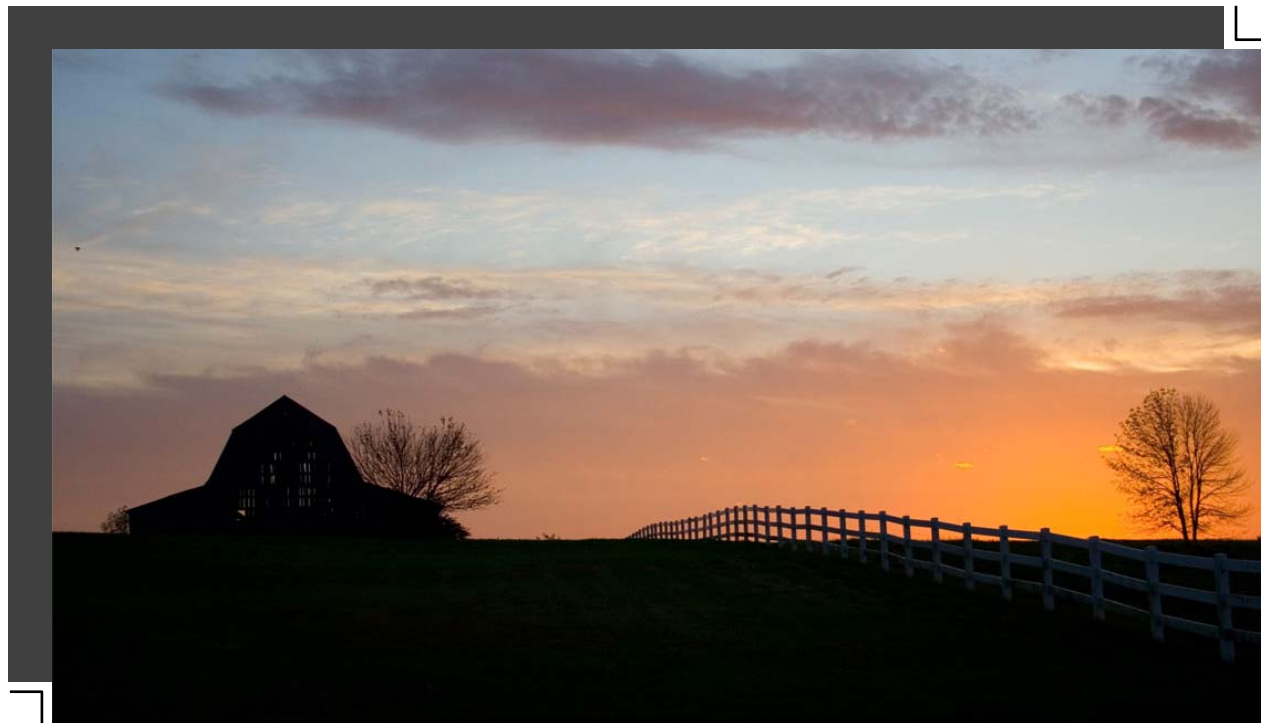


FAPRI ACRE Risk Management Tool (FARM Tool) Users' Guide

Updated for 2010

Version 3.0

FAPRI-MU Report #03-10



Food and Agricultural Policy Research Institute
College of Agriculture, Food and Natural Resources
University of Missouri

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Contents

I. Introduction	4
II. Program description.....	4
III. ACRE Simulation.....	7
IV. System requirements.....	7
V. Input.....	8
Menu buttons	8
State, Farm name, Crops, and Payment limits.....	9
Historical yields	10
Projected yields.....	10
Program information	11
Expected planted acres and Payment acres	11
Price projections	12
VI. Results	13
Average payments	13
Probability of receiving an ACRE payment or not receiving an ACRE payment.....	14
Probability total payments with ACRE participation are greater than Non-ACRE participation	14
Cumulative Distribution of Payments (Chart).....	15
Average payments under each option.....	18
Dollars per acre in ACRE.....	18
Maximum price that will trigger payments in 2010 with trend yields.....	19
Probability of Payments and Triggers	19
Farm revenue (chart)	20
2009 Results.....	20

I. Introduction

The Average Crop Revenue Election (ACRE) program is a new program introduced in the Food, Conservation and Security Act of 2008 (2008 Farm Bill). It is intended to serve as a counter-cyclical revenue program. In other words, the program is aimed at providing supplemental income to agricultural producers in years of low revenues. In contrast to Counter-Cyclical Payments (CCPs) which only focus on prices, the program targets both yield and price risk.

Participation in the program is optional, but participants must forego all CCPs, 20% of their Direct Payments (DPs), and accept 30% lower loan rates. The program is not “free” to producers in that there is a cost to giving up payments. However, ACRE has the potential to be quite beneficial. It is difficult to make generic statements about who should opt in the program and who should stay out. Decision aides that simulate risk and payments such as the FARM Tool provide insight into the uncertainty and potential benefits of the program. However, caution should be exercised when analyzing the results as there is a chance that the ACRE program will never trigger payments.

