



The Agriculture Risk Coverage (ARC) Program of the 2014 Farm Bill

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The 2014 farm bill contains a major rewrite to the commodity programs along with significant changes to the crop insurance system. Information contained in this research brief will focus on changes contained in the commodity title for corn, soybean, and long grain rice crops produced in Louisiana with emphasis on the program mechanics of the ARC program. The complex policy changes will require producers to evaluate the program choices afforded in the bill to determine which program offers a better risk management safety net for the five-year duration of the farm law. Determining which commodity program to participate in will bear on certain crop insurance eligibility criteria as well. Regardless of program choice, program payment(s) will not be made until after September 30, 2015 for the 2014 crop. Producers will also be faced with whether or not to keep their existing base acres or have the farm's base reallocated, although this will be a landowner decision. This is a key consideration for producers who have a majority cotton base, as cotton will no longer receive traditional Title I commodity support (other than loan protection).

One major change in this farm bill, which covers the 2014 through 2018 crop years, is the repeal of the direct payment (DP) program. In order to achieve substantial commodity title budget savings, the direct payment program became a vulnerable target politically during farm bill markup as these payments were made regardless of market price and were dispersed at a fixed rate. Along with the elimination of direct payments, the countercyclical (CCP) and the average crop revenue election program (ACRE) are also repealed.

Direct payment rates for covered commodities were justified under the 2008 farm bill (including a one-year extension for 2013). The fixed direct payment rate was established at \$2.35 per hundredweight for rice, \$0.44 per bushel for soybeans, \$0.28 per bushel for corn, and \$0.067 per pound for cotton. To examine the share of direct payments relative to major row crops produced in the state, DP are calculated using average USDA FSA Louisiana farm program yields of 42.0 hundredweight for rice, 20.0 bushels for soybeans, 70.7 bushels for corn, and 733.0 pounds for cotton. This equates to a DP of \$98.70 for rice, \$8.80 for soybeans, \$19.80 for corn, and \$49.11 for cotton. For crops such as rice and cotton, the loss of the direct payment program significantly impacts income support to farms- assuming the farm has substantial base acres in one or both of these program crops. Farms with a majority corn and soybean base receive less support from this program relative to rice and cotton crops.

Title I Commodity Support Programs

New commodity support programs contained in Title I of the Agricultural Act of 2014 include a revenue coverage-type support program called Agricultural Risk Coverage (ARC) and a Price Loss Coverage (PLC) price-based program that bears a similar resemblance to the traditional countercyclical program. The program signup period is expected to begin in the fall/winter of 2014/15. Both of these programs are available for all covered commodities beginning in 2014. Producers have the irrevocable election for the 2014 through 2018 crop years to receive PLC or ARC payments. Program choice is made on a covered commodity-by-covered commodity basis and can vary by USDA FSA farm serial number in the state. Program enrollment must be a unanimous decision made by all the producers on the farm. For the PLC program, the payment acres for each covered commodity on a farm equals 85% of the base acres for the commodity. Payment acres for the ARC program are dependent upon county-level coverage (85% of base) or the individual farm coverage (65% of base) option selected. If a no commodity support election is made in 2014, producers will not be eligible to receive ARC or PLC support for that crop year. As a default option, they will be automatically enrolled in the PLC program for the subsequent years of the farm bill (2015-2018).

Agricultural Risk Coverage (ARC) Program

The ARC program is a shallow-loss, area-wide revenue protection plan delivered through the USDA FSA. This program is designed to provide assistance in the deductible range of traditional crop insurance products using indications of actual losses while placing an emphasis on multi-year price risk. ARC is intended to cover against lower revenues caused by either low prices or by low yields relative to a recent five-year Olympic average. This program provides benefit to producers when the covered commodity's price declines relative to the recent five-year average price level.

A benchmark revenue threshold is established in which revenue losses at the county (parish) level are measured against. For producers that elect to participate in the ARC program, coverage is available at the county-level or at individual farm-level. All producers on a farm must select the same coverage option under the ARC program. ARC payments are made if the actual crop revenue is less than the ARC guaranteed and are based on county data not individual farm data. Similar to the operational parameters of the PLC program, payments are not dependent on planted acres unless the covered commodity is planted on generic base acres.

