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Contact authors for this report are Pat Westhoff (westhoffp@missouri.edu) and Scott Gerlt (gerlts@missouri.edu).

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Summary

The U.S. Senate approved the “Agriculture Reform, Food and Jobs Act of 2012” on June 21, 2012, and the U.S. House Committee on Agriculture approved the “Federal Agriculture Reform and Risk Management Act of 2012” on July 12, 2012. This report examines the possible consequences of several key provisions in the two bills.

- 1) The elimination of the current Direct and Countercyclical Payment (DCP) and Average Crop Revenue Election (ACRE) programs, a common feature of both bills.
- 2) The establishment of the Agriculture Risk Coverage (ARC) program, the Stacked Income Protection Plan (STAX), and the Supplemental Coverage Option (SCO) in the Senate bill.
- 3) The establishment of Price Loss Coverage (PLC) and Revenue Loss Coverage (RLC) programs, as well as slightly different versions of STAX and SCO, in the House bill.

Models maintained by the Food and Agricultural Policy Research Institute at the University of Missouri (FAPRI-MU) are used to estimate possible impacts of these proposed policy changes. Results are presented relative to a baseline prepared in early 2012 that assumes a continuation of existing farm policies. The analysis uses a stochastic approach that considers 500 possible future outcomes for agricultural commodity markets to examine the consequences of continued market volatility.

The two bills have much in common and the consequences of the two bills would be similar in many respects. Both bills replace a Direct Payment program that makes payments that are not tied to current prices or production levels with new programs that offer support linked to current levels of production and prices. Average levels of federal farm program spending would be reduced under both bills, and most commodity market impacts would be relatively small. Some key results are summarized in Table 1.

- The program changes examined in this report reduce estimated 10-year net budgetary outlays by \$12.9 billion under both the Senate bill and the House Committee bill. Estimates of the net budget savings of the same provisions by the Congressional Budget Office (CBO) are \$18.0 billion for the Senate bill and \$18.5 billion for the House Committee bill.
- SCO accounts for much of the difference between CBO budget estimates and those reported here. Fiscal costs will depend critically on SCO enrollment levels, as shown in sensitivity analysis.
- The House Committee bill provides substantially more support than the Senate bill to producers of some commodities, including wheat, rice, barley and peanuts. Production of those crops would be greater under the House Committee bill than under the Senate bill. Corn and soybean production would be greater under the Senate bill than under the House Committee bill.
- Program benefits will be very sensitive to market conditions and producer participation decisions, as the various programs provide protection against different types of financial risk.
- Under each bill, average net farm income and agricultural real estate values would decline slightly relative to what would happen under a simple continuation of current farm programs. Impacts on consumer food prices would be very small.

Other provisions of the bills, such as changes in the dairy program, the Conservation Reserve Program and the Supplemental Nutrition Assistance Program, are not examined in this report.

Table 1. Key results, average change from baseline, 2013-2017, except as noted

	Senate ARC/ STAX/SCO	House PLC/RLC/ STAX/SCO
<u>Program changes examined</u>	Elimination of DCP & ACRE; creation of ARC, SCO & STAX	Elimination of DCP & ACRE; creation of RLC, PLC, SCO & STAX
<u>Crop area planted (percent)</u>		
Corn	0.3%	0.1%
Soybeans	-0.1%	-0.3%
Wheat	-0.3%	0.4%
Upland cotton	2.9%	2.8%
Sorghum	-1.2%	-1.4%
Rice	-0.5%	3.1%
Barley	-0.6%	2.8%
Peanuts	-0.8%	2.1%
12 major crops	0.1%	0.2%
<u>Crop prices (percent)</u>		
Corn	-0.7%	-0.3%
Soybeans	-0.1%	0.3%
Wheat	-0.1%	-0.7%
Upland cotton	-2.0%	-1.9%
Sorghum	-0.2%	0.1%
Rice	0.4%	-3.2%
Barley	-0.2%	-2.3%
Peanuts	1.3%	-3.9%
<u>ARC/RLC/PLC payments plus change in crop insurance net indemnities (\$/acre)</u>		
Corn	\$21.05	\$17.23
Soybeans	\$10.35	\$8.61
Wheat	\$7.79	\$13.61
Upland cotton	\$39.73	\$40.89
Sorghum	\$6.60	\$7.24
Rice	\$16.88	\$94.30
Barley	\$7.76	\$28.28
Peanuts	\$15.45	\$85.62
<u>Federal farm program outlays</u> (billion dollars, FY 2013-2022 total)	-\$12.88	-\$12.86
<u>Net farm income (percent)</u>	-2.3%	-1.8%
<u>Farm real estate value (percent)</u>	-1.4%	-1.1%
<u>Consumer food expenditures (percent)</u>	0.0%	0.0%

Introduction

The “Agriculture Reform, Food and Jobs Act of 2012” was approved by the U.S. Senate on June 21, 2012, and the “Federal Agriculture Reform and Risk Management Act of 2012” was approved by the U.S. House Committee on Agriculture on July 12, 2012. In response to a request from the U.S. Department of Agriculture’s Office of the Chief Economist, this report examines the possible consequences of several key provisions in the two bills that are likely to have important consequences for U.S. crop producers.

