent baseline report, see Erik Dohlman, James Hansen, and David Boussios, *USDA Agricultural Projections to 2029*, OCE-2020-1, ERS, February 2020. See ERS, "Agricultural Baseline," https://www.ers.usda.gov/topics/farm-economy/agricultural-baseline/ for this and earlier reports.

(**Figure 12**). However, there is substantial variation among the program commodities. Peanuts had the highest PLC payment rate at $147 per acre. Long- and medium-grain rice also had large PLC payment rates at $133 and $66 per acre, respectively.

Figure 12. Average Annual ARC and PLC Payment Rates per Base Acre

Averages for 2014-2018 crop years



Source: Compiled by CRS from FSA, farm program data, as of March 12, 2020.

Notes: The averages are for enrolled base acres and have been adjusted for payments to generic acres during the 2014-2017 crop years. Seed cotton estimates are for 2018 only.

The three largest program crops in terms of total base acres—corn, soybeans, and wheat—had relatively modest ARC and PLC payment rates per acre: For corn, the ARC and PLC payment rates were $24 and $16 per acre, respectively; for soybeans, the rates were $7 and $0; and for wheat, $13 and $19. Seed cotton had the highest ARC payment rate at $44 per acre, but this may be misleading for two reasons. First, seed cotton was not eligible for ARC and PLC payments during 2014-2017, thus only payments for 2018 are included in the payment rate calculation. Second, 80% of seed cotton base was enrolled in PLC.[19] Seed cotton's PLC payment rate was $30 per acre.

Many farmers contend that higher-valued crops—such as peanuts, rice, and cotton, which also have higher costs of production—should necessarily receive higher subsidy rates. Farmers have long endorsed the concept of basing support on costs of production rather than dollars per acre, because costs have to be covered to stay in business and because costs of production vary widely

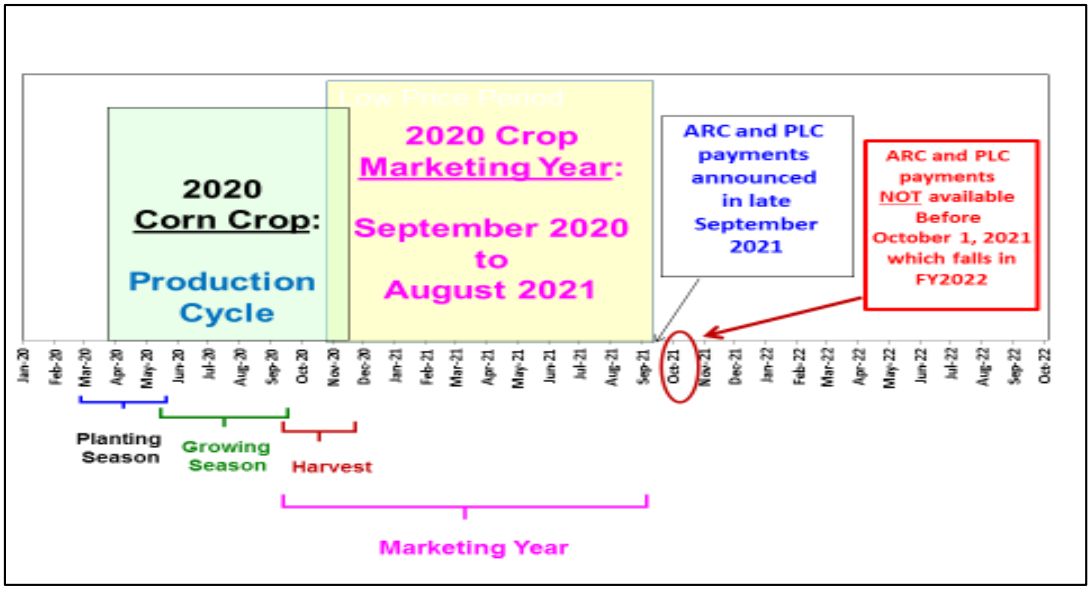
[19] According to USDA data, in 2018, 11.9 million acres of seed cotton base were enrolled in PLC (9.5 million acres), county-level ARC (2.1 million), or individual farm-level ARC (0.3 million).

across program crops. Economists, on the other hand, would generally use trend (or a moving average of) market prices as the basis for setting support prices in order to avoid market distortions and resource misallocations. Both of these alternative measures of payment rates across program commodities produce different outcomes.[20]

ARC and PLC Have a Delayed Payments Structure

An important consideration in evaluating the effectiveness of ARC and PLC as farm revenue safety net programs is the timeliness of program payments. In particular, ARC and PLC program payments are made with a lag of at least one year from each crop's harvest. This is because a full 12-month marketing year must be completed to compile the annual price and yield data necessary for USDA's payment calculations (**Figure 13**). According to statute, USDA is to announce payments no later than 30 days after the end of each marketing year, but the payments cannot be made prior to October 1 following the end of the applicable marketing year for each covered commodity.[21] The marketing year varies by crop (**Table 1**). For example, the marketing year for corn or soybeans harvested in the fall of 2020 ends on August 31, 2021. Thus, corn and soybean payments for the 2020 crops must be announced by September 30, 2021, but may not be made before October 1, 2021.