Actual crop revenue for the county coverage option is equal to the actual average county yield per planted acre multiplied by the higher of: the national average marketing year (MYA) price or the loan rate. In the event that a producer selects the individual coverage option, actual crop revenue is equal to the producer's share of total production on the farm multiplied by the higher of national MYA price or the loan rate.

For the ARC county coverage option, benchmark revenue is equal to the most recent five-year Olympic historical county yield average multiplied the five-year Olympic average national MYA price for the most recent five-year period. Benchmark revenue at the individual coverage level follows the same five-year Olympic averaging methodology, but relies on the individual farm-level yield per planted acre in lieu of county-level data. If the national market price for any of the five most recent crop years is lower than the reference price, the reference price is inserted as a price plug for that crop year. If the county yield is less than 70% of the transition yield, then 70% of the transitional yield is inserted in its place. The ARC

guarantee is equal 86% of benchmark revenue. A 10% level of benchmark revenue of the applicable crop year establishes the maximum ARC payment rate. Hence, the ARC program provides a coverage ban between 76% and 86% of revenue.

The Agricultural Act of 2014 established reference prices for covered commodities that are in effect for the 2014 to 2018 crop years. Reference prices are used in both the ARC and PLC program payment calculation formulas. The operational parameters of these legislatively- established prices act similar to the target price provision of the countercyclical program of the 2008 farm bill. Table 1 provides a comparison of target prices and reference prices for selected commodities.

Table 1. Reference prices for covered commodities as compared to the CCP target prices of the 2008 bill.

Covered Commodity	Unit	CCP Target Price	Reference Price
Wheat	bushel	\$4.17	\$5.50
Corn	bushel	\$2.63	\$3.70
Grain Sorghum	bushel	\$2.63	\$3.95
Rice (long and medium grain)	hundredweight	\$10.50	\$14.00
Soybeans	bushel	\$6.00	\$8.40
Upland Cotton	pound	\$0.71	N/A

ARC program payments are made on 85% of the base acres enrolled in the covered commodity. In the case of individual coverage, ARC payment is made on 65% of base acres. A key design feature of the individual ARC program is that it operates on the producer's shared sum of all covered commodities produced on the farm. Meaning that if a producer chooses to participate in the individual ARC program, this program decision is considered whole-farm and therefore applies to all covered commodities produced on the farm (by USDA FSA serial number). The share of crop acreage planted to each commodity is used to determine the weights used to calculate a single benchmark revenue measure.

Historical USDA NASS production data from 2009 to 2012 was compiled for Acadia, Tensas, and Morehouse parishes to illustrate potential effects of the ARC program at the county-level. Market prices that are presented for the 2014 through 2018 crop years are based on the March 2014 baseline price forecasts compiled by the University of Missouri Food and Agricultural Policy Research Institute (FAPRI). In efforts to obtain 2014 through 2018 yield estimates for the county (parish), yields are expressed as a function of the previous three-year rolling average of the USDA NASS data. By using this methodology, yields for the 2014 through 2018 crop years represent recent trends in the increased yield level among corn, soybeans, and long grain rice crops produced in Louisiana.

Example 1. Corn Production in Tensas Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for Tensas parish corn production. Corn that is produced on this farm in Tensas Parish, LA is ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (bu)	Estimated Corn MYA Price
2009	128.98	\$3.55*
2010	123.92	\$5.18
2011	117.77	\$6.22
2012	174.22	\$6.89
2013	167.91	\$4.50 (estimate)
* The reference price of \$3.70 is substituted in place of \$3.55 in the benchmark revenue calculation for the 2009 crop year.		

Crop Year	Estimated Parish Yield	Estimated Corn MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	153.30	\$4.17	\$639.27	\$743.43	\$639.35	Yes	\$0.07
2015	165.15	\$4.09	\$675.44	\$786.40	\$676.30	Yes	\$0.73
2016	162.12	\$4.07	\$659.83	\$804.65	\$692.00	Yes	\$27.35
2017	160.19	\$4.06	\$650.37	\$702.05	\$603.76	No	\$0.00
2018	162.48	\$4.04	\$656.44	\$667.81	\$574.32	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:
Previous five-year Olympic average for price = $\{(\$5.18 + \$6.22 + \$4.50) / 3\} = \5.30 per bushel
Previous five-year Olympic average for yield = $\{(128.98 + 123.92 + 167.91) / 3\} = 140.27$ bushels
Note: The five-year Olympic average will exclude the highest and lower values for the period.
2014 ARC Benchmark Revenue is equal to $(\$5.30 * 140.27) = \743.43 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$743.43)$ or \$639.35 per acre

The 2014 actual crop revenue is equal to: $(\$4.17 * 153.30) = \639.26 per acre
Since the ARC guarantee of \$639.35 is greater than the actual revenue of \$639.27 for the 2014 crop year,
an ARC corn payment is triggered in Tensas Parish, LA.