- 1) The elimination of the current Direct and Countercyclical Payment (DCP) and Average Crop Revenue Election (ACRE) programs, a common feature of both bills.
- 2) The establishment of the Agriculture Risk Coverage (ARC) program, the Stacked Income Protection Plan (STAX), and the Supplemental Coverage Option (SCO) in the Senate bill.
- 3) The establishment of Price Loss Coverage (PLC) and Revenue Loss Coverage (RLC) programs, as well as slightly different versions of STAX and SCO, in the House Committee bill.

The bills include a wide range of other provisions beyond the scope of this report, such as changes in the dairy program, limitations on enrollment in the Conservation Reserve Program (CRP) and revisions in rules for the Supplemental Nutrition Assistance Program (SNAP).

The analysis considers a baseline and two alternative scenarios.

- 1) The **Baseline** assumes a continuation of current U.S. farm programs, including an indefinite extension of the DCP and ACRE programs.
- 2) The **Senate ARC/STAX/SCO** scenario assumes the elimination of the DCP and ACRE programs and the creation of ARC, STAX, and SCO, all effective with the 2013 crop year.
- 3) The **House PLC/RLC/STAX/SCO** scenario assumes the elimination of the DCP and ACRE programs and the creation of PLC, RLC, STAX and SCO, also all effective with the 2013 crop year.

The analysis is conducted using economic models developed by the Food and Agricultural Policy Research Institute at the University of Missouri (FAPRI-MU). The FAPRI-MU models cover major U.S. crop and livestock commodity markets and also generate estimates of farm income, budgetary outlays, consumer food expenditures and other indicators. The models include explicit representations of a wide range of existing government programs, and new equations were added to the models to examine the new ARC, RLC, PLC, STAX and SCO programs.

The point of departure for the analysis is the set of 10-year stochastic Baseline projections for the U.S. agricultural economy developed in early 2012. The Baseline assumes a continuation of 2008 farm bill provisions, generally following the same policy assumptions that guide baseline development by the Congressional Budget Office (CBO). The stochastic Baseline is a set of 500 projections that share a common set of policy assumptions, but that utilize different assumptions about the weather, energy markets and some of the other factors that make agricultural markets uncertain and volatile. This report generally uses averages from these 500 alternative outcomes, but the approach makes it possible to examine policy impacts under a wide range of circumstances.

The Baseline was prepared in early 2012 reflecting information available at that time, and thus does not reflect changes in market conditions that have occurred because of the drought or other recent developments. The drought currently appears likely to have larger impacts on crop markets in 2012/13 than in the subsequent years covered by the new farm bill.

Policies examined

Policy assumptions of the three scenarios are summarized in Table 2 at the end of this section.

The bills both eliminate the **DCP and ACRE** programs effective with crops harvested in 2013. The Direct Payment (DP) program makes fixed annual payments to producers. These payments are tied to base acreage and program yields determined by production on a farm in the distant past, and generally are unaffected by current planting decisions or production levels. DPs total about \$5 billion per year, and under the bill, producers would receive their last checks under the program in October 2012.

Countercyclical Payments (CCPs) are made to participating producers when season-average farm prices fall below a trigger level determined by legislated target prices and DP rates. In recent years, market prices for most grains and oilseeds have been above levels that would result in CCPs, although large payments can occur when prices are low.

The ACRE program was created in the 2008 farm bill as an alternative to CCPs. Participating producers get a payment when state and farm-level revenues for a particular crop fall below triggers determined by past prices and yields. Participation in this voluntary program has been limited, so actual and projected spending on the program has been far less than on the direct payment program. Under the Senate and House Committee bills, CCP and ACRE payments would be available on crops harvested in 2012, but not on crops harvested in subsequent years.

The proposed Senate **ARC** program would also make payments when per-acre revenues for a particular crop fall below a trigger level. While the program has some features in common with ACRE, the program also has many distinct provisions:

- The program is available to grain and oilseed producers, but not to producers of upland cotton.
- Producers must choose between two options. One would make payments based on calculations that use county-level yields and the other would use farm-level yields. Those who choose the county-based option can receive payments on 80 percent of planted acres, while those who choose the farm-based option can receive payments on 65 percent of planted acres. Under either option, 45 percent of prevented planted acres are eligible for payment.
- Total planted acres on a farm used to calculate ARC benefits generally cannot exceed actual average plantings and acres considered planted between 2009 and 2012.
- A benchmark level of revenue is determined by multiplying a 5-year Olympic average of U.S. season-average market prices (the average after excluding the year with the highest price and the year with the lowest price) by a 5-year Olympic average of yields per planted acre. For rice and peanuts only, there is a floor beneath the annual prices that can be used in calculating the Olympic average price. Unlike ACRE, there is no restriction on the magnitude of annual movements in the benchmark.
- Payments are made when actual revenues (yields per planted acre multiplied by the U.S. average market price for the first five months of the marketing year) fall at least 11 percent below the benchmark.

