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Introduction

The Food and Agricultural Policy Research Institute (FAPRI) has examined selected provisions of Title I of the “Food and Energy Security Act of 2007,” as approved by the Senate Committee on Agriculture, Nutrition and Forestry. The analysis compares results for US agricultural markets under three alternative scenarios:

- 1) **Baseline.** The FAPRI stochastic baseline prepared in early 2007 serves as the point of comparison for the analysis.
- 2) **Selected Title I, No ACR** scenario. The scenario assumes the changes in target prices and loan rates for the major program commodities included in Title I of the Committee bill. It also includes the county-level equalization of corn and sorghum loan rates, and the new program to make payments to US users of cotton.
- 3) **Selected Title I, with ACR** scenario. The scenario includes all of the provisions of the previous scenario, but also includes the Average Crop Revenue (ACR) program, as approved with amendments by the Committee.

The ACR program makes payments to farmers when a calculation of state-level revenues per acre for an eligible crop falls below a moving trigger. Producers must decide whether to participate in the ACR program for all crops or stay with the traditional program. ACR participants agree to forego nonrecourse loans, direct payments and countercyclical payments (CCP’s).

Based on estimates of likely producer payments under the options, we assume that producers accounting for 70 percent of base acreage for wheat, barley, oats and sunflowers would choose to participate in the ACR program. For soybeans, we assume a 60 percent participation rate, and for corn and sorghum the assumed participation rate is 50 percent. Because estimated ACR payments are much lower than traditional program payments for upland cotton, rice, and peanuts, we assume no participation in the program by producers of those commodities.

The analysis also incorporates very important shifts in the timing of certain payments. In the **Selected Title I, No ACR** scenario, advanced direct payments are prohibited effective with the 2012/13 crop and the timing of CCP’s is also altered. Both changes have the effect of pushing expenditures that would have occurred in FY 2012 to FY 2013 and beyond. The ACR becomes available for the 2010/11 crop year, but no payments under the program are made to producers until FY 2012.

Results in the accompanying tables represent average results across 500 stochastic outcomes. The stochastic outcomes reflect a range of assumptions about crop yields, export demand, and other factors that affect commodity supply, demand and prices. The ACR and traditional programs only make certain payments when prices or revenues are below trigger levels. With a few exceptions, these programs do not make payments under average conditions, but only when prices or revenues are below average. The payment rates and government costs reported here are averages of many stochastic outcomes where payments under the various programs are zero, and other outcomes where they payments may be quite large. Even when averages appear similar across scenarios, the scenarios may differ significantly in the combinations of market conditions that do or do not result in payments.

Summary of key results

Under the **Selected Title I, No ACR** scenario, most changes from baseline values are modest.

- Net farm program expenditures decline by approximately \$0.8 billion over the FY 2008-FY 2012 period (Table 1). Higher loan rates and target prices for several commodities increase government spending, as does the new cotton user payment program. However, outlays actually decline slightly over the five-year period because of changes in the timing of payments. Eliminating authority for advanced direct payments and CCP's has the effect of shifting payments out of the FY 2008-FY 2012 budget window.
- Impacts on commodity markets are modest. Wheat production increases slightly in response to higher support prices and cotton prices increase marginally because of a slight increase in domestic cotton use. However, average prices for grains and oilseeds are well above the levels that would trigger marketing loan benefits and countercyclical payments, so average commodity market and payment impacts are small. Other than the cotton user payment program, the other provisions examined would only affect markets and payments when prices are well below average projected levels.
- Average net farm income over the 2008-2012 period is essentially unchanged. Some of the payments that are shifted out of the FY 2008-FY 2012 period are made instead in October 2012. Since net farm income is a calendar year measure, those payments fall within a 2008-2012 farm income window, even though they fall outside a FY 2008-FY 2012 window for farm program outlays.

The **Selected Title I, with ACR** scenario introduces a new policy option that makes more profound changes in farm programs. Because the ACR program is optional, we assume it is only chosen by producers who expect to benefit more than under traditional programs.

- Over the FY 2008-FY 2012 period, net CCC outlays decline by \$3.34 billion relative to the baseline and by \$2.50 billion relative to the scenario without the ACR option. The reduction in outlays is entirely explained by the timing of payments under the ACR program. Although producers can begin participation in 2010/11, no payments are made under the program until FY 2012. For the 2011/12 crop, producers in the traditional program would, for example, receive direct payments in FY 2011 and FY 2012, but producers in the ACR program would not receive fixed payments until FY 2013.
- As in the other scenario, expected impacts on commodity markets are minimal. If the program were mandatory, it would shift payments away from cotton, rice, and peanut producers, and this would be expected to result in acreage shifts. However, since the program is voluntary, we expect cotton, rice and peanut producers to stay with the traditional program and for market effects to be small.
- Over the 2008-2012 period, average calendar year net farm income declines by an average of \$0.22 billion per year. This average is deceptive because the result is entirely due to the shift in timing of payments. Participants in the ACR receive no ACR payments in 2010, reducing net farm income in that one year by \$2.00 billion relative to the baseline. In later years, both government payments and net farm income exceed baseline levels.