The payment is equal to the following calculation:
 $\{(\$639.35 - \$639.27) * 85\%\} = \$0.07$ per corn base acre in Tensas Parish, LA for 2014

These steps would then be repeated for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the bill.

Example 2. Soybeans Produced in Morehouse Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for Morehouse parish soybean production. Soybeans that are produced on this farm in Morehouse Parish, LA are ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since

ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (bu)	Estimated Soybean MYA Price
2009	37.35	\$9.59
2010	46.07	\$11.30
2011	47.14	\$12.50
2012	49.70	\$14.40
2013	56.38	\$12.70 (estimate)

Crop Year	Estimated Parish Yield	Estimated Soybean MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	51.07	\$9.84	\$502.58	\$579.59	\$498.45	No	\$0.00
2015	52.39	\$9.80	\$513.38	\$599.88	\$515.90	Yes	\$2.14
2016	53.28	\$9.68	\$515.77	\$596.30	\$512.81	No	\$0.00
2017	52.25	\$9.68	\$505.76	\$563.23	\$484.38	No	\$0.00
2018	52.64	\$9.77	\$514.28	\$514.45	\$442.43	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:
 Previous five -year Olympic average for price = $\{(\$11.30 + \$12.50 + \$12.70) / 3\} = \12.17 per bushel
 Previous five-year Olympic average for yield = $\{(46.07 + 47.14 + 49.70) / 3\} = 47.64$ bushels
Note: The five-year Olympic average will exclude the highest and lower values for the period.
 2014 ARC Benchmark Revenue is equal to $(\$12.17 * 47.64) = \579.77 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$579.77)$ or \$498.60 per acre

The 2014 actual crop revenue is equal to: $(\$9.84 * 51.07) = \502.58 per acre
 Since the ARC guarantee of \$498.60 is less than the actual revenue of \$502.58 for the 2014 crop year, an ARC soybean payment is not triggered for Morehouse Parish, LA.

In years that ARC payment criteria is met, the payment per soybean base acre is equal to the amount that the ARC guarantee exceed the actual revenue multiplied by a factor 0.85. These steps would then be repeated for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the bill. Rounding to the nearest cent for this numeric exercise may result in 2014 crop year data not matching exact figures in the ARC tables for soybeans.

Example 3. Long Grain Rice Produced in Acadia Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for Acadia parish long grain rice production. Long grain rice that are produced on this farm in Acadia Parish, LA is ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since

ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (cwt)	Estimated Long Grain Rice MYA Price
2009	64.31	\$12.90*
2010	63.36	\$11.00*
2011	65.39	\$13.40*
2012	64.84	\$14.50
2013	73.44	\$14.88 (estimate)
* The reference price of \$14.00 is used to calculate benchmark revenue in the 2009, 2010, and 2011 crop years.		

Crop Year	Estimated Parish Yield	Estimated LG Rice MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	67.89	\$14.81	\$1,005.46	\$918.67	\$790.06	No	\$0.00
2015	68.72	\$13.67	\$939.45	\$953.40	\$819.93	No	\$0.00
2016	70.02	\$13.73	\$961.36	\$972.11	\$836.01	No	\$0.00
2017	68.88	\$13.70	\$943.62	\$994.36	\$855.15	No	\$0.00
2018	69.21	\$13.67	\$946.05	\$987.58	\$849.32	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:

Previous five -year Olympic average for price = $\{(\$14.00 + \$14.00 + \$14.50) / 3\} =$
\$14.17 per hundredweight

Previous five-year Olympic average for yield = $\{(64.31 + 65.39 + 64.84) / 3\} = 64.85$ hundredweight

Note: The five-year Olympic average will exclude the highest and lower values for the period.