II. Program description

As aforementioned, participation in the ACRE program is optional. To enroll, producers on a farm must first elect the ACRE option. This irrevocable step puts the farm in the program for the life of the farm bill (through 2012). If no decision is made, the farm stays in the traditional Direct and Counter-Cyclical program. However, producers can elect into the program in any year of the farm bill. Following election, producers will have to make a decision annually whether to enroll in the current year’s contract. If a farm is enrolled in ACRE, it must forego all Counter-Cyclical Payments, 20% of direct payments, and accept a 30% reduction in loan rates. However, if a farm elects into ACRE and does not enroll in the current year’s contract, it will not receive ACRE or DPs. It should still receive LDPs, but it is not clear at this point if the loan rate will be reduced by 30%.

The decision to enroll is made on an FSA farm unit basis. The entire farm unit is either in or out. In other words, you can’t pick and choose crops. However, the decision is independent for each farm unit. You can pick and choose which of your farms you want (or don’t want) to enroll.

Two criteria must be met to trigger ACRE payments for a crop.

- 1) State revenue must be below the ACRE state revenue guarantee and
- 2) Farm revenue must be below the ACRE farm benchmark revenue.

The ACRE state guarantee is calculated as the:

$$\begin{aligned} & \text{(average of the national average market price for the past two years)} \\ & \times \text{(five year Olympic average}^1 \text{ yield per planted acre}^2 \text{ in the state for the crop)} \\ & \times .9. \end{aligned}$$

The ACRE farm benchmark revenue is calculated as the:

$$\begin{aligned} & \text{(average of the national average marketing price for the past two years)} \\ & \times \text{(five year Olympic average yield per planted acre on the farm for the crop)} \\ & + \text{(the crop insurance premium paid for the crop)}. \end{aligned}$$

The state revenue is calculated as the:

$$\begin{aligned} & \text{higher of:} \\ & \quad \text{(national average marketing price for the crop during the year) and} \\ & \quad \text{(70\% of the loan rate for the crop)} \\ & \times \text{(average state yield per planted acre for the crop)}. \end{aligned}$$

The farm revenue is calculated as the:

$$\begin{aligned} & \text{higher of:} \\ & \quad \text{(national average marketing price for the crop during the year) and} \\ & \quad \text{(70\% of the loan rate for the crop)} \\ & \times \text{(average farm yield per planted acre for the crop)}. \end{aligned}$$

If both criteria are met, payments are triggered for the farm. Payments are calculated as:

$$\begin{aligned} & \text{The lesser of:} \\ & \quad \text{(25\% of the ACRE state revenue guarantee)} \\ & \quad \text{or ((the ACRE state revenue guarantee) – (the state revenue))} \\ & \times \text{(five year Olympic average yield per planted acre on the farm for the crop)} \\ & \div \text{(five year Olympic average yield per planted acre in the state for the crop)} \\ & \times \text{(payment acres)}. \end{aligned}$$

Several caveats must be appended to the formulas. Each crop is calculated separately. As a result, some crops may trigger payments while others do not. Payment acres are 83.3% of planted acres for 2009-20011, 85% in 2012. Total payment acres cannot exceed total base acres for the farm. If this should occur, producers will have to specify which crops to deduct payment acres from until the previous condition is met. Total ACRE and CCP payments per person or legal entity cannot exceed \$65,000 plus the amount that DPs are reduced. Last of all, the state ACRE revenue guarantee is not allowed to change by more than 10% per year in 2010 through 2012.

The following is a hypothetical example for corn for a Missouri farm. Payments for the other crops on the farm would be calculated in a similar manner.

¹ An Olympic average is an average excluding the minimum and maximum values. In this case, the high and low yields are dropped and the other three are averaged.

² Yield per planted acre is defined as total production divided by the sum of harvested and failed acres. It does not account for silage production.

STATE BENCHMARK REVENUE CALCULATION	2005	2006	2007	2008	2009	Average
MO corn yield/pltd acre	111	138	137	140	152	
Olympic average		138	137	140		138.3
US price per bushel				\$4.06	\$3.60	\$3.83
MO revenue						\$529.69
MO revenue guarantee with 10% adjustment						\$476.72

The 2009 state benchmark was \$514.19 per acre for corn. A 10% decrease from this would be \$462.77 per acre. The \$476.72 is within the allowable 10% movement of the state benchmark.

2010 STATE ACTUAL REVENUE CALCULATION	2010 Yield	2010/11 US Price	2010 Revenue
	120	\$3.50 ³	\$420

In this example, the state level trigger is met. The state payment rate is \$476.72 - \$420.00 = \$56.72⁴.

FARM REVENUE GAURANTEE CALCULATION	2005	2006	2007	2008	2009	Average
Farm yield	130	100	140	135	170	135.0
Olympic average	130		140	135		135.0
U.S. average price				\$4.06	\$3.60	\$3.83
Farm revenue						\$517.05
Farm revenue guarantee with \$25.00 crop insurance						\$542.05

2010 FARM ACTUAL REVENUE CALCULATION	2010 Yield	2010/11 US Price	2010 Revenue
	150	\$3.50 ³	\$525

In this example, the farm level trigger is met. The farm payment rate is \$56.72 × 135.0/138.3× (payment acres for corn). The size of the farm loss does not matter in the payment calculations for the current year. The farm only needs to show a loss. On the

³ \$3.50 is greater than 70% of the corn loan rate (.70 × \$1.95 = \$1.365), so \$3.50 is used.

⁴ \$56.72 is less than 25% of the State Benchmark Revenue (.25 × \$476.72=\$119.18), so \$56.72 is used.

other hand, if the state did not trigger, a 0 farm yield would not trigger payments since both the farm and state must show a loss.