- The maximum payment is equal to 10 percent of the benchmark. Thus, the program covers losses of between 11 percent and 21 percent of the benchmark. Producers would be expected to continue to use crop insurance to protect against losses not covered by ARC.
- Payments under the program can be made once the five-month price is known. For corn and soybeans, for example, payments could be made early in the calendar year after the crop is harvested.
- There is a \$50,000 limit on ARC payments to a producer, except a peanut producer can receive up to \$50,000 in ARC payments for peanuts and up to \$50,000 in ARC payments for other crops. ARC benefits are not available to producers with an adjusted gross income (AGI) of more than \$750,000.

In the House Committee bill, producers can choose to enroll particular crops in the **RLC** program, which is similar in many respects to the Senate ARC program.

- As with ARC, RLC is available to grain and oilseed producers, but not to producers of upland cotton.
- RLC is similar to the county-based option under ARC, except payments are available on up to 85% percent of planted acres and 30 percent of prevented planted acres, and producers can make participation choices on a crop-by-crop basis. Total payment acres on a farm generally cannot exceed the sum of historical base acreage on the farm.
- Benchmark calculations under RLC are generally the same as under ARC, except all commodities have a floor under the annual prices that are used in calculating the Olympic average price.
- Payments are made when actual revenues fall at least 15 percent below the benchmark.
- The maximum payment is equal to 10 percent of the benchmark. Thus the program covers losses of between 15 percent and 25 percent of the benchmark.
- Payments can only be made after October 1 of the year after the crop is harvested. Thus, payments on the 2013 crop would not be available until October 2014, similar to the timing of CCPs and ACRE payments under current law.
- The payment limitation in the House Committee bill is \$125,000, again with a separate limitation for peanuts. The AGI limit is \$950,000.

In the House Committee bill, **PLC** is the default option for grain and oilseed producers. The program has some features in common with the current CCP program, but differs in important respects.

- Like CCPs, PLC payments occur when market prices fall below a trigger level, and payments depend on fixed program yields instead of actual harvested yields in a given year.
- Unlike CCPs, PLC payments are made on 85 percent of planted acreage and 30 percent of prevented planted area rather than on fixed base acreage. As with RLCs, total payment acreage is limited to historical base acreage on a farm.

- PLC reference price are higher than the target prices used in calculating CCPs, and PLC calculations use the five-month market price, which is normally less than the season-average price used in CCP calculations.
- Producers are given the option of updating payment yields to 90 percent of the 2008-2012 average yield per planted acre.
- Like RLC payments, PLC payments can only be made after October 1 of the year after the crop is harvested. Payment limitation and AGI rules are also the same as for RLC.

The **SCO** program is an area-based crop insurance product that can cover a portion of the deductible in individual crop insurance coverage. SCO provisions differ between the House Committee and Senate bills.

- In the Senate bill, SCO is available to producers not enrolled in STAX. In the House bill, SCO is not available for acreage enrolled in STAX or RLC.
- In the Senate bill, SCO can cover all but 21 percent of a producer's deductible if the producer is enrolled in ARC, and all but 10 percent in the case of a producer not enrolled in ARC.
- In the House Committee bill, SCO can cover all but 10 percent of the deductible for a producer enrolled in PLC.
- Federal subsidies cover 70% of the SCO premium.

The **STAX** program has some features in common with ARC and RLC, but also has distinct provisions.

- The program is available only to producers of upland cotton.
- STAX is offered as a crop insurance product. Producers pay a premium and receive indemnities when a calculation of county revenues falls below a trigger level determined by historical yields and futures market prices. Federal subsidies cover 80 percent of the STAX premium.
- STAX can be used to cover revenue losses between 10 percent and 30 percent of expected county revenue. Producers would be expected to continue to use conventional crop insurance policies to protect against other losses.
- The STAX payment rate multiplier of between 80 and 120 percent is selected by the producer.
- The House Committee and Senate versions of STAX are similar, except the House version specifies that the price used to calculate the level of guaranteed revenue cannot fall below 68.61 cents per pound.

Both the House and Senate bills continue the current **Marketing Loan Program**, with loan rates and other provisions that generally follow current law. One important exception is upland cotton, where the loan rate under both bills is set at the two-year average of the Adjusted World Price (AWP), but in no case above 52 cents per pound or less than 47 cents per pound.