Figure 13. Schedule for 2020 Corn ARC and PLC Payments



Source: Compiled by CRS.

A result of the delayed payment protocol associated with ARC and PLC is that it makes tracking the payments associated with a particular crop more difficult. Consider the 2020 corn crop: It was planted in the spring of 2020—during the 2020 calendar and fiscal year—but any ARC and PLC payments will not be made until after October 1, 2021—during calendar 2021 and FY2022—about when the following year's (i.e., 2021) crop is being harvested.

[20] For a discussion of the issues related to basing support rates on costs of production and for a historical comparison of support rates relative to costs of production and market price trends, see archived CRS Report RL34053, *Measuring Equity in Farm Support Levels*, July 20, 2010 (available to congressional clients upon request).

[21] 2018 farm bill (P.L. 115-334; §1106 for PLC, §1107 for ARC).

Table 1. Marketing Year and Payment Date for Major Covered Crops, 2020 Crop Year

For payments under either the ARC or PLC program

Covered Crop	2020 (or equivalently 2020/2021) Marketing Year	1st Potential Payment Date	Fiscal Year
Wheat, barley, oats, canola, mustard, flaxseed, rapeseed, safflower	June 1, 2020, to May 31, 2021	Oct. 1, 2021	2022
Rice, peanuts, seed cotton, sunflower	Aug. 1, 2020, to July 31, 2021	Oct. 1, 2021	2022
Corn, sorghum, soybeans	Sept. 1, 2020, to Aug. 31, 2021	Oct. 1, 2021	2022

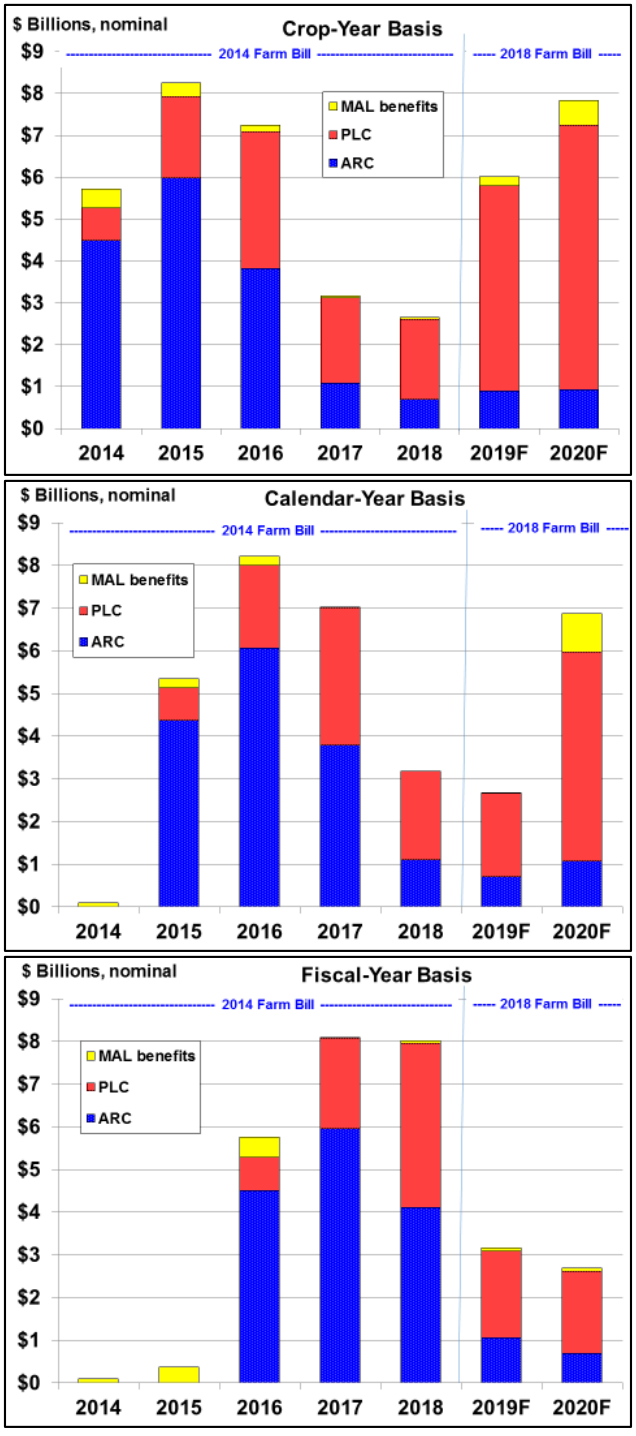
Source: Compiled by CRS.