Table 1. Summary of key results

	Baseline	Selected*	Selected*	Absolute Differences		
		No ACR	With ACR	No ACR vs. Baseline	With ACR vs. Baseline	With ACR vs. No ACR
Farm Program Expenditures						
		(Billion Dollars, FY2008 - FY2012 Total)				
Corn	10.60	10.13	8.77	-0.47	-1.83	-1.36
Soybeans	3.46	3.39	3.22	-0.08	-0.24	-0.17
Wheat	5.89	5.92	5.09	0.03	-0.80	-0.83
Upland Cotton	10.45	10.21	10.22	-0.24	-0.23	0.01
Rice	2.98	2.85	2.86	-0.12	-0.12	0.00
Sorghum	1.00	0.96	0.88	-0.04	-0.13	-0.08
Barley	0.43	0.46	0.45	0.03	0.02	-0.01
Oats	0.02	0.04	0.07	0.02	0.05	0.03
Minor Oilseeds	0.11	0.13	0.13	0.02	0.02	0.01
Peanuts	0.73	0.69	0.69	-0.04	-0.04	0.00
All Other CCC Outlays	22.26	22.31	22.21	0.05	-0.05	-0.10
Net CCC Outlays	57.92	57.08	54.58	-0.84	-3.34	-2.50
Crop Acreage						
		(Million Acres, 2008/09 - 2012/13 Average)				
Corn	89.96	89.95	89.95	-0.01	-0.01	0.00
Soybeans	70.14	70.14	70.16	0.00	0.02	0.01
Wheat	57.92	57.96	57.95	0.04	0.03	-0.01
Upland Cotton	13.79	13.79	13.79	0.00	0.00	0.00
Rice	3.00	3.00	3.00	0.00	0.00	0.00
Sorghum	6.62	6.61	6.62	0.00	0.00	0.00
Barley	3.36	3.37	3.37	0.00	0.00	0.00
Oats	3.80	3.81	3.80	0.01	0.00	-0.01
Sunflowers	2.07	2.07	2.07	0.01	0.00	0.00
Peanuts	1.37	1.37	1.37	0.00	0.00	0.00
10 Major Crops	252.02	252.06	252.07	0.05	0.06	0.01
Crop Prices						
		(Dollars per Unit, 2008/09 - 2012/13 Average)				
Corn per Bushel	3.20	3.20	3.20	0.00	0.00	0.00
Soybeans per Bushel	6.92	6.92	6.92	0.00	-0.01	-0.01
Wheat per Bushel	4.13	4.13	4.13	0.00	0.00	0.00
Rice per Hundredweight	8.30	8.31	8.31	0.00	0.00	0.00
Upland Cotton per Pound	0.561	0.563	0.563	0.002	0.002	0.000
Farm Income						
		(Billion Dollars, 2008 - 2012 Average)				
Government Payments	11.20	11.15	10.83	-0.04	-0.37	-0.32
Crop Receipts	147.50	147.52	147.45	0.01	-0.05	-0.06
Livestock Receipts	128.43	128.44	128.42	0.00	-0.01	-0.01
Rent to Nonoperator Landlords	13.65	13.65	13.50	-0.01	-0.16	-0.15
Other Production Costs	254.81	254.81	254.77	0.00	-0.04	-0.03
Other Net Farm Income	43.70	43.70	43.72	0.00	0.02	0.01
Net Farm Income	62.38	62.36	62.16	-0.02	-0.22	-0.20
		(Billion Dollars, 2008 - 2012 Total)				
Net Farm Income	311.88	311.79	310.81	-0.09	-1.08	-0.99
		(Dollars per Acre, Jan. 1, 2013)				
Average Farm Real Estate Value	2,698	2,698	2,690	-1	-8	-8

*Changes in target prices, loan rates, and cotton user payments

Policy assumptions for the traditional program

The Senate Committee bill specifies that producers can choose to remain in the traditional farm program providing direct payments, CCP's and marketing loan benefits, or they can choose to participate in the new ACR program effective with the 2010/11 crop. For all producers in 2008/09 and 2009/10, and for producers opting for the traditional program in 2010/11 and subsequent years, the bill lays out a series of changes in basic program provisions (Table 2).

- Loan rates are increased for wheat, barley, oats and minor oilseeds. For sorghum, the nominal loan rate is maintained at current levels, but language requires corn and sorghum loan rates be set equal at the county level. We estimate that this would increase county-level sorghum loan rates by an average of approximately \$0.06 per bushel. Loan rates for corn, soybeans, upland cotton and peanuts are maintained at current levels. Separate loan rates for long grain and for short and medium grain rice are set at the current rice loan rate of \$6.50 per hundredweight.
- Target prices are increased for soybeans, wheat, sorghum, barley, oats and minor oilseeds. Target prices for corn and peanuts are maintained at current levels, and separate target prices for the two types of rice are set at the same level as the current rice target price. Upland cotton target prices are reduced by a fraction of a cent per pound.
- Direct payment rates are not changed by the Senate Committee bill, nor are program base acreages or program yields. Some new commodities are made eligible for payments under the bill at specified payment rates, but those additions are beyond the scope of this analysis.
- Domestic users of upland cotton qualify under the Committee bill for a \$0.04 per pound payment from August 1, 2008 until June 30, 2012. No payments are available for cotton used after July 1, 2012.
- The timing of certain payments is altered. Currently, up to 22 percent of direct payments can be made available as early as December of the year prior to the year in which the crop is harvested, with remaining payments made after October 1 of the year in which the crop is harvested. The bill would eliminate authority for advanced direct payments, effective with the 2012/13 crop. This has the effect of shifting some payments that would have been made during fiscal year 2012 (advanced payments on the 2012/13 crop) into fiscal year 2013.
- Likewise, up to 40 percent of expected CCP's under current law can be provided before the end of the crop year for each commodity. Under the Committee bill, no advanced CCP's are allowed beginning with the 2011/12 crop. This also has the effect of shifting some payments beyond the FY 2008-FY 2012 period.
- Producers who choose to participate in the ACR must agree to forego eligibility for marketing loan benefits, direct payments, and countercyclical payments. They would remain eligible for recourse loans, which must be repaid in full, regardless of market prices.