Table 2a. Policy assumptions of the scenarios

	Baseline	Senate ARC/ STAX/SCO	House PLC/RLC/ STAX/SCO
DCP/ACRE payments available?	Yes	Not after 2012	Not after 2012
ARC/PLC/RLC/STAX/SCO available?	No	Yes from 2013	Yes from 2013
<u>ARC or RLC provisions</u>			
Eligibility	n.a.	Program crops other than upland cotton	Alternative to PLC for particular crops on a farm; not available for upland cotton
Benchmark revenue basic rule	n.a.	5-year Olympic avg. yield times 5-year Olympic avg. U.S. price	5-year Olympic avg. yield times 5-year Olympic avg. U.S. price
"Plugs" to replace low prices in benchmark calculations	n.a.	Rice (\$13/cwt) and peanuts (\$530/ton)	All crops (same as PLC reference)
Current revenue	n.a.	Yield times 5-month U.S. price	Yield times 5-month U.S. price
Yield data used to compute benchmark and current revenue	n.a.	One-time choice: county or individual	County only
Loss triggering payments	n.a.	11%	15%
Maximum payment as share of benchmark revenue	n.a.	10%	10%
Payment acres			
Individual: share of planted	n.a.	65%	n.a.
County: share of planted	n.a.	80%	85%
Share of prevented planted acreage	n.a.	45%	30%
Additional cap on total payment acres	n.a.	65% or 80% of 2009-2012 total planted+prevented	Base area
Payments made no sooner than:	n.a.	After 5-month price is known	October of year after harvest
Payment limitations	n.a.	\$50,000 (peanuts separate)	\$125,000 (peanuts separate)
Adjusted Gross Income (AGI) limitation	n.a.	\$750,000	\$950,000

Table 2b. Policy assumptions of the scenarios, continued

	Baseline	Senate ARC/ STAX/SCO	House PLC/RLC/ STAX/SCO
<u>PLC provisions</u>			
Eligibility	n.a.	n.a.	Default for program crops except up. cotton (RLC is alternative)
Reference prices			
Corn per bushel	n.a.	n.a.	\$3.70
Soybeans per bushel	n.a.	n.a.	\$8.40
Wheat per bushel	n.a.	n.a.	\$5.50
Sorghum per bushel	n.a.	n.a.	\$3.95
Barley per bushel	n.a.	n.a.	\$4.95
Rice (by type) per hundredweight	n.a.	n.a.	\$14.00
Peanuts per ton	n.a.	n.a.	\$535.00
Price used to calculate payments	n.a.	n.a.	U.S. 5-month price
Payment yields	n.a.	n.a.	Can update CCP yields to 90% of 2008-2012 avg. yield per planted, with plug for low yields
Payment acres, payment timing, payment limitation, AGI limitation	n.a.	n.a.	Same as for RLC
<u>SCO provisions</u>			
Eligibility	n.a.	Program crop producers (cannot get both SCO and STAX)	Program crop producers (cannot get SCO with RLC or STAX)
Portion of individual deductible not covered by area-wide policy	n.a.	21% for ARC participants; 10% for ARC nonparticipants;	10% for PLC participants; not available to RLC participants
Premium subsidy	n.a.	70%	70%

Table 2c. Policy assumptions of the scenarios, continued

	Baseline	Senate ARC/ STAX/SCO	House PLC/RLC/ STAX/SCO
<u>STAX provisions</u>			
Eligibility	n.a.	Upland cotton only	Upland cotton only
Expected county revenue normal rule	n.a.	Like GRIP (normally based on futures prices and trend or Olympic average yields)	Like GRIP (normally based on futures prices and trend or Olympic average yields)
"Plugs" to replace low prices in expected county revenue calculation	n.a.	n.a.	68.61 cents/lb.
Loss triggering payment	n.a.	10%	10%
Maximum payment as share of expected county revenue	n.a.	20%	20%
Payment rate multiplier	n.a.	80%-120%	80%-120%
Premium subsidy	n.a.	80%	80%
<u>Marketing loan provisions</u>			
Loan rates			
Corn per bushel	\$1.95	\$1.95	\$1.95
Soybeans per bushel	\$5.00	\$5.00	\$5.00
Wheat per bushel	\$2.94	\$2.94	\$2.94
Sorghum per bushel	\$1.95	\$1.95	\$1.95
Barley per bushel	\$1.95	\$1.95	\$1.95
Rice (by type) per hundredweight	\$6.50	\$6.50	\$6.50
Peanuts per ton	\$355.00	\$355.00	\$355.00
Upland cotton per pound	\$0.52	2-yr. avg of AWP, but between \$0.47 and \$0.52	2-yr. avg of AWP, but between \$0.47 and \$0.52

Program implementation and participation

To estimate the fiscal and market impacts of the farm bill proposals requires a series of assumptions about program implementation and producer participation. For example, this analysis assumes that all of the new programs will be implemented for crops harvested in 2013, even though it may be difficult to do so, especially if it is some time before a final bill is completed. CBO, for example, assumes that neither STAX nor SCO will be available to producers for crops harvested in 2013. This difference in implementation assumptions accounts for part of the difference in estimated fiscal costs of the program.

In the **Senate** bill, producers must choose whether to participate in the county or individual version of ARC, or whether to forgo ARC participation entirely in order to be able to obtain the version of SCO that can cover the greater share of a producer's deductible.