2014 ARC Benchmark Revenue is equal to $(\$14.17 * 64.85) = \918.92 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$918.92)$ or \$790.27 per acre

The 2014 actual crop revenue is equal to: $(\$14.81 * 67.89) = \$1,005.45$ per acre

Since the ARC guarantee of \$790.27 is less than the actual revenue of \$1,005.45 for the 2014 crop year, an ARC long grain rice payment is not triggered for Acadia Parish, LA.

In years that ARC payment criteria is met, the payment per rice base acre is equal to the amount that the ARC guarantee exceed the actual revenue multiplied by a factor 0.85. These steps would then be repeated for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the bill. Rounding to the nearest cent for this numeric exercise may result in 2014 crop year data not matching exact figures in the ARC tables for long grain rice.

In the corn ARC program example that is presented for Tensas parish, ARC program payments are issued in the first three years of the farm bill. It is important to note that this is a function of the MYA price along with the three-year rolling year average yield that is presented in the example. Given the specific

price parameters selected by the University of Missouri FAPRI for 2014 through 2018, the PLC program would not trigger any payments for corn since all MYA prices are above the \$3.70 reference price.

The Morehouse parish soybean example indicates that a soybean ARC payments in this parish would only be issued in 2015, given the set of FAPRI prices and yields selected. Since soybean prices forecasted by FAPRI are greater than the \$8.40 reference price, no PLC payments are triggered.

For long grain rice produced in Acadia parish, no ARC program payments are triggered since the revenue criteria is not met. However, the opposite is true for the PLC program given the FAPRI price projections employed in this analysis. Payments for long grain rice in Acadia parish would be: \$0.00 in 2014; \$16.11 in 2015; \$13.18 in 2016; \$14.64 in 2017; and \$16.11 in 2018 per rice base acre assuming that the producer elects to participate in the PLC program and not ARC for long grain rice for the specific farm. (This assumed that the landowner would elect to update the PLC program yield to 57.43 hundredweight.). In the ARC example calculation for long grain rice, the FAPRI rice price forecast is used. For purposes of the ARC program, long grain and medium grain rice will have separate ARC programming calculations based on market prices and yield units. For the PLC, the \$14.00 reference price applies to both long and medium grain rice.

This analysis centers on three major assumptions: (1) national MYA price projections reflect those of FAPRI simulation models released in March of 2014; (2) a three-year rolling average is used to forecast yield in each parish per crop for the duration of the farm bill using USDA NASS data; and (3) the current marketing year for corn and soybeans will end on August 31, 2014, while the rice marketing year ends on July 31, 2014. Hence, the 2013 MYA price used in ARC analysis is an estimated price, not the final USDA NASS reported value for the complete marketing year. In the appendix section of this research brief, alternative parishes are selected for ARC program analysis applying the same forecasted yield levels and MYA prices. Note that Appendix Tables A4 and A5 assume that parish average yields for corn and soybeans are held constant throughout the remaining years of the farm bill. This analysis is preformed to illustrate the impact of a declining commodity price on potential ARC program payments.

Payment Limits

The total amount of payments received for any crop year under PLC, ARC, marketing loan gains, or loan deficiency payments may not exceed \$125,000 per individual (or \$250,000 for a married couple). Within 180 days after enactment of the Agricultural Act of 2014, the USDA shall promulgate an opportunity for notice and comment on regulations to define the term ‘significant contribution of active personal management’. If a regulatory guideline is established on the number of individuals who may be ‘actively engaged’ in farming with respect to the farming operation, a significant contribution of active personal management would be determined to be the basis to meet the requirement of being actively engaged in farming and eligible to receive payments. This does not apply to operations comprised solely of family members. The requirements of any regulation promulgated pursuant to will begin in the 2015 crop year. A person or legal entity shall not be eligible to receive any benefit if the average adjusted gross income, or AGI, (for three -years) exceeds \$900,000.

Summary Points on Farm Program Language- Relating to the ARC Program

- Traditional DP and CCP programs are eliminated.