Table 2. Policy assumptions under the traditional program

	Baseline	Selected*	Selected*	Absolute Differences		
		Title I, No ACR	Title I, With ACR	No ACR vs. Baseline	With ACR vs. Baseline	With ACR vs. No ACR
Loan Rates						
(Dollars per Bushel, 2008/09 - 2016/17)						
Corn	1.95	1.95	1.95	0.00	0.00	0.00
Soybeans	5.00	5.00	5.00	0.00	0.00	0.00
Wheat	2.75	2.94	2.94	0.19	0.19	0.00
Sorghum	1.95	1.95	1.95	0.00	0.00	0.00
(Effective Rate**)	1.95	2.01	2.01	0.06	0.06	0.00
Barley	1.85	1.95	1.95	0.10	0.10	0.00
Oats	1.33	1.39	1.39	0.06	0.06	0.00
(Cents per Pound, 2008/09 - 2016/17)						
Upland Cotton	52.00	52.00	52.00	0.00	0.00	0.00
Sunflowerseed	9.30	10.09	10.09	0.79	0.79	0.00
Peanuts	17.75	17.75	17.75	0.00	0.00	0.00
(Dollars per Hundredweight, 2008/09 - 2016/17)						
Rice	6.50	6.50	6.50	0.00	0.00	0.00
Raw Cane Sugar						
(Cents per Pound)						
2008/09	18.00	18.00	18.00	0.00	0.00	0.00
2009/10	18.00	18.25	18.25	0.25	0.25	0.00
2010/11	18.00	18.50	18.50	0.50	0.50	0.00
2011/12	18.00	18.75	18.75	0.75	0.75	0.00
2012/13 - 2016/17	18.00	19.00	19.00	1.00	1.00	0.00
Target Prices						
(Dollars per Bushel, 2008/09 - 2016/17)						
Corn	2.63	2.63	2.63	0.00	0.00	0.00
Soybeans	5.80	6.00	6.00	0.20	0.20	0.00
Wheat	3.92	4.20	4.20	0.28	0.28	0.00
Sorghum	2.57	2.63	2.63	0.06	0.06	0.00
Barley	2.24	2.63	2.63	0.39	0.39	0.00
Oats	1.44	1.83	1.83	0.39	0.39	0.00
(Cents per Pound, 2008/09 - 2016/17)						
Upland Cotton	72.40	72.25	72.25	-0.15	-0.15	0.00
Sunflowerseed	10.10	12.74	12.74	2.64	2.64	0.00
Peanuts	24.75	24.75	24.75	0.00	0.00	0.00
(Dollars per Hundredweight, 2008/09 - 2016/17)						
Rice	10.50	10.50	10.50	0.00	0.00	0.00
Upland Cotton User Payments						
(Cents per Pound)						
August 2008 - June 2012	0.00	0.04	0.04	0.04	0.04	0.00
July 2013 - July 2017	0.00	0.00	0.00	0.00	0.00	0.00
Advanced Payments Allowed						
Direct: 2008/09 - 2011/12	22%	22%	22%	0%	0%	0%
Direct: 2012/13 - 2016/17	22%	0%	0%	-22%	-22%	0%
Countercyclical: 2008/09 - 2010/11	40%	40%	40%	0%	0%	0%
Countercyclical: 2011/12 - 2016/17	40%	0%	0%	-40%	-40%	0%

*Changes in target prices, loan rates, and cotton user payments

**We estimate that mandating sorghum loan rates be the same as corn on a county-by-county basis raises the effective average sorghum loan rate by about \$0.06 per bushel.

Policy assumptions under the optional ACR program

Beginning with the 2010/11 crop, a producer can make a one-time decision to participate in the ACR program for all of the program crops on the farm. Producers participating in the program surrender eligibility for nonrecourse marketing loans, direct payments and CCP's. Instead, participating producers are eligible for payments tied to a measure of average state revenues for each crop. The analysis considers the amended form of the ACR program approved by the Senate Committee on Agriculture, Nutrition and Forestry.

- Producers participating in the ACR program receive a fixed payment of \$15 per base acre on all program crops.
- That fixed payment is increased by a revenue component if the actual state revenue for a particular crop is less than the ACR program guarantee.
- The actual state revenue for each crop is equal to the state yield per planted acre multiplied by an indicator of harvest prices (the same price used to determine indemnities under crop insurance revenue coverage plans).
- The ACR program guarantee is a function of trend yields and a moving average of prices. Trend yields per planted acre for each state and commodity are calculated based on 1980-2006 data. The price used in the calculation is a three-year moving average of pre-planting time prices (once again, prices used in the crop insurance program for revenue coverage plans). The price used in the calculation is not allowed to change by more than 15 percent from one year to the next. The revenue guarantee is equal to 90 percent of the product of the trend yield and the moving average of prices.
- If the actual state revenue is less than the ACR program guarantee, the average revenue payment rate is based on 90 percent of the difference. Payment rates on a particular farm are adjusted by the ratio of the farm's crop insurance yield to the state trend yield. The revenue component is paid on 85 percent of base acres.
- ACR payments are made in October in the year after the year in which the crop is harvested. Payments on the 2010/11 crop, for example, would be made in October 2011, which is in FY 2012. Beginning in 2012/13, the timing of CCP's under traditional programs is the same as the timing of ACR payments, but direct payments are made a year earlier.