A comparison of expected payments suggests that the county-based ARC would provide greater payments to the average producer, but many producers may choose the individual-based version of ARC to better insure against farm-specific risks or for other reasons. ARC and SCO with a 10 percent individual deductible provide similar levels of expected net benefits for most producers, but many are likely to choose ARC over SCO to avoid paying the required SCO premium (Table 3). ARC would also provide some protection against a sustained drop in prices not available from SCO. On the other hand, SCO is a crop insurance program and is not subject to the same payment limitation rules as ARC.

This analysis assumes that 90 percent of producers (to be more precise, producers representing 90 percent of production) enroll in ARC, half in the county-based version and half in the individual version (Table 4). The remaining 10 percent of producers opt for SCO with the 10 percent individual deductible. Of those who enroll in ARC, half also purchase the available SCO coverage with a 21 percent individual deductible. Finally, it is assumed that 95 percent of upland cotton producers enroll in STAX. Given a lack of options, only a few would choose not to participate in STAX to avoid paying the required premium.

Under the **House Committee** bill, producers must decide for each crop whether to remain with the default option of PLC or to participate in RLC. In addition, PLC participants can also choose to participate in SCO (SCO is not available on acres enrolled in RLC or STAX).

For corn and soybeans, expected RLC payments exceed expected PLC payments (Table 5). However, PLC provides greater protection against a sharp long-term decline in crop prices. Perhaps more importantly, PLC participants can also benefit from SCO, and combined PLC and SCO benefits exceed expected RLC benefits for corn and soybean producers. For other crops, expected PLC payments exceed expected RLC payments, even before considering SCO effects.

Considering these and other factors, the analysis assumes that 60 percent of corn and soybean producers opt for PLC, with higher PLC participation for other crops, up to 99 percent for peanuts and rice (Table 6).

A simple comparison of benefits suggests that almost all PLC participants would benefit from purchasing SCO, given the 70 percent premium subsidy. Experience with other crop insurance products, however, suggests many producers will choose to reduce out-of-pocket costs by purchasing lower levels of coverage than would maximize net indemnities (indemnities minus producer-paid premiums) in the long run. This analysis assumes that half of PLC participants purchase SCO.

Because estimated market and fiscal impacts are so sensitive to participation assumptions, a section at the end of the report discusses the implications of making different assumptions about SCO participation.

Table 3. Program benefits in the Senate bill, 2013-2017 average, dollars per acre for producers participating in particular programs and a weighted average across all production

	SCO net indemnities			(Sum of ARC & SCO for ARC part.)	STAX change in net indem.	Average across all production
	ARC payments	ARC participants	ARC non-participants			
Corn	20.20	3.53	16.52	23.73	n.a.	21.42
Soybeans	9.66	1.88	9.22	11.54	n.a.	10.46
Wheat	6.98	2.33	7.30	9.32	n.a.	8.07
Upland cotton	n.a.	n.a.	n.a.	n.a.	41.82	39.73
Sorghum	6.51	1.13	5.34	7.64	n.a.	6.90
Barley	7.44	1.27	6.32	8.71	n.a.	7.90
Rice	15.97	2.75	13.55	18.73	n.a.	16.97
Peanuts	14.29	2.68	13.89	16.96	n.a.	15.45

Table 4. Senate bill: assumed program participation rates, share of total production

	County ARC	Individual ARC	SCO w/ 10% deductible	SCO w/ 21% deductible	STAX
Grains and oilseeds	45%	45%	10%	45%	n.a.
Upland cotton	n.a.	n.a.	0%	0%	95%

Table 5. Program benefits in the House Committee bill, 2013-2017 average, dollars per acre for producers participating in particular programs and a weighted average across all production

	RLC	PLC	SCO net	(Sum of	STAX	Average across all production
	payments	payments	indemnities	PLC and SCO)	change in net indem.	
Corn	15.94	10.32	16.52	26.84	n.a.	17.52
Soybeans	7.56	4.83	9.22	14.05	n.a.	8.69
Wheat	6.25	12.35	7.30	19.65	n.a.	14.05
Upland cotton	n.a.	n.a.	n.a.	n.a.	43.04	40.89
Sorghum	4.85	5.97	5.34	11.31	n.a.	7.50
Barley	7.80	28.04	6.32	34.36	n.a.	28.86
Rice	14.04	88.76	13.55	102.31	n.a.	94.72
Peanuts	12.94	79.40	13.89	93.29	n.a.	85.62

Table 6. House Committee bill: assumed program participation rates, share of total production

	RLC	PLC	SCO	STAX
Corn	40%	60%	30%	n.a.
Soybeans	40%	60%	30%	n.a.
Wheat	20%	80%	40%	n.a.
Upland cotton	n.a.	n.a.	n.a.	95%
Sorghum	30%	70%	35%	n.a.
Barley	10%	90%	45%	n.a.
Rice	1%	99%	50%	n.a.
Peanuts	1%	99%	50%	n.a.

Area and price impacts

The **Senate** bill provisions examined here would have only a very small net effect on the area used to produce major crops (Table 7).