- Cotton will receive transition payments in 2014 and will remain eligible to receive support through the marketing loan program.
- Existing base acreage may be retained or be reallocated.
- Cotton base is considered generic base and subject to reallocation based on the 2009-2012 planting history of covered commodities and current plantings beginning in 2014.
- Commodity support offered as a choice of revenue protection (ARC) or price protection (PLC) on a covered commodity-by-covered commodity basis that can vary from farm-to-farm.
- The program decision is irrevocable for the 2014-2018 crop years. The signup period is expected to begin in the fall/winter of 2014/15.
- ARC is based on revenue.
- ARC is offered at the county-level or at the individual farm-level, with the benchmark revenue and program guarantee calculated in a slightly different manner, with the individual farm option paying on a reduced base acre percentage.
- Individual ARC is a whole-farm election.
- ARC program payments are a function of county-level yields and national market prices. ARC does contain a price plug (reference price) and yield plug (T-yields) for determining the benchmark revenue.
- Crop participating in the ARC program are not eligible to receive support from the Supplemental Coverage Option (SCO).
- ARC county-level option and PLC payments are paid on 85% of base acres.
- Payment limit is \$125,000 per legal entity and is the sum of ARC, PLC, LDP, and MAL programs.
- The language of the bill is subject to final rule and regulations that will be issued by USDA.

Note: Information for this report was obtained from the legislative language of the Agricultural Act of 2014, as signed by President Obama on February 7, 2014. This preliminary information is based on interpretation of the legislative text and is subject to final rule and regulation issued by USDA.

References

H.R.2642 - 113th Congress: Agriculture Reform, Food, and Jobs Act of 2013. Accessed March 13, 2014. <http://www.govtrack.us/congress/bills/113/hr2642>

University of Missouri. Food and Agricultural Policy Research Institute. "U.S. Baeline Briefing Book". FAPRI-MU Report No. 02-14. March 13, 2014.

USDA Farm Service Agency. "What's in the 2014 Farm Bill for Farm Service Agency Customers". 2014 Farm Bill Fact Sheet. March 2014

USDA NASS. Quick Stats. Accessed March 7, 2014. http://www.nass.usda.gov/Quick_Stats/Lite/



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Appendix

Example A1. Corn Production in Franklin Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for Franklin parish corn production. Corn that is produced on this farm in Franklin Parish, LA is ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (bu)	Estimated Corn MYA Price
2009	157.53	\$3.55*
2010	152.05	\$5.18
2011	174.26	\$6.22
2012	195.21	\$6.89
2013	188.85	\$4.50 (estimate)
* The reference price of \$3.70 is substituted in place of \$3.55 in the benchmark revenue calculation for the 2009 crop year.		

Crop Year	Estimated Parish Yield	Estimated Corn MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	186.11	\$4.17	\$776.06	\$919.76	\$791.02	Yes	\$12.72
2015	190.06	\$4.09	\$777.33	\$970.28	\$834.44	Yes	\$48.55
2016	188.34	\$4.07	\$766.54	\$934.79	\$803.92	Yes	\$31.77
2017	188.17	\$4.06	\$763.96	\$804.23	\$691.64	No	\$0.00
2018	188.85	\$4.04	\$762.97	\$774.54	\$666.11	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:

Previous five-year Olympic average for price = $\{(\$5.18 + \$6.22 + \$4.50) / 3\} = \5.30 per bushel

Previous five-year Olympic average for yield = $\{(157.53 + 174.26 + 188.85) / 3\} = 173.47$ bushels

Note: The five-year Olympic average will exclude the highest and lower values for the period.

2014 ARC Benchmark Revenue is equal to $(\$5.30 * 173.47) = \919.39 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$919.39)$ or \$790.68 per acre

The 2014 actual crop revenue is equal to: $(\$4.17 * 186.11) = \776.06 per acre

Since the ARC guarantee of \$790.68 is greater than the actual revenue of \$776.06 for the 2014 crop year, an ARC corn payment is triggered in Franklin Parish, LA.

The payment is equal to the following calculation:

$\{(\$790.68 - \$776.06) * 85\% \} = \$12.43$ per corn base acre in Franklin Parish, LA for 2014

These steps would then be repeated for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the

bill. Rounding to the nearest cent for this numeric exercise may result in 2014 crop year data not matching exact figures in the ARC tables for corn.