Approach used to analyze the ACR program

The ACR program creates a number of analytical challenges. We made a number of simplifying assumptions to represent the program in our modeling system.

- The crop insurance prices used to trigger payments under the model are not part of the current FAPRI model. We use season average farm prices as a proxy for harvest prices. For the pre-planting price, we used a measure of expected prices generated by the model.
- The FAPRI stochastic model does not estimate state level yields. To estimate impacts of a state-based ACR program, a four-step procedure was used.
- In the first step, we calculated what payments under the ACR program would have been if the program had been in place over the last 27 years. This calculation was done for every program commodity in every state, using some simplifying assumptions (e.g. using the previous year's season-average price as a proxy for pre-planting prices).
- Second, we estimated what ACR program payments would have been over the last 27 years if the program were triggered by national actual and trend yields, rather than state yields. In general, we found that the state level triggers under the ACR program result in higher average levels of payments. Over the 1980-2006 period, for example, average payments to corn farmers would have been 47 percent larger with state-based triggers instead of national-based triggers. For wheat, the difference was 80 percent, and for soybeans it was 35 percent.
- Third, for each commodity we developed an equation to relate payments under a state-based program to payments under a program based on national instead of state-level revenue calculations. These equations are calibrated to reproduce the calculated level of state-based payments over the 1980-2006 period.
- Fourth, we estimated what payments under the ACR program would be over the 2010/11-2016/17 period for each of 500 stochastic outcomes, given the equations that were developed in the third step. Estimated payments are more than \$700 million per year greater assuming the state-based triggers in the ACR program than they would have been if the program were tied to national level yields.

The procedure used to estimate payments under the ACR program could and should be improved to better represent the nuances of the program not captured in this analysis. However, given time and resource restraints, we believe the procedure used results in reasonable estimates.

Per-acre payments to producers

The **Selected Title I, No ACR** scenario raises loan rates and target prices for wheat, soybeans and several other commodities. This results in modest increases in average payment rates under the marketing loan and countercyclical payment programs for the affected commodities.

- Higher loan rates increase average marketing loan benefits for wheat, barley, oats, and sunflowers. Setting sorghum loan rates equal to those of corn at a county level has the effect of raising sorghum loan rates and marketing loan benefits. Average market prices for grains and oilseeds generally are above levels that would trigger marketing loan benefits, so estimated impacts are less than two dollars per acre for every commodity. Upland cotton marketing loan benefits decline marginally because the cotton user payment program slightly raises cotton prices.
- The increase in target prices for wheat, soybeans, barley, oats and sunflowers also increases average countercyclical payments for those commodities. Only in the case of oats is the average increase greater than two dollars per acre. Upland cotton CCP's decline slightly because of higher cotton prices and a very small reduction in the cotton target price.

The **Selected Title I, with ACR** scenario gives producer the option of staying with traditional programs, or moving to a program that would make payments when calculated state-level revenues per acre fall below trigger levels. Producers participating in the ACR would also receive a fixed payment of \$15 per base acre, but would have to agree to forego benefits under the direct and CCP programs and would be ineligible for nonrecourse loans.

- Under the scenario, producers who choose to stay with traditional programs would receive direct and CCP's per acre that are almost identical to those under the other scenario. A slight increase in soybean production results in marginally lower soybean prices and larger soybean payments under traditional programs.
- Under the ACR option, average producer payments (including the \$15 per acre fixed payment) range from about \$18 per base acre for peanuts to \$26 for soybeans. These averages mask a wide range of outcomes. Given program parameters, revenue-based payments are zero in most outcomes, but can be very large when prices fall below a three-year average of market prices and/or state level yields fall below trend levels.
- That estimated average payments are larger for soybeans than for corn reflects an important feature of the program and, perhaps, a quirk in the FAPRI baseline. The revenue guarantee in each state depends in part on an estimate of trend yields, based on 1980-2006 data. In the case of soybeans, the trend yield is greater than the average soybean yield in the 2007 FAPRI stochastic baseline. Given normal yield variability around the trend, this makes it more likely that yields will be low enough to trigger payments under the program than if the average yield were exactly equal to the computed trend yield. The opposite occurs for corn, where the trend yield is below the average FAPRI yield. Any differences between calculated trend yields and average yields will strongly affect the likelihood and magnitude of payments under the program.