All else equal, eliminating the DCP and ACRE programs reduces producer income and results in a modest reduction in the area planted to major crops. In the Senate bill, this effect is offset by the effects of the new ARC, STAX and SCO provisions. These programs only provide benefits to producers who attempt to grow a crop, so one dollar of benefits under those programs has a larger effect on production decisions than does a dollar of DCP payments, which are not tied to current production levels. Even though net spending on ARC, STAX and SCO is less than the DCP and ACRE program payments they replace, total planted acreage is marginally greater under the Senate bill than in the baseline.

Because the Senate bill distributes program benefits differently than under current law, the bill does not affect production of each commodity in the same way. Corn and upland cotton acreage expands at the expense of other crops. Average ARC, SCO and STAX benefits per acre are greater for corn and cotton than for other crops, as discussed in the next section.

The increase in acreage and production translates into slightly lower prices for corn and upland cotton (Table 8). Because of cross-commodity effects, this is also true for soybeans, wheat and sorghum, even though they experience a slight reduction in production. For peanuts and rice, the decline in production is strong enough and cross-commodity effects are weak enough that prices increase slightly under the Senate bill relative to the Baseline.

In the **House Committee** bill, average projected program benefits for several crops exceed those in the Senate bill, and the total acreage devoted to production of grains, oilseeds and upland cotton also increases. The distribution of those payments across commodities is very different than under the Senate bill, so it should not be surprising that acreage shifts are also quite different. Relative to the Senate bill, estimated payments and acreage are significantly greater for wheat, barley, rice and peanuts. Corn and soybean acreage is less than under the Senate bill, although corn acreage slightly exceeds Baseline levels.

The estimated changes in acreage and production under the House Committee bill result in corresponding changes in average market prices. Barley, rice and peanut prices all decline significantly from Baseline levels in response to increased production. For corn, soybeans and wheat, average prices are within 1 percent of Baseline levels, but average peanut prices are 4 percent lower.

Most of the average impacts on production and prices under either bill are fairly small. One reason is that average payments under ARC, PLC, RLC, STAX and SCO are small relative to market receipts, as discussed in the next section. However, the averages mask cases where these program changes could have larger impacts. For example, if prices fall sharply for one crop, producers may expect large payments for that crop and produce more of the crop than in the absence of the program. Small average acreage shifts may obscure larger opposing shifts in acreage under different market circumstances.

Even comparisons of potential market effects of the various programs are sensitive to market conditions. For example, when prices are expected to decline from recent average levels, producers may expect ARC or RLC payments and are likely to plant more acres than if they were simply responding to market signals. PLC, in contrast, may have little impact on production if prices decline from current levels while remaining well above reference prices, but could have even larger impacts than ARC or RLC if producers expect market prices to drop significantly below reference price levels, triggering large PLC payments.

Table 7. Planted area, million acres, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Corn	91.78	92.02	0.23	91.85	0.07	-0.17
Soybeans	74.42	74.34	-0.08	74.23	-0.19	-0.11
Wheat	55.13	54.94	-0.19	55.34	0.21	0.40
Upland cotton	11.68	12.02	0.34	12.01	0.33	-0.01
Sorghum	5.34	5.28	-0.06	5.26	-0.08	-0.01
Rice	3.10	3.09	-0.02	3.20	0.10	0.11
Oats	3.06	3.00	-0.05	3.01	-0.05	0.01
Barley	2.93	2.92	-0.02	3.02	0.08	0.10
Sunflower seed	1.84	1.83	-0.01	1.82	-0.01	-0.01
Peanuts	1.27	1.26	-0.01	1.30	0.03	0.04
Sugar beets	1.20	1.20	0.00	1.20	0.00	0.00
Sugarcane	0.84	0.84	0.00	0.84	0.00	0.00
12 major crops	252.61	252.74	0.13	253.09	0.48	0.35

Table 8. Crop farm prices, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Corn (dollars per bushel)	4.81	4.77	-0.03	4.79	-0.02	0.02
Soybeans (dollars per bushel)	11.42	11.41	-0.01	11.45	0.03	0.04
Wheat (dollars per bushel)	5.95	5.95	-0.01	5.91	-0.04	-0.03
Upland cotton (cents per pound)	80.17	78.58	-1.59	78.62	-1.55	0.04
Sorghum (dollars per bushel)	4.67	4.66	-0.01	4.67	0.00	0.01
Rice (dollars per hundredweight)	13.33	13.39	0.05	12.91	-0.42	-0.48
Oats (dollars per bushel)	2.96	2.95	0.00	2.96	0.00	0.00
Barley (dollars per bushel)	4.98	4.97	-0.01	4.86	-0.11	-0.11
Sunflower seed (cents per lb.)	23.86	23.87	0.01	23.92	0.06	0.05
Peanuts (cents per pound)	25.74	26.09	0.35	24.74	-1.00	-1.35

Crop returns

In the Baseline, the mix of government programs that support producer income differs greatly across crops (Table 9). DCP payments per base acre are far greater for rice than for soybeans, for example, while crop insurance net indemnities are a much smaller share of producer income for rice producers than for producers of many other crops. Other policies that do not involve direct subsidies to producers also can have important impacts on producer income. Biofuel policies, for example, support prices of corn, soybeans and other crops.