III. ACRE Simulation

The FARM Tool uses a unique and insightful approach to addressing the ACRE participation question. This tool provides two advantages over deterministic ACRE calculations per crop. First, the ACRE decision is made on a FSA farm basis, so the tool needs to provide whole farm analysis. Second, the ACRE program is all about risk. As a result, the tool needs to incorporate risk into its calculations.

To meet these two objectives, we use farm yield, state yield, and national price distributions for each crop. Each distribution is correlated to the other distributions to preserve the interactions between prices and yields. 500 random draws are made from each distribution and the iterated yields and prices are used to calculate farm revenue, ACRE payments, CCPs, and LDPs. From these results, we have distributions of the effects of participating versus not-participating in ACRE.


IV. System requirements

The FARM Tool can only operate in Microsoft Excel 2003 and Excel 2007. Macros must be enabled. To enable macros in:

Excel 2003:

Go to **Tools\Macro\Security** and choose Medium or Low.

Excel 2007:

Click the **Microsoft Office Button** , and then click **Excel Options**. In the Trust Center category, click **Trust Center Settings**, and then click the **Macro Settings** category. Select **Disable All Macros with Notification**.

You must restart Excel for these changes to take effect.

The right side of the input screen displays the status of macro enablement. Green means that macros are enabled and red means they are disabled.

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FAPRI ACRE Risk Management Tool (FARM Tool)


version 3.0
[About this spreadsheet...](#)

Clear input
Save input
Recall input
Run

Input cells are light blue

State

Name or FSA farm number

Crops
Click the crops you raise and/or have base acres for

<input checked="" type="checkbox"/> Corn	<input checked="" type="checkbox"/> Soybeans	<input type="checkbox"/> Cotton
<input type="checkbox"/> Long grain rice	<input checked="" type="checkbox"/> Wheat	<input type="checkbox"/> Grain sorghum

Macros Enabled 

Macros must be enabled to run this spreadsheet.

To enable macros:

Excel 2003- go to Tools(Macro)\Security and choose Medium or Low.

Excel 2007- Click the Microsoft Office Button, , and then click Excel Options. In the Trust Center category, click Trust Center Settings, and then click the Macro Settings category. Select Disable All Macros with Notification.

You must restart Excel and allow macros/enable Active content.

V. Input

Menu buttons

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 version 3.0
[About this spreadsheet...](#)

FAPRI ACRE Risk Management Tool (FARM Tool)

Clear input Save input Recall input Run

Input cells are light blue

State
 Missouri

Name or FSA farm number
 Sample farm

Crops
 Click the crops you raise and/or have base acres for

<input checked="" type="checkbox"/> Corn	<input checked="" type="checkbox"/> Soybeans	<input type="checkbox"/> Cotton
<input type="checkbox"/> Long grain rice	<input checked="" type="checkbox"/> Wheat	<input type="checkbox"/> Grain sorghum

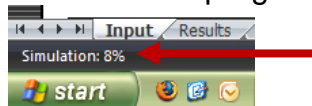
Macros Enabled
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 Excel 2007- Click the Microsoft Office Button, and then click Excel Options. In the Trust Center category, click Trust Center Settings, and then click the Macro Settings category. Select Disable All Macros with Notification.
 You must restart Excel and allow macros/enable Active content.

Clear input: This button will delete all of the current input. It is useful if you want to start inputting another farm.

Save input: This button saves the current input as well as the spreadsheet. This is useful if you want to enter a new farm but also want to be able to work with the current farm later. There is no limit to the number of farms that can be saved.

Recall input: This button manages farms that have been saved. You can recall previous input or delete previous input.

Run: After you have finished entering all the data, click the 'Run' button. The FARM Tool will simulate based on your input and will take you to the results when it is finished. The progress can be seen in the lower left corner of Excel.



*State, Farm name, Crops, and Payment limits***State**

Name or FSA farm number

Crops

Click the crops you raise and/or have base acres for

<input checked="" type="checkbox"/> Corn	<input checked="" type="checkbox"/> Soybeans	<input type="checkbox"/> Cotton
<input type="checkbox"/> Long grain rice	<input checked="" type="checkbox"/> Wheat	<input type="checkbox"/> Grain sorghum

State: Six states (Illinois, Indiana, Iowa, Minnesota, Missouri, and Ohio) are currently available from which to choose. Upon selecting a state, all current input will be cleared.

Farm name: Choose a unique farm name or FSA number for each farm. This is used to identify the farm if it is saved and recalled later.

Crops: Up to six non-irrigated crops are available. However, a crop can only be selected if it has significant acres in the state chosen. This determination is made on the basis of whether the USDA reports the data for the crop in the state. Selecting a crop will display areas for information about the crop to be entered. Unselecting a crop clears all the data entered for the crop and removes the areas for that crops input.