This timing shift in ARC and PLC payments across crop, calendar, and fiscal years can be seen in **Figure 14**, where the total payments do not change, but the timing results in a visible shift rightward as the data are tracked. In **Figure 14**,

- the first (top) chart assigns payments to the crop year when they are triggered;
- the second (middle) chart shows the actual timing of the payments by calendar year; and
- the third (bottom) chart shows the timing of the payments by fiscal year—that is, from a federal budgetary perspective.

Farm program spending data for each of these three time periods is used for different purposes. Crop-year program outlays are reported by USDA as part of U.S. domestic farm support in its annual notifications to the World Trade Organization. Calendar year farm program outlays are used by USDA's Economic Research Service in calculating annual U.S. net farm income. Fiscal year program outlays are used by the Administration and Congress in the annual federal budget process.

Figure 14. ARC and PLC Payments by Crop Year, Calendar Year, and Fiscal Year



Sources: Crop-year data for 2014-2018 are FSA farm program data, March 12, 2020; 2019-2020 data are crop-year forecasts derived by CRS from FAPRI (June 2020); data for 2019 includes likely PLC payments based on FSA base sign-up and announced PLC payment rates as of September 11, 2020. Calendar year data for 2014-2018 are from the ERS farm income data base; calendar year projections for 2019-2020 are from FAPRI (September 2020). Fiscal year data for FY2014-FY2018 are from the Congressional Budget Office (CBO), USDA Baseline

Projections, various years; projections for FY2019-FY2020 are from CBO's USDA Baseline Projections, March 2020. Nominal values are not adjusted for inflation.

Note: MAL benefits include marketing loan gains, loan deficiency payments, and gains from forfeiture.

Some say that an effective safety net would link the payments closely to the circumstances that triggered them, as shown in the first (top) chart. The second and third charts show payments shifted substantially to the right of the crop-year chart, which suggests that the actual "safety net" link is weak. The importance of this link for an individual farm operation would depend on its financial situation: Can the farm wait one year or possibly longer for federal payments that are intended to partially offset the economic losses as measured by the ARC or PLC program? For example, most producers would have to repay operating loans for the 2020 corn crop and purchase inputs for planting the 2021 crop nearly a year before ARC or PLC payments for the 2020 crop would be received.

One can also ask whether the ARC or PLC programs have reasonably estimated the economic damage that producers might have incurred. For example, under the decoupled nature of the ARC and PLC programs, a farm may not have even planted the crop that triggered the payment: Has the farm incurred a loss, or is the payment simply a taxpayer-funded income transfer? ARC and PLC were designed to accomplish multiple policy goals. Program attributes that contribute to meeting those multiple goals can make some results seem inconsistent with one-dimensional views of the program. ARC and PLC serve as a principal component of the farm safety net (along with crop insurance and disaster assistance), but they also comply with international trade commitments. The decoupling of ARC and PLC payments attempted to satisfy the international-trade-compliance policy goal while minimally compromising their safety net function.

From a budget perspective and for taxpayer accountability, the government's policy is to wait to make payments until evidence of a loss is finalized. In the 1980s, the target-price deficiency payment (TPDP) program—a predecessor of ARC and PLC—was also tied to the marketing year price. However, the TPDP program provided advanced deficiency payments (equal to a portion of a preliminary estimate of the program's total payment) based on USDA supply and demand estimates made early in the marketing year.[22] The final TPDP payment amount was determined after the end of the marketing year, with the possibility that some of the advance payment would need to be returned. The advance payments were eliminated in the 2000s as a budget cutting measure, which maintained payments but scored budgetary savings by delaying the fiscal year timing.