Eliminating DCP and ACRE payments, therefore, has a larger proportional impact on producers of some crops than on others. At one extreme, producers would lose \$11 per base acre in soybean DCP payments and \$3 per soybean planted acre in ACRE payments. At the other extreme, producers would lose \$96 per base acre in rice DCP payments. In absolute terms, corn payments per planted or base acre would decline more than the corresponding wheat payments, but the greater market value of corn production per acre means that the proportional effect on producer income of losing DCP and ACRE payments would be greater for most wheat producers than for most corn producers.

In the **Senate** bill, the ARC, SCO and STAX programs replace some of the income producers lose because of the elimination of DCP and ACRE programs. These programs provide average benefits of about \$21 per acre for corn, \$10 per acre for soybeans, \$8 per acre for wheat, \$40 for upland cotton, \$17 per acre for rice and \$15 per acre for peanuts.

As described in the previous section, these policy changes result in changes in crop production and prices that also have an effect on producer income. For example, modest reductions in market prices reduce the per-acre market value of production by about \$5 for corn and \$14 for upland cotton. In contrast, higher prices increase the market value of production by about \$5 for rice and \$13 for peanuts, offsetting a small portion of the reduction in government payments relative to the Baseline.

In the **House Committee** bill, the combination of PLC, RLC, SCO and STAX provide similar levels of average support to producers of corn, soybeans and cotton relative to that provided by the Senate bill. In contrast, average producer program benefits are far greater under the House Committee bill for wheat, rice, barley and peanuts. These programs provide an average of about \$17 per acre for corn, \$9 per acre for soybeans, \$14 per acre for wheat, \$41 per acre for upland cotton \$94 per acre for rice and \$86 per acre for peanuts. For most crops, prices are lower under the House Committee bill than under the Senate bill, so the market value of production per acre is also lower.

The reported payments and net indemnities represent an average of results across 500 different market outcomes and five marketing years. For any given producer, there will be no direct benefits received from these programs in some years, but benefits could be very large when prices or yields decline. The reported results are also an average across all production, weighted by assumed participation rates in the various program options. Participants in any given program may have very different results than suggested by these averages.

Note that other changes that are included in the bill but that are beyond the scope of this report would also affect producer returns and payments. For example, other changes in the crop insurance program, reductions in the CRP acreage cap and the proposed changes in the SNAP program would all have at least some impact on commodity market prices and producer returns.

Table 9a. Crop returns*, dollars per acre, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Corn						
Market sales/acre	805.61	800.42	-5.19	803.17	-2.44	2.75
Marketing loans/acre	0.00	0.00	0.00	0.00	0.00	0.00
ACRE/acre	3.50	0.00	-3.50	0.00	-3.50	0.00
Sen. ARC or House RLC/acre	0.00	18.18	18.18	6.38	6.38	-11.80
House PLC/acre	0.00	0.00	0.00	6.19	6.19	6.19
Insurance net indemnities/acre	18.97	21.85	2.87	23.63	4.66	1.79
Sum of above/acre	828.08	840.45	12.36	839.38	11.29	-1.07
Direct payments/base acre	23.40	0.00	-23.40	0.00	-23.40	0.00
CCPs/base acre	0.00	0.00	0.00	0.00	0.00	0.00
(DPs + CCPs)/base acre	23.41	0.00	-23.41	0.00	-23.41	0.00
Soybeans						
Market sales/acre	514.32	514.08	-0.24	515.96	1.64	1.88
Marketing loans/acre	0.01	0.01	0.00	0.01	0.00	0.00
ACRE/acre	3.14	0.00	-3.14	0.00	-3.14	0.00
Sen. ARC or House RLC/acre	0.00	8.70	8.70	3.03	3.03	-5.67
House PLC/acre	0.00	0.00	0.00	2.90	2.90	2.90
Insurance net indemnities/acre	8.74	10.39	1.66	11.42	2.69	1.03
Sum of above/acre	526.21	533.18	6.97	533.32	7.11	0.13
Direct payments/base acre	11.10	0.00	-11.10	0.00	-11.10	0.00
CCPs/base acre	0.01	0.00	-0.01	0.00	-0.01	0.00
(DPs + CCPs)/base acre	11.12	0.00	-11.12	0.00	-11.12	0.00
Wheat						
Market sales/acre	273.92	273.75	-0.17	272.32	-1.60	-1.43
Marketing loans/acre	0.10	0.13	0.02	0.17	0.06	0.04
ACRE/acre	1.88	0.00	-1.88	0.00	-1.88	0.00
Sen. ARC or House RLC/acre	0.00	6.29	6.29	1.25	1.25	-5.03
House PLC/acre	0.00	0.00	0.00	9.88	9.88	9.88
Insurance net indemnities/acre	19.67	21.17	1.50	22.15	2.49	0.98
Sum of above/acre	295.57	301.33	5.76	305.77	10.20	4.43
Direct payments/base acre	14.66	0.00	-14.66	0.00	-14.66	0.00
CCPs/base acre	0.18	0.00	-0.18	0.00	-0.18	0.00
(DPs + CCPs)/base acre	14.84	0.00	-14.84	0.00	-14.84	0.00
Upland cotton						
Market sales/acre	786.98	773.19	-13.79	773.90	-13.08	0.71
Marketing loans/acre	3.98	5.48	1.50	5.38	1.40	-0.10
ACRE/acre	0.03	0.00	-0.03	0.00	-0.03	0.00
Insurance net indemnities/acre	33.35	73.08	39.73	74.25	40.89	1.16
Sum of above/acre	824.34	851.75	27.41	853.52	29.18	1.77
Direct payments/base acre	33.72	0.00	-33.72	0.00	-33.72	0.00
CCPs/base acre	1.94	0.00	-1.94	0.00	-1.94	0.00
(DPs + CCPs)/base acre	35.65	0.00	-35.65	0.00	-35.65	0.00