Historical yields

Historical state yields per planted acre

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corn, bu	97	143	132	105	108	161	111	138	137	140	152
Soybeans, bu	27	35	38	34	29	45	37	38	38	37	43
Wheat, bu	46	51	53	41	62	51	52	53	40	47	45

Historical yields per planted acre for your farm

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corn, bu	136	155	171	124	133	184	174	176	161	157	170
Soybeans, bu	40	48	47	39	29	48	47	39	42	41	48
Wheat, bu	60	55	53	58	62	66	60	68	63	62	60

All yields used in ACRE calculations are per **planted** acre. Entering yields on a per harvested acre basis will generate incorrect results. The first set of historical yields is simply a display of the historical state yields. Nothing needs to be entered there. The second part is for the user to enter his or her historical yields per planted acre. If a crop on the farm had a zero yield one year, enter a 0. Do not leave the cell blank. If a farm does not have 11 years of historical data, the next best option is to replace the missing data with yields from a neighboring farm. The last, but least preferable, option is to look up the county yields and replace the missing values with the county's. County yields can be found at http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/.

Projected yields

Projected trend yields per planted acre

	Farm yields			State yields		
	2010	2011	2012	2010	2011	2012
Corn, bu	174	177	180	148	152	155
Soybeans, bu	43	44	44	42	43	44
Wheat, bu	65	65	66	49	49	49

User defined projected yields

(the above values will be used if left blank)

	Farm yields			State yields		
	2010	2011	2012	2010	2011	2012
Corn, bu						
Soybeans, bu						
Wheat, bu						

The top set of yields is calculated based upon the historical data entered by the user. They can be overridden by entering values into the 'User defined projected yields.' Only the crop/year that has a value entered will override the defaults. If a cell is left blank, the projected trend yield will be used for that crop/year.

Program information

	Program information			2010 crop insurance
	Base acres	CCP yield	DP yield	premium per acre
Corn	700	106	106	35
Soybeans	1175	33	33	22
Wheat	200	51	51	12
Total	2075			

Enter the appropriate information about your FSA farm into this section. Only the crops selected will have space to enter information. However, crops can be added at any time to allow its information to be added. The base acres are totaled so the user can compare planted acres to base acres. If crop insurance premiums are not known, they can be calculated at

http://www.farmdoc.uiuc.edu/cropins/cropinstoolsmain2_spring_2009.asp?num=1.

Expected planted acres and Payment acres

Expected planted acres

	2009	2010	2011	2012
Corn	690	690	690	690
Soybeans	1410	1410	1410	1410
Wheat	200	200	200	200
Total	2300	2300	2300	2300

Maximum payment acres per crop

	2009	2010	2011	2012
Corn	574.77	574.77	574.77	586.50
Soybeans	1,174.53	1,174.53	1,174.53	1,198.50
Wheat	166.60	166.60	166.60	170.00
Total	1,915.90	1,915.90	1,915.90	1,955.00

Payment acres

Total payment acres are the lesser of 83.3% (85% in 2012) of total planted acres or total base acres. Use the maximum payment acres above as the ceiling for each crop's actual payment acres.

	2009	2010	2011	2012
Corn	574.77	574.77	574.77	586.50
Soybeans	1174.53	1174.53	1174.53	1198.50
Wheat	166.60	166.60	166.60	170.00
Total	1,916	1,916	1,916	1,955

Calculate payment acres

Clicking this button will calculate a starting point for your farms payment acres. If your max pmt. acres exceed your base acres, you will have the option to adjust your payment acres.

The expected planted acres are simply the number of acres the user anticipates planting to each crop in each year on the FSA farm. The total acres planted on the farm are calculated under each column.

Maximum payment acres per crop cannot exceed 83.3% of planted acres (85% in 2012) for each crop.

Payment acres, the amount you will get paid on, are 83.3% (85% in 2012) of total planted acres. Total payment acres cannot exceed total base acres. If this should

occur on your FSA farm unit, you will have the ability to choose how many acres you allocate to each crop up to the maximum for each crop. After entering your Expected planted acres, press the calculate payment acres button. This is a starting point for your actual payment acres. You can adjust them up to the maximum payment acres per crop that is calculated by the FARM Tool.

Price projections

FAPRI price projections (January 2010 baseline)

	2008	2009	2010	2011	2012
Corn, \$/bu	4.06	3.60	3.72	3.82	3.85
Soybeans, \$/bu	9.97	9.43	8.89	9.31	9.55
Wheat, \$/bu	6.78	4.92	4.61	4.79	4.89

USDA April 2010 WASDE: 2009 Price Projections

Mid-point	Range
3.60	3.50 - 3.70
9.45	9.20 - 9.70
4.90	4.85 - 4.95

Your price projections

Enter your estimate for future prices. If you leave a cell or cells blank, the FAPRI prices above will be used in those blanks.

	2008	2009	2010	2011	2012
Corn, \$/bu					
Soybeans, \$/bu					
Wheat, \$/bu					

The FAPRI price projections through 2012 are the default prices used by the FARM Tool. However, if the user would like to use a different price path, they may override the FAPRI prices by entering their own in 'Your price projections.' Any crop/years left blank in that section will use the FAPRI price. The WASDE 2010 prices are provided as a reference.