Issues for Congress

This report provides an initial assessment on the implementation of the revenue support programs of the 2014 and 2018 farm bills. It is a starting point for a discussion of how well the MAL, ARC, and PLC programs have performed as farm safety net programs. It is intended to provide some context for future congressional consideration of farm policy, particularly in light of the substantial volume of ad hoc farm support payments that have been paid out in recent years, which are independent of farm-bill-authorized farm safety net programs. During the past three years (2018-2020), USDA has been expected to pay as much as $39 billion over and above the farm bill's traditional support through MAL, ARC, and PLC, including $8.6 billion under the

[22] ERS, *Provisions of the Food, Agriculture, Conservation, and Trade Act of 1990*, Agricultural Information Bulletin no. 624, June 1991.

2018 Market Facilitation Payment program,[23] $14.5 billion under the 2019 Market Facilitation Payment program,[24] and potentially $16 billion under the 2020 Coronavirus Food Assistance Program.[25] This is in comparison to an estimated $11.5 billion in MAL, ARC, and PLC payments over the same 2018-2020 period.

Several policy issue related to the MAL, ARC, and PLC programs may be of potential interest to Congress. They include the delayed payment schedule under both ARC and PLC programs—payments do not occur until at least a year after the affected crop is harvested. Another perennial issue that challenges policymakers is maintaining equity of support—for example, when considering statutory reference prices—across different program commodities under changing market conditions. Another potential policy issue is the extent to which the general level of farm prices has moved above MAL loan rates, thus diminishing their functionality as floor prices for eligible crops.

With respect to the implementation of the ARC and PLC programs, policymakers are challenged by trade-offs between the dual policy objectives of complying with international trade commitments (thus, the decoupled nature of payments from production) and providing safety net support relative to market conditions. Also, there are trade-offs between linking payments to losses and the speed with which payments are made in response to market or production losses.

Designing a farm safety net program clearly involves policy trade-offs. Policy designs of a farm safety net program might consider the many potential aspects of what constitutes an "effective" safety net program. The following questions suggest some of the different types of difficult policy trade-offs policymakers may confront if designing a farm safety net program:

- To what extent should safety net payments be triggered by the occurrence of a bona fide "loss"—whether it be an unexpected decline in farm prices or an unexpected drop in yields per acre from historical trend levels—and what portion of a loss should the safety net payment be expected to offset?
- What is the optimal balance between fully measuring a loss (some losses may take months to fully assess) and making a timely safety net payment in response to the loss?
- How can a reasonable level of program equity be measured and achieved in terms of safety net loss compensation across different program crops and regions?
- How can a safety net payment respond meaningfully to a loss without providing an incentive to favor the production of one particular crop relative to other crops or relative to market conditions of supply and demand?
- Are farm safety net programs providing a "fair" measure of safety net support to the U.S. agricultural sector relative to federal support in other sectors of the economy?

[23] CRS Report R45310, *Farm Policy: USDA's 2018 Trade Aid Package*.

[24] CRS Report R45865, *Farm Policy: USDA's 2019 Trade Aid Package*.

[25] As of September 27, 2020, USDA had made payments of $10.2 billion out of a potential $16 billion appropriation. See CRS Report R46395, *USDA's Coronavirus Food Assistance Program (CFAP) Direct Payments*.