Example A2. Soybeans Production in East Carroll Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for East Carroll parish soybean production. Soybeans that are produced on this farm in East Carroll Parish, LA are ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (bu)	Estimated Soybean MYA Price
2009	46.80	\$9.59
2010	50.23	\$11.30
2011	44.02	\$12.50
2012	58.88	\$14.40
2013	59.35	\$12.70 (estimate)

Crop Year	Estimated Parish Yield	Estimated Soybean MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	54.09	\$9.84	\$532.20	\$632.30	\$543.78	Yes	\$9.84
2015	57.44	\$9.80	\$562.91	\$661.85	\$569.19	Yes	\$5.34
2016	56.96	\$9.68	\$551.36	\$663.46	\$570.57	Yes	\$16.33
2017	56.16	\$9.68	\$543.64	\$622.66	\$535.49	No	\$0.00
2018	56.85	\$9.77	\$555.46	\$555.65	\$477.86	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:

Previous five-year Olympic average for price = $\{(\$11.30 + \$12.50 + \$12.70) / 3\} = \12.17 per bushel

Previous five-year Olympic average for yield = $\{(46.80 + 50.23 + 58.88) / 3\} = 51.97$ bushels

Note: The five-year Olympic average will exclude the highest and lower values for the period.

2014 ARC Benchmark Revenue is equal to $(\$12.17 * 51.97) = \632.47 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$632.47)$ or \$543.92 per acre

The 2014 actual crop revenue is equal to: $(\$9.84 * 54.09) = \532.25 per acre

Since the ARC guarantee of \$543.92 is greater than the actual revenue of \$532.25 for the 2014 crop year, an ARC soybean payment is triggered in East Carroll Parish, LA.

The payment is equal to the following calculation:

$\{(\$543.92 - \$532.25) * 85\% \} = \$9.91$ per soybean base acre in East Carroll Parish, LA for 2014

These steps would then be repeated for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the

bill. Rounding to the nearest cent for this numeric exercise may result in 2014 crop year data not matching exact figures in the ARC tables for soybeans.

Example A3. Long Grain Rice Produced in Morehouse Parish, LA.

It is assumed in this analysis that the ARC program is selected at the county-level for Morehouse parish long grain rice production. Long grain rice that are produced on this farm in Morehouse Parish, LA is ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Crop Year	Parish Yield per planted acre (cwt)	Estimated Long Grain Rice MYA Price
2009	60.32	\$12.90*
2010	60.88	\$11.00*
2011	60.88	\$13.40*
2012	66.15	\$14.50
2013	76.67	\$14.88 (estimate)
* The reference price of \$14.00 is used to calculate benchmark revenue in the 2009, 2010, and 2011 crop years.		

Crop Year	Estimated Parish Yield	Estimated LG Rice MYA Price	Actual Crop Revenue	ARC Benchmark Revenue	ARC Guaranteed Revenue	Does Guarantee Exceed Actual?	ARC Payment per Base Acre
2014	67.90	\$14.81	\$1,005.58	\$887.37	\$763.11	No	\$0.00
2015	70.24	\$13.67	\$960.16	\$938.03	\$806.71	No	\$0.00
2016	71.60	\$13.73	\$983.08	\$983.07	\$845.44	No	\$0.00
2017	69.91	\$13.70	\$957.80	\$1,009.31	\$868.00	No	\$0.00
2018	70.58	\$13.67	\$964.88	\$1,007.24	\$866.22	No	\$0.00

Benchmark revenue for the 2014 crop year is calculated using the following methodology:

Previous five -year Olympic average for price = $\{(\$14.00 + \$14.00 + \$14.50) / 3\} =$
\$14.17 per hundredweight

Previous five-year Olympic average for yield = $\{(60.88 + 60.88 + 66.15) / 3\} = 62.61$ hundredweight

Note: The five-year Olympic average will exclude the highest and lower values for the period.

2014 ARC Benchmark Revenue is equal to $(\$14.17 * 62.61) = \887.18 per acre

The 2014 ARC guarantee is equal to $(0.86 * \$887.18)$ or \$762.97 per acre

The 2014 actual crop revenue is equal to: $(\$14.81 * 67.90) = \$1,005.58$ per acre

Since the ARC guarantee of \$762.97 is less than the actual revenue of \$1,005.58 for the 2014 crop year, an ARC long grain rice payment is not triggered for Morehouse Parish, LA.