Table 3. Per-acre payments to producers, 2010/11-2012/13

	Baseline	Selected*	Selected*	<u>Absolute Differences</u>		
		Title I, No ACR	Title I, With ACR	No ACR vs. Baseline	With ACR vs. Baseline	With ACR vs. No ACR
Marketing Loan Benefits**						
(Dollars per Acre, 2010/11 - 2012/13 Average)						
Corn	0.08	0.08	0.08	0.00	0.01	0.01
Soybeans	1.56	1.56	1.73	0.00	0.17	0.17
Wheat	0.02	0.12	0.12	0.10	0.10	0.00
Upland Cotton	28.27	27.74	27.76	-0.53	-0.51	0.02
Rice	23.71	23.71	23.71	0.00	0.00	0.00
Sorghum	0.07	0.11	0.11	0.04	0.05	0.01
Barley	0.45	0.93	0.98	0.48	0.53	0.05
Oats	0.43	0.73	0.74	0.30	0.31	0.01
Sunflowerseed	0.92	2.17	2.19	1.25	1.27	0.02
Peanuts	5.94	5.94	5.93	0.00	-0.01	-0.01
Direct, Countercyclical Payments**						
(Dollars per Base Acre, 2010/11 - 2012/13 Average)						
Corn	24.49	24.49	24.50	0.00	0.01	0.01
Soybeans	12.24	12.86	12.98	0.61	0.74	0.12
Wheat	15.34	15.92	15.94	0.58	0.60	0.02
Upland Cotton	76.48	75.19	75.22	-1.29	-1.26	0.03
Rice	109.89	109.88	109.89	-0.02	0.00	0.01
Sorghum	16.90	16.95	16.96	0.05	0.06	0.01
Barley	9.81	11.63	11.69	1.83	1.89	0.06
Oats	1.04	3.42	3.43	2.38	2.39	0.00
Sunflowerseed	7.37	9.18	9.19	1.81	1.82	0.01
Peanuts	83.50	83.53	83.47	0.04	-0.02	-0.06
Average Crop Revenue Payments						
(Dollars per Base Acre, 2010/11 - 2012/13 Average)						
Corn	n.a.	n.a.	19.51	n.a.	n.a.	n.a.
Soybeans	n.a.	n.a.	26.46	n.a.	n.a.	n.a.
Wheat	n.a.	n.a.	18.80	n.a.	n.a.	n.a.
Upland Cotton	n.a.	n.a.	22.32	n.a.	n.a.	n.a.
Rice	n.a.	n.a.	21.30	n.a.	n.a.	n.a.
Sorghum	n.a.	n.a.	19.91	n.a.	n.a.	n.a.
Barley	n.a.	n.a.	22.02	n.a.	n.a.	n.a.
Oats	n.a.	n.a.	18.31	n.a.	n.a.	n.a.
Sunflowerseed	n.a.	n.a.	24.29	n.a.	n.a.	n.a.
Peanuts	n.a.	n.a.	17.97	n.a.	n.a.	n.a.
ACR vs. DP+CCP+MLB***						
(Dollars per Harvested Base Acre, 2010/11 - 2012/13 Average)						
Corn	n.a.	n.a.	-5.07	n.a.	n.a.	n.a.
Soybeans	n.a.	n.a.	11.75	n.a.	n.a.	n.a.
Wheat	n.a.	n.a.	2.73	n.a.	n.a.	n.a.
Upland Cotton	n.a.	n.a.	-80.66	n.a.	n.a.	n.a.
Rice	n.a.	n.a.	-112.30	n.a.	n.a.	n.a.
Sorghum	n.a.	n.a.	2.84	n.a.	n.a.	n.a.
Barley	n.a.	n.a.	9.34	n.a.	n.a.	n.a.
Oats	n.a.	n.a.	14.14	n.a.	n.a.	n.a.
Sunflowerseed	n.a.	n.a.	12.91	n.a.	n.a.	n.a.
Peanuts	n.a.	n.a.	-71.44	n.a.	n.a.	n.a.

*Changes in target prices, loan rates, and cotton user payments

**Averages for producers not participating in the ACR program. ACR producers are not eligible for marketing loans, direct and countercyclical payments.

***For a producer with one acre of base of each commodity for each acre harvested. Based on these results, the analysis assumes 70% of wheat, barley, oat, and sunflower base will participate in the ACR program, 60% of soybean base, 50% of corn and sorghum base, and 0% of upland cotton, rice, and peanut base.

Net farm program expenditures by the Commodity Credit Corporation

The **Selected Title I, No ACR** scenario reduces estimated net outlays on farm program by the Commodity Credit Corporation (CCC) by \$836 million over the FY 2008-FY 2012 period. Net outlays marginally exceed baseline levels over the FY 2008-FY 2017 period.

- Raising loan rates and target prices and introducing a new cotton user payment program all increase farm program expenditures. However, the increases are relatively modest, in part because baseline commodity prices are high enough that marketing loan and CCP's occur only rarely.
- Shifts in the timing of payments account for all of the estimated reductions in expenditures. By shifting some 2010/11-2012/13 payments to October 2012 or beyond, recorded expenditures over the FY 2008-FY 2012 period decline.
- Net outlays exceed baseline levels in every year except FY 2012.

The **Selected Title I, with ACR** scenario results in a larger reduction in farm program outlays over the FY 2008-FY 2012 period. The reduction is much smaller over FY 2008-FY 2017.

- The ACR program results in larger annual payments to producers of oilseeds, wheat, and minor feed grains than under traditional programs, which is why most producers of those crops are assumed to participate in the ACR program. It is assumed that cotton, rice and peanut producers would not participate in the ACR program, given smaller estimated payments than under traditional programs. Producer choices to maximize expected payments would be expected to increase program outlays.
- This effect can be seen in the results for years after FY 2011. Net outlays under the scenario with the ACR option are greater than under the scenario where the ACR is not available. The difference is a little under \$400 million per year after FY 2012.
- Timing issues explain the estimated reduction in outlays under the scenario. Under traditional programs, many outlays associated with the 2010/11 and 2011/12 crops occur in FY 2010 and FY 2011. Under the ACR option, no payments are made on the 2010/11 crop until FY 2012. This results in a \$3.38 billion reduction in outlays in FY 2010 and FY 2011 relative to the scenario without the ACR option. For the FY 2008-FY 2012 period as a whole, the net reduction in outlays under the scenario is \$2.5 billion relative to the scenario without the ACR option.