VI. Results

Average payments

Average payments	<input type="radio"/> Total <input checked="" type="radio"/> Per planted acre			
	2010	2011	2012	Total
Acre participation				
ACRE payments	11.83	7.34	7.45	26.61
Loan deficiency payments	0	0	0.00	0.00
Direct payments	12.50	12.50	12.75	37.75
<i>Total payments</i>	24.33	19.84	20.20	64.37
ACRE non-participation				
Counter-cyclical payments	0.14	0.21	0.36	0.71
Loan deficiency payments	0.02	0.16	0.14	0.32
Direct payments	15.62	15.62	15.94	47.19
<i>Total payments</i>	15.78	16.00	16.44	48.22
Net change (ACRE-Non)	8.55	3.84	3.76	16.15
Foregone payments	3.28	3.50	3.69	10.47

The first section of output shows the average of 500 simulations for each program. The results should be viewed as an expectation but not a guarantee. There is uncertainty surrounding future prices and yields, so **results should be viewed with this in mind.**

Average payments can be viewed as the totals for the farm or by per planted acre. The programs are grouped by ACRE-participation and ACRE non-participation. Each is summed and the two are differenced in the 'Net change' line in blue. The 'Foregone payments' in the blue section is the expected DPs, CCPs, and LDPs given up to join the ACRE program.

Probability of receiving an ACRE payment or not receiving an ACRE payment

Probability of receiving an ACRE payment or not receiving an ACRE payment

The following probabilities show the risk of a producer (not) receiving ACRE payments in the future.

Probability	<input checked="" type="radio"/> of receiving an ACRE payment <input type="radio"/> of not receiving an ACRE payment			
	2010	2011	2012	Total*
Corn	21.4%	14.6%	16.8%	47.0%
Soybeans	27.0%	18.0%	15.4%	52.0%
Wheat	81.4%	41.6%	30.6%	94.0%
Total	82.6%	48.8%	39.4%	

**Probability of receiving at least one payment over the four years*

This section demonstrates the fact that ACRE payments are uncertain. This can either be viewed as the probability of receiving an ACRE payment or the probability of not receiving an ACRE payment by using the option buttons. The bottom line shows the probability of the farm receiving an ACRE payment from any crop for the year given the assumptions in the input (such as price and yield paths).

Probability total payments with ACRE participation are greater than Non-ACRE participation

Probability total payments with ACRE participation are greater than Non-ACRE participation

This table shows how often total payments for a producer participates in the ACRE program will have higher payments than if they elect to not enroll in ACRE.

	2010	2011	2012	Total*
	67.6%	37.6%	29.6%	64.2%

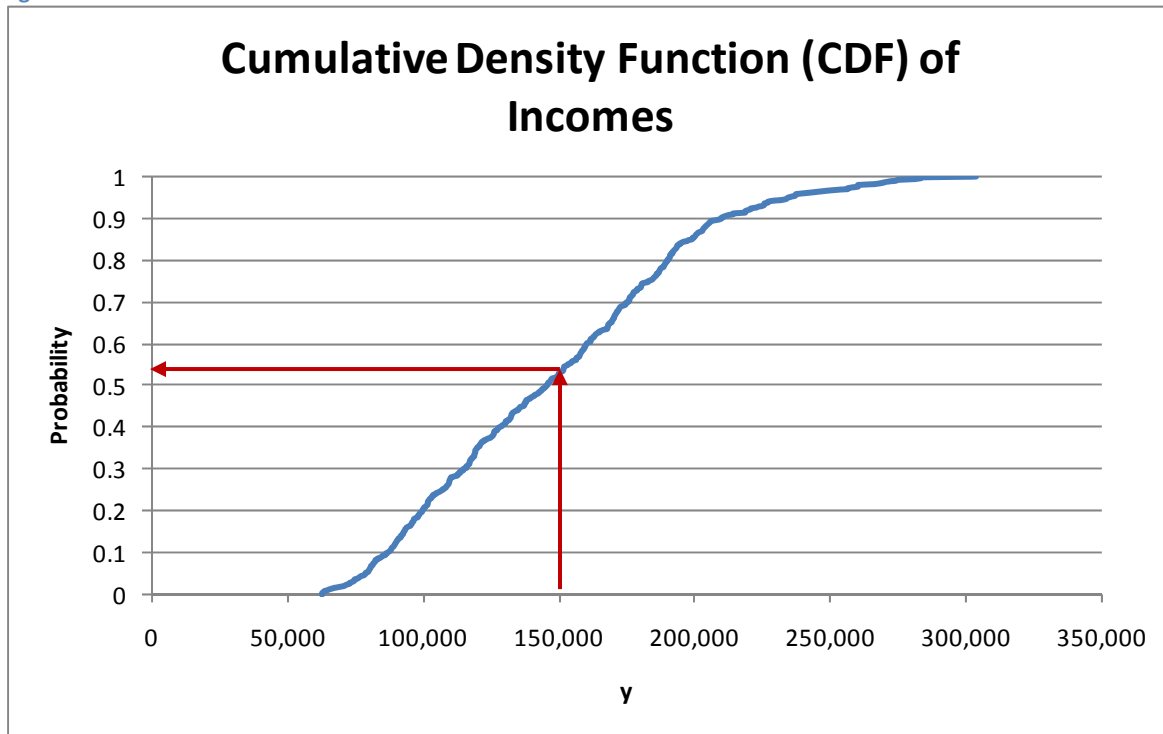
**Probability that ACRE participation payments are higher over the four years than ACRE non-participation payments.*

This table shows the probability that the farm is better off in the ACRE program. The total column on the right is for the four years.

Cumulative Distribution of Payments (Chart)

A cumulative density function is the probability that an observation is less than or equal to a value (y).