Table 2. Farm Prices, MAL Loan Rates, and Effective Reference Prices

Program Commodities[a]	Unit	TIER I: MAL Loan Rate	Olympic 5-Year Average (OA)[b] MYAP[c]	2020 MYAP Forecast[d]	TIER II: Effective RP = Max of: Reference Price (RP)	TIER II: Effective RP = Max of: 85% OA MYAP	TIER II: Effective RP = Subject to a CAP of 115% RP
		($/unit)	($/unit)	($/unit)	($/unit)	($/unit)	($/unit)
Corn	bu.	$2.20	$3.52	$3.50	$3.70	$2.99	$4.26
Soybeans	bu.	$6.20	$8.94	$9.25	$8.40	$7.66	$9.66
Wheat, all	bu.	$3.38	$4.73	$4.50	$5.50	$4.02	$6.33
Peanuts	cwt.	$17.75	$20.83	$20.73*	$26.75	$17.71	$30.76
Sorghum	bu.	$2.20	$3.26	$3.50	$3.95	$2.20	$4.54
Barley	bu.	$2.50	$4.76	$4.45	$4.95	$2.50	$5.69
Oats	bu.	$2.00	$2.46	$2.70	$2.40	$2.09	$2.76
Rice, long grain	cwt.	$7.00	$11.17	$11.30	$14.00	$9.49	$16.10
Rice, medium grain	cwt.	$7.00	$13.57	$11.50	$16.10	$11.53	$18.52
Dry peas	cwt.	$6.15	$11.10	$9.39*	$11.00	$9.44	$12.65
Lentils	cwt.	$13.00	$24.03	$17.10*	$19.97	$20.43	$22.97
Chickpeas, large	cwt.	$14.00	$28.30	$18.41*	$21.54	$24.06	$24.77
Chickpeas, small	cwt.	$10.00	$23.80	$15.34*	$19.04	$20.23	$21.90
Cotton, upland[e]	cwt.	$52.00[f]	$61.06	$49.50*	n/a	n/a	n/a
Seed Cotton[g]	cwt.	n/a	$33.37	n/a	$36.70	$28.65	$42.21
Sugar, refined beet	cwt.	$25.37	$33.43[h]	$44.00*	n/a	n/a	n/a
Sugar, raw cane	cwt.	$19.75	$26.20[i]	$26.30*	n/a	n/a	n/a
Wool, graded	cwt.	$115.00	$156.00[j]	n/a	n/a	n/a	n/a
Wool, nongraded	cwt.	$40.00	n/a	n/a	n/a	n/a	n/a
Mohair	cwt.	$420.00	$516.67[k]	n/a	n/a	n/a	n/a
Honey	cwt.	$69.00	$211.93[l]	n/a	n/a	n/a	n/a
Minor oilseeds[m]	cwt.	$10.09	n/a	n/a	$20.15	n/a	$23.17
Sunflower	cwt.	$10.09	$17.53	$20.87*	$20.15	$14.90	$23.17
Flaxseed	cwt.	$10.09	$16.27	$9.792*	$20.15	$13.83	$23.17
Canola	cwt.	$10.09	$16.00	$15.34*	$20.15	$13.60	$23.17
Rapeseed	cwt.	$10.09	$21.50	n/a	$20.15	$18.28	$23.17
Mustard	cwt.	$10.09	$30.17	n/a	$20.15	$25.64	$23.17
Safflower	cwt.	$10.09	$20.23	n/a	$20.15	$17.20	$23.17

Sources: MAL loan rates and reference prices are from the 2018 farm bill (P.L. 115-334). Farm price data are from NASS and ERS, Farm Income and Wealth Statistics.

Notes: MYAP = market-year average farm price, n/a = not applicable, bu. = bushel, cwt. = hundredweight or 100 lbs. *Simple average of monthly prices (January-July) for 2020. Tier II support also includes ARC revenue protection not listed in this table.

a. Tier I commodities are referred to as "loan" commodities; Tier II commodities are known as "covered" commodities. Commodities with a Reference Price are covered commodities eligible for PLC or ARC.

b. The Olympic average excludes the high and low values then calculates the average from the remaining values.

c. The Olympic average for crop years 2015-2019 of MYAPs. Average adjusted world prices are used for comparison of upland cotton and rice MAL loan rates instead of farm prices.

d. Unless marked with an asterisk (*), the reported 2020 MYAP is a USDA projection as reported in the *World Agricultural Supply and Demand Estimates*, September 11, 2020. If marked with an asterisk, the price shown in the column is the simple average of monthly prices (January-July) for 2020.

e. Upland cotton was removed from eligibility by the 2014 farm bill due to a ruling from a World Trade Organization dispute settlement case successfully brought by Brazil against U.S. cotton support programs (CRS In Focus IF10193, *The WTO Brazil-U.S. Cotton Case*).

f. The loan rate for upland cotton is the average MYAP for the preceding two years but within a range of $45/cwt. and $52/cwt.

g. Seed cotton was added as a covered commodity, but not a loan commodity, by the Bipartisan Budget Act of 2018 (P.L. 115-123). Seed cotton is "deemed" to have a MAL loan rate of $25/cwt. for purposes of calculating the applicable ARC or PLC payment rate.

h. Olympic average of fiscal year prices for 2015-2019; *U.S. wholesale refined beet sugar price, Midwest markets*, Milling and Baking News, as reported by ERS.

i. Olympic average of fiscal year prices for 2015-2019; U.S. raw sugar price, Contract No. 14/16, duty fee paid New York, as reported by ERS.

j. Olympic average farm price received for calendar years 2015-2019, with no distinction for graded or ungraded, as reported by NASS.

k. Olympic average of calendar year prices for 2015-2019.

l. Olympic average of calendar year prices for 2015-2019.

m. Minor oilseeds include the six listed oilseeds (sunflower, flaxseed, canola, rapeseed, mustard, and safflower) as well as crambe and sesame—but these latter two are excluded due to insufficient data.

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