Table 4. Net outlays by the Commodity Credit Corporation

	Baseline	Selected*	Selected*	Absolute Differences		
		Title I, No ACR	Title I, With ACR	No ACR vs. Baseline	With ACR vs. Baseline	With ACR vs. No ACR
Net CCC Outlays by Year						
			(Million Dollars)			
FY 2008	11,679	11,737	11,736	58	57	-1
FY 2009	11,739	11,917	11,920	179	181	2
FY 2010	11,457	11,616	10,920	159	-538	-697
FY 2011	11,484	11,634	8,950	151	-2,534	-2,684
FY 2012	11,559	10,177	11,053	-1,382	-506	876
FY 2013	11,593	11,735	12,120	141	527	386
FY 2014	11,706	11,835	12,199	128	493	364
FY 2015	10,761	10,931	11,321	170	560	390
FY 2016	10,745	10,966	11,345	221	600	379
FY 2008-FY 2012	57,918	57,081	54,578	-836	-3,340	-2,504
FY 2008-FY 2017**	113,468	113,513	112,908	45	-560	-605

*Changes in target prices, loan rates, and cotton user payments

**The FAPRI 2007 baseline extends through FY 2016. The 10-year estimate assumes FY 2017 outlays equal those of FY 2016.

Farm income

The **Selected Title I, No ACR** scenario has little net effect on average net farm income. Market receipts, government payments, and production costs are all affected only marginally.

- Consistent with the estimates of government outlays, net farm income increases slightly in every year not affected by a shift in the timing of payments.
- The reported decline in 2011 net farm income is largely due to the elimination of authority for advanced direct payments. As a result, some payments that would otherwise have been made in December 2011 are made in October 2012 instead.

The **Selected Title I, with ACR** scenario has larger effects on net farm income.

- Also consistent with the estimates of government outlays, net farm income increases relative to the baseline and relative to the scenario without the ACR option in every year after 2010.
- Net farm income declines by about \$2.00 billion relative to the baseline and \$2.05 billion relative to the scenario without the ACR option in calendar year 2010. Participants in the ACR receive no payments on the 2010/11 crop until 2011, while producers staying with traditional programs receive direct payments on the 2010/11 crop between December 2009 and October 2010.
- While the shifts in the timing of payments do not affect the magnitude of ultimate payments received, they do affect cash flow in a real way. The delay in payments under the ACR is one reason we do not assume even higher rates of participation in the program.

Table 5. Farm income

	Baseline	Selected*	Selected*	Absolute Differences		
		Title I, No ACR	Title I, With ACR	No ACR vs. Baseline	With ACR vs. Baseline	With ACR vs. No ACR
Net Farm Income by Category						
	(Billion Dollars, 2008 - 2012 Average)					
Government Payments	11.20	11.15	10.83	-0.04	-0.37	-0.32
Crop Receipts from Marketings	147.50	147.52	147.45	0.01	-0.05	-0.06
Livestock Receipts from Marketings	128.43	128.44	128.42	0.00	-0.01	-0.01
Total Receipts and Payments	287.13	287.11	286.71	-0.03	-0.43	-0.40
Total Production Costs	268.46	268.45	268.27	-0.01	-0.19	-0.19
Rent to Nonoperator Landlords	13.65	13.65	13.50	-0.01	-0.16	-0.15
All Other Production Costs	254.81	254.81	254.77	0.00	-0.04	-0.03
Other Net Farm Income	43.70	43.70	43.72	0.00	0.02	0.01
Net Farm Income	62.38	62.36	62.16	-0.02	-0.22	-0.20
Net Farm Income by Year						
	(Billion Dollars)					
2007	65.56	65.58	65.56	0.02	0.00	-0.02
2008	63.22	63.24	63.22	0.02	0.00	-0.02
2009	62.66	62.73	62.54	0.07	-0.12	-0.19
2010	62.24	62.29	60.24	0.05	-2.00	-2.05
2011	62.38	62.01	62.74	-0.37	0.36	0.73
2012	61.38	61.53	62.07	0.14	0.68	0.54
2013	60.43	60.51	60.89	0.08	0.46	0.39
2014	60.70	60.84	61.16	0.14	0.46	0.32
2015	60.40	60.53	60.81	0.12	0.41	0.29
2016	61.36	61.48	61.73	0.12	0.37	0.25

*Changes in target prices, loan rates, and cotton user payments

Comparison of ACR and traditional program payments under alternative market conditions

The tables have reported average results across 500 stochastic outcomes. However, the averages may mask important features of traditional programs and the ACR program. Under both programs, some payments do not vary based on market outcomes (direct payments under the traditional program and fixed ACR payments). However, other payments depend on market prices and/or yields (marketing loan benefits, CCP's, and ACR revenue payments).

Figures 1-4 sort the 500 outcomes for 2010/11 to determine how estimated payments are related to market conditions.

- Average ACR payments to corn producers exceed average payments under traditional farm programs when 2010/11 corn prices are under \$2.40 per bushel (Figure 1). At higher prices, the reverse is true. Corn direct payments average approximately \$24 per base acre under traditional farm programs, while ACR fixed payments are set at \$15 per base acre.
- A similar pattern emerges when payments are sorted by 2010/11 national corn market revenue (price times yield) per acre (Figure 2). Average ACR payments exceed traditional program payments at low levels of market revenue per acre, but the reverse is true at higher levels of market revenues.
- Averaging across all 500 outcomes, average 2010/11 payments on corn base acreage are larger under current programs than under the ACR program. If these results match producer expectations, it might suggest limited ACR participation by corn producers.
- Two factors might argue for wider corn producer participation than suggested by average projected payment rates. First, average ACR payments on soybean base acreage exceed traditional program payments, and most corn producers would have both corn and soybean base acreage. Second, the ACR program does make larger payments when revenues are low, and risk-averse producers may value payments that mitigate downside revenue risk.
- For upland cotton, ACR payments are far below traditional farm program payments under almost any plausible market outcome (Figures 3 and 4). Direct payments for cotton producers average \$34 per base acre, far above the ACR fixed payment of \$15 per acre, and upland cotton producers also qualify for large CCP's and marketing loan benefits under likely market conditions.
- Based on these results, we expect that very few upland cotton producers would find it beneficial to participate in the ACR program. For purposes of this analysis, we assumed no upland cotton (or rice or peanut) base acreage would be enrolled in the ACR program.