Figure 1

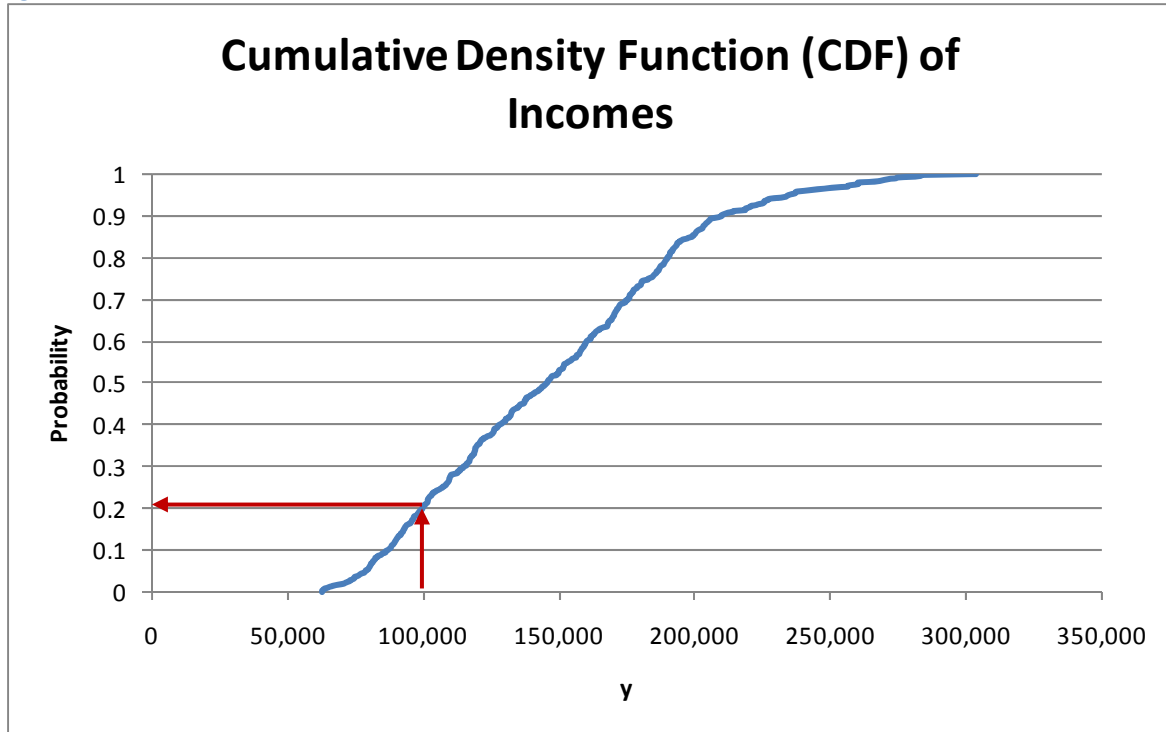


For example, please consider the above chart (Figure 1). If we want to know the probability of getting up to \$150,000, start at the horizontal axis at the \$150,000 label. Go up until you intersect the blue line. Now, go left to the vertical axis. The value is the probability of getting \$150,000 or less. So, the chance of getting up to \$150,000 is 52%.

Similarly, we can find the probability of getting \$150,000 or more. The probabilities of all observations must sum to one, so the probabilities of getting up to \$150,000 and more than \$150,000 must add up to one. As a result, the chance of getting more than \$150,000 is one minus the probability of less than \$150,000. This is $1 - .52 = .48$ or 48%.

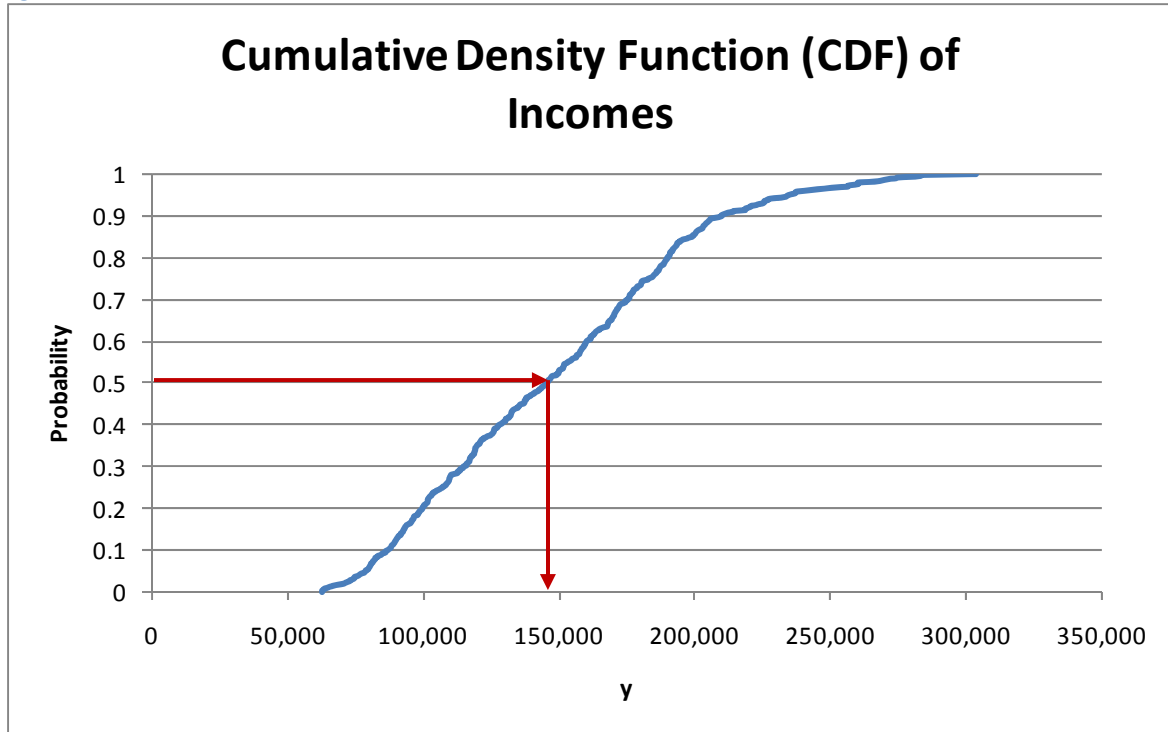
However, what if we are not interested in the probability of less than \$150,000 but instead want to know the probability of between \$100,000 and \$150,000? A CDF can reveal the solution. Consider the following chart (Figure 2). The probability of getting \$100,000 or less is 20%. We already know that the probability of getting less than \$150,000 is 52%. Therefore, we can subtract the probability of getting less than \$100,000 from the probability of getting less than \$150,000. This is $.52 - .20 = .32$ or 32%. So, there is a 32% chance of between \$100,000 and \$150,000.