In years that ARC payment criteria is met, the payment per rice base acre is equal to the amount that the ARC guarantee exceed the actual revenue multiplied by a factor 0.85. These steps would then be repeated

for each of the 2015, 2016, 2017, and 2018 crop years remaining in the current farm bill. The decision to participate in the ARC program is irrevocable for the duration of the bill. Rounding to the nearest cent for this numeric exercise may result in 2014 crop year data not matching exact figures in the ARC tables for long grain rice.

For long grain rice produced in Morehouse parish, no ARC program payments are triggered since the revenue criteria is not met. However, the opposite is true for the PLC program given the FAPRI price projections employed in this analysis. Payments for long grain rice in Morehouse parish would be: \$0.00 in 2014; \$15.60 in 2015; \$12.76 in 2016; \$14.18 in 2017; and \$15.60 in 2018 per rice base acre assuming that the producer elects to participate in the PLC program and not ARC for long grain rice for the specific farm. (This assumed that the landowner would elect to update the PLC program yield to 55.60 hundredweight.)

Example A4. ARC Payment Rate Tables for Corn in Selected Parishes- Constant Yield Level.

It is assumed in this analysis that the ARC program is selected at the county-level for each parish identified in the tables below. The yield per planted acre represents the previous three-year average (2011-13) for each parish as reported by USDA NASS. The corresponding yield level per parish is held constant for the 2014 through 2018 crop years. MYA prices are those reported in the FAPRI March 2014 baseline, as used in the preceding examples. ARC program revenue calculations follow the same methodology as illustrated in the previous examples. Corn that is produced on these farm are ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Tensas Parish Yield	Franklin Parish Yield	Morehouse Parish Yield	East Carroll Parish Yield	Rapides Parish Yield	Avoyelles Parish Yield
153.30	186.10	169.84	161.80	153.14	149.96

Parish	Corn ARC Program Payment per Base Acre per Crop Year				
	2014	2015	2016	2017	2018
Tensas	\$0.08	\$41.90	\$43.53	\$0.00	\$0.00
Franklin	\$12.74	\$62.29	\$34.73	\$0.00	\$0.00
Morehouse	\$33.33	\$59.86	\$31.15	\$0.00	\$0.00
East Carroll	\$25.89	\$71.29	\$43.36	\$0.00	\$0.00
Rapides	\$14.64	\$50.07	\$34.00	\$0.00	\$0.00
Avoyelles	\$12.31	\$32.59	\$31.53	\$0.00	\$0.00

Example A5. ARC Payment Rate Tables for Soybeans in Selected Parishes- Constant Yield Level.

It is assumed in this analysis that the ARC program is selected at the county-level for each parish identified in the tables below. The yield per planted acre represents the previous three-year average (2011-13) for each parish as reported by USDA NASS. The corresponding yield level per parish is held constant for the 2014 through 2018 crop years. MYA prices are those reported in the FAPRI March 2014

baseline, as used in the preceding examples. ARC program revenue calculations follow the same methodology as illustrated in the previous examples. Soybeans that are produced on these farm are ineligible to receive PLC program support or purchase the Supplemental Coverage Insurance Option (SCO) since ARC is selected. Commodity program participation (e.g. ARC) is a decision that is made by all producers on the farm.

Tensas Parish Yield	Franklin Parish Yield	Morehouse Parish Yield	East Carroll Parish Yield	Rapides Parish Yield	Avoyelles Parish Yield	Acadia Parish Yield
47.19	41.56	51.07	54.08	45.19	40.44	34.89

	Soybean ARC Program Payment per Base Acre per Crop Year				
Parish	2014	2015	2016	2017	2018
Tensas	\$0.00	\$7.73	\$29.24	\$0.00	\$0.00
Franklin	\$7.56	\$11.00	\$21.47	\$0.00	\$0.00
Morehouse	\$0.00	\$13.08	\$11.93	\$0.00	\$0.00
East Carroll	\$9.89	\$33.31	\$30.44	\$0.00	\$0.00
Rapides	\$21.21	\$31.88	\$27.19	\$0.00	\$0.00
Avoyelles	\$19.56	\$41.98	\$27.94	\$0.14	\$0.00
Acadia	\$6.44	\$15.22	\$13.90	\$0.00	\$0.00