The results of the analysis are very baseline dependent. Average corn ACR payments are relatively low in part because average FAPRI baseline corn yields are slightly above the 1980-2006 trend used to establish the ACR revenue guarantee. The opposite is true of soybeans. All else equal, ACR payments are greater than traditional farm program payments if prices decline from a high level, but traditional payments are greater if prices are persistently low.

Figure 1. Average corn payment rates sorted by 2010/11 corn prices

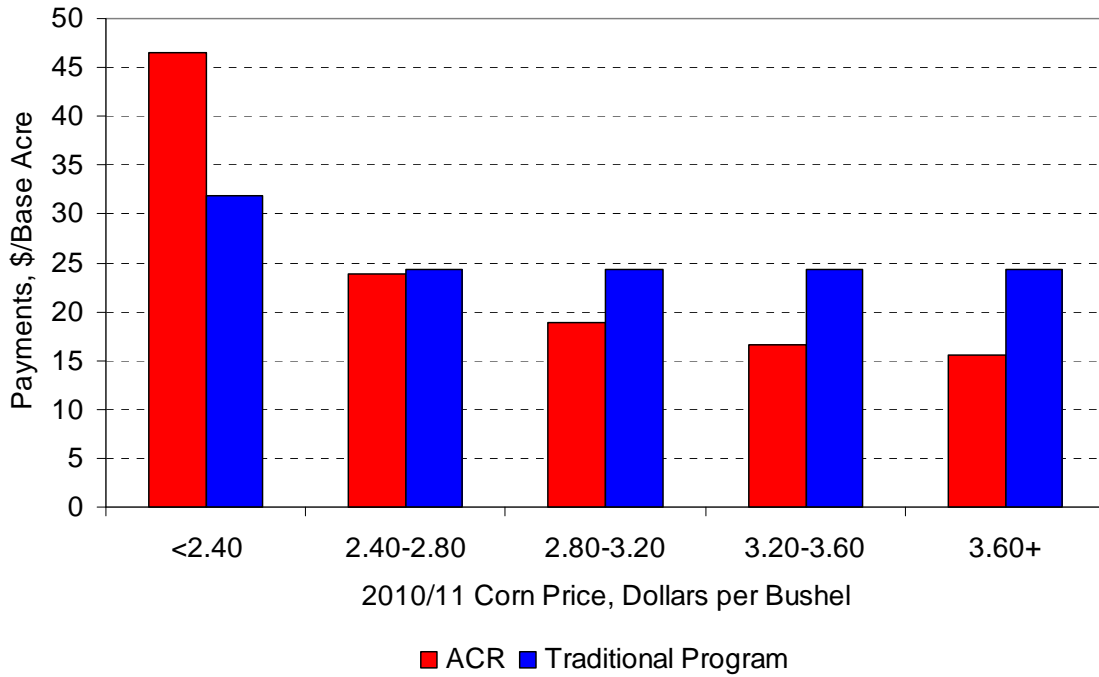


Figure 2. Average corn payment rates sorted by 2010/11 corn market revenues per acre

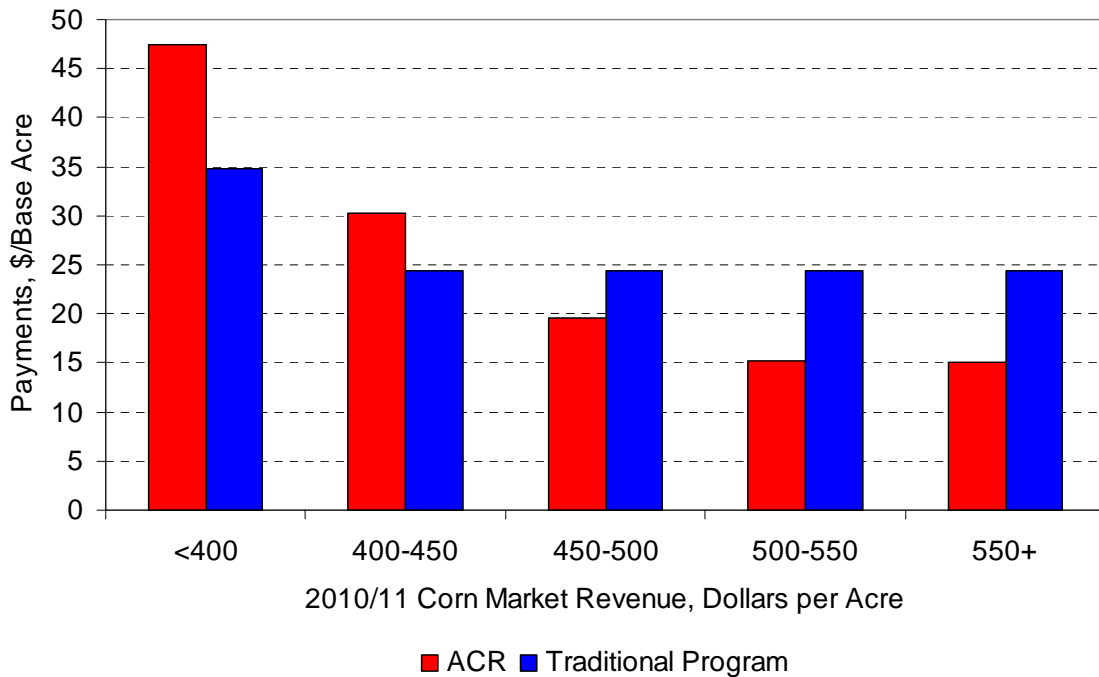


Figure 3. Average upland cotton payment rates sorted by 2010/11 upland cotton prices