Figure 2



A CDF can also be used to determine the expected value (average) of an outcome. The 50% probability corresponds to the expected value. We simply start at .5 on the vertical axis and go right to the blue line. Then, we trace our way down to the horizontal axis. This is our expected value. On the following chart (Figure 3) the expected value is slightly less than \$150,000.

Figure 3



When deciding which is better between two CDFs, there are two main points of comparison. The first is which CDF is closest to a vertical line. This indicates less risk. The other point of comparison is which CDF is further to the right. In the case of income, the CDF on the right has a higher expected income.

Average payments under each option

Average payments under each option				Average payments under each option			
ACRE participation				Non-ACRE participation			
	2010	2011	2012		2010	2011	2012
ACRE Payments				Counter-cyclical payments			
Corn	6,790	4,539	6,246	Corn	0	89	174
Soybeans	11,977	8,571	8,438	Soybeans	138	186	434
Wheat	8,444	3,766	2,443	Wheat	183	210	216
Total	27,211	16,876	17,127	Total	321	486	824
Loan deficiency payments				Loan deficiency payments			
Corn	0	0	0	Corn	0	0	0
Soybeans	0	0	0	Soybeans	47	348	291
Wheat	0	0	4	Wheat	0	22	32
Total	0	0	4	Total	47	370	323
Direct payments				Direct payments			
Corn	13,845	13,845	14,128	Corn	17,306	17,306	17,660
Soybeans	11,369	11,369	11,601	Soybeans	14,212	14,212	14,502
Wheat	3,535	3,535	3,607	Wheat	4,418	4,418	4,508
Total	28,749	28,749	29,336	Total	35,936	35,936	36,670
Total payments (ACRE)	55,960	45,625	46,466	Total payments (Non-ACRE)	36,304	36,792	37,817
Net change (ACRE-Non)	19,656	8,832	8,649				

The average payments under each option are the mean of the 500 simulations broken out by crop and payment. The left side is the result if the farm elects and enrolls in ACRE. The right is if the farm stays under the traditional program. The gray lines are the subtotals and blue are totals. The very bottom row is the average difference between the two programs.

Dollars per acre in ACRE

Dollars per acre in ACRE			
	2010	2011	2012
Average per crop in ACRE			
Corn	11.81	7.90	10.65
Soybeans	10.20	7.30	7.04
Wheat	50.68	22.60	14.37
Average ACRE payment	14.20	8.81	8.76
Average payments foregone	3.94	4.20	4.34

Dollars per acre in ACRE show which crop has the highest expected payments per acre in the ACRE program. If you have more planted than base acres and must allocate crop acres in the ACRE program, this chart can help you decide which crops to allocate acres to first. In the case above, this producer would probably want to enroll the acres for 2009 in wheat first, leaving the rest between corn and soybeans. The average

ACRE payment sums the crops and compares it to the average payments foregone per planted acre in ACRE.

Maximum price that will trigger payments in 2010 with trend yields

Maximum price that will trigger payments in 2010 with trend yields

	State	Farm	Total
Corn, \$/bu	3.21	3.89	3.21
Soybeans, \$/bu	7.78	10.19	7.78
Wheat, \$/bu	5.44	5.75	5.44

The minimum price needed to trigger a payment is the benchmark revenue divided by the trend yield. If actual yield varies from trend yield, the necessary price will change. The first column is the necessary price to trigger state payments, and the second column is the necessary price to trigger farm payments. Since both triggers must be met to receive a payment, the third column contains the lower of the two prices, which is necessary to get a payment.

Probability of Payments and Triggers

Probability of Payments and Triggers

This table shows the probability of the farm receiving an ACRE payment if State actual revenue is less than the State ACRE Guarantee.

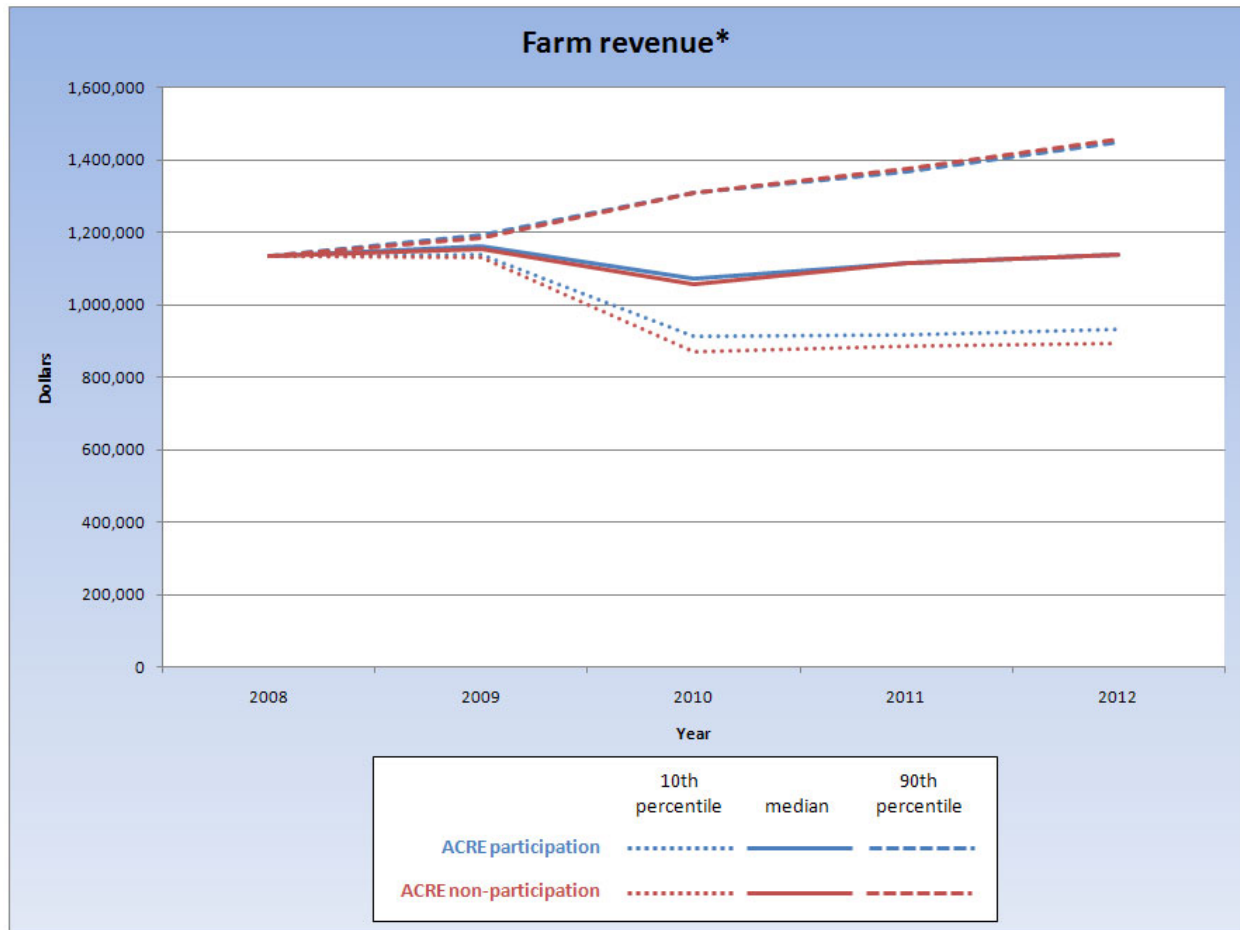
	2010	2011	2012
Corn	99.0%	98.6%	93.3%
Soybeans	99.0%	97.8%	99.0%
Wheat	98.1%	73.0%	78.9%

This table shows the probability that the state will trigger a payment if the farm triggers a payment.

	2010	2011	2012
Corn	32.2%	30.5%	37.7%
Soybeans	33.4%	32.3%	28.9%
Wheat	88.7%	80.9%	69.9%

The table on the left shows the probability of the farm receiving an ACRE payment if state actual revenue is less than the state ACRE guarantee. The table on the right shows the probability that the state will trigger a payment if the farm triggers a payment. These tables show how having two criteria for payments affects the odds of actually getting paid. In general, the table on the left should have higher values than the one on the right since the crop insurance premium is added to the farm benchmark revenue while the state guarantee is reduced by 10%. As a result, the farm level criteria should be met a higher percentage of the time than the state criteria.

Farm revenue (chart)



*Total farm revenue in this case is market receipts plus government payments. It does not include crop insurance indemnities.

This chart demonstrates the effects of ACRE participation on farm revenue. ACRE participation is represented by the blue lines, and ACRE non-participation is represented by the red lines. The barred, solid, and dotted lines correspond to the 90th, 50th, and 10th percentiles⁵, respectively. In practical terms, this corresponds roughly to a good outcome, average outcome, and poor outcome. In the chart above, the good years are basically equal between ACRE participation and ACRE non-participation. ACRE may be slightly better on an average year. However, in a poor year, ACRE participation is better than ACRE non-participation.

2009 Results

The last page lists an assortment of some of the previous tables with only the 2009 results. The page is intended to give a “what would have been if the farm was enrolled in ACRE” scenario. There is a small amount of variability in 2009 as the marketing seasons are not over which gives some variability to the prices.

⁵ A percentile is a value below which a specified percentage of the observations fall. For example, the 70th percentile is the value below which 70 percent of the observations are found.