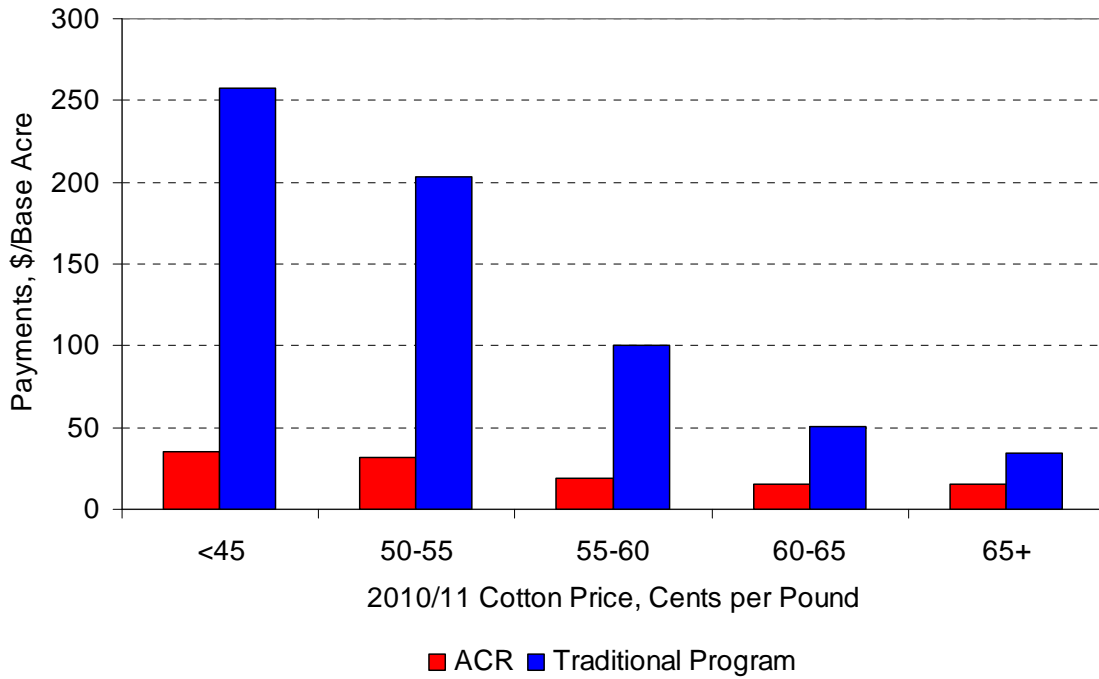
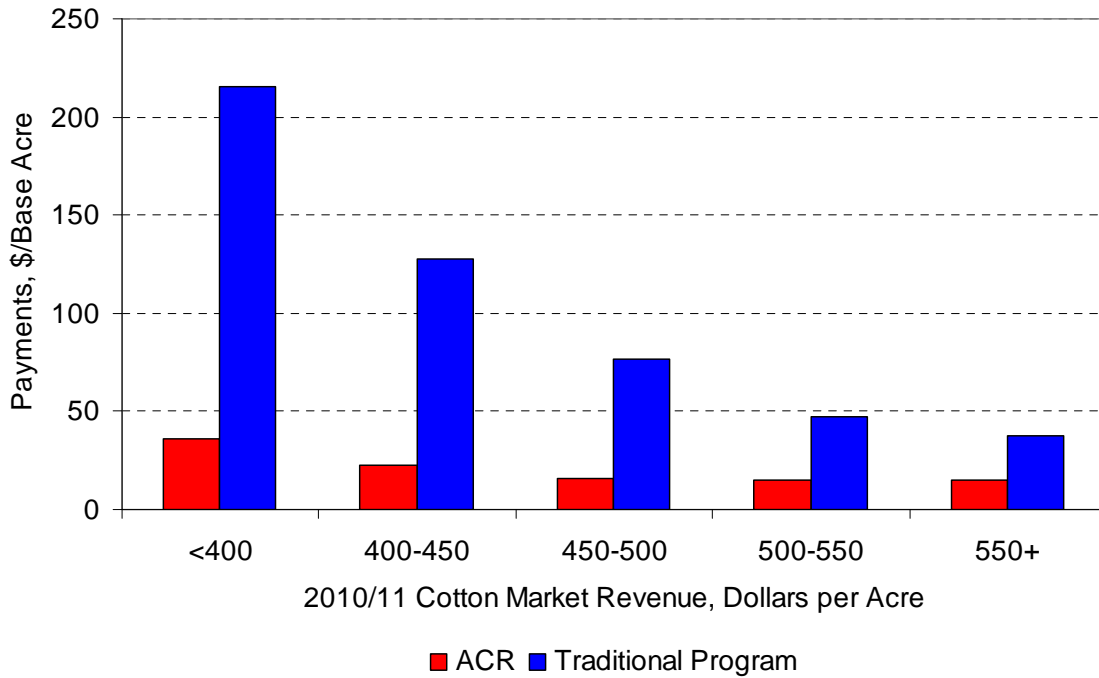


Figure 4. Average upland cotton payment rates sorted by 2010/11 upland cotton market revenues per acre



Notes