*Note: ACRE, CCP, ARC, RLC, PLC payments and crop insurance net indemnities are averages across all producers, weighted by program participation rates. Thus payments for participants in particular programs will be greater than the figures shown whenever participation rates are less than 100%.

Table 9b. Crop returns*, dollars per acre, 2013-2017 average, continued

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Rice						
Market sales/acre	986.01	990.54	4.53	956.86	-29.16	-33.68
Marketing loans/acre	0.00	0.00	0.00	0.00	0.00	0.00
ACRE/acre	0.25	0.00	-0.25	0.00	-0.25	0.00
Sen. ARC or House RLC/acre	0.00	14.38	14.38	0.14	0.14	-14.24
House PLC/acre	0.00	0.00	0.00	87.87	87.87	87.87
Insurance net indemnities/acre	7.49	10.00	2.51	13.78	6.29	3.78
Sum of above/acre	993.75	1,014.91	21.16	1,058.65	64.90	43.74
Direct payments/base acre	95.94	0.00	-95.94	0.00	-95.94	0.00
CCPs/base acre	0.22	0.00	-0.22	0.00	-0.22	0.00
(DPs + CCPs)/base acre	96.16	0.00	-96.16	0.00	-96.16	0.00
Sorghum						
Market sales/acre	310.54	310.01	-0.53	310.92	0.37	0.90
Marketing loans/acre	0.00	0.00	0.00	0.00	0.00	0.00
ACRE/acre	0.74	0.00	-0.74	0.00	-0.74	0.00
Sen. ARC or House RLC/acre	0.00	5.86	5.86	1.45	1.45	-4.41
House PLC/acre	0.00	0.00	0.00	4.18	4.18	4.18
Insurance net indemnities/acre	20.95	21.69	0.74	22.55	1.61	0.86
Sum of above/acre	332.23	337.56	5.33	339.11	6.87	1.54
Direct payments/base acre	16.50	0.00	-16.50	0.00	-16.50	0.00
CCPs/base acre	0.00	0.00	0.00	0.00	0.00	0.00
(DPs + CCPs)/base acre	16.50	0.00	-16.50	0.00	-16.50	0.00
Barley						
Market sales/acre	360.14	359.64	-0.49	352.31	-7.82	-7.33
Marketing loans/acre	0.02	0.03	0.01	0.04	0.01	0.01
ACRE/acre	1.72	0.00	-1.72	0.00	-1.72	0.00
Sen. ARC or House RLC/acre	0.00	6.70	6.70	0.78	0.78	-5.92
House PLC/acre	0.00	0.00	0.00	25.24	25.24	25.24
Insurance net indemnities/acre	11.83	12.89	1.06	14.09	2.26	1.20
Sum of above/acre	373.70	379.26	5.55	392.45	18.75	13.20
Direct payments/base acre	9.25	0.00	-9.25	0.00	-9.25	0.00
CCPs/base acre	0.05	0.00	-0.05	0.00	-0.05	0.00
(DPs + CCPs)/base acre	9.30	0.00	-9.30	0.00	-9.30	0.00
Peanuts						
Market sales/acre	924.46	937.53	13.06	889.42	-35.04	-48.10
Marketing loans/acre	4.74	3.67	-1.06	5.22	0.49	1.55
ACRE/acre	0.05	0.00	-0.05	0.00	-0.05	0.00
Sen. ARC or House RLC/acre	0.00	12.86	12.86	0.13	0.13	-12.73
House PLC/acre	0.00	0.00	0.00	78.61	78.61	78.61
Insurance net indemnities/acre	26.52	29.12	2.59	33.40	6.88	4.28
Sum of above/acre	955.76	983.17	27.41	1,006.78	51.02	23.61
Direct payments/base acre	45.84	0.00	-45.84	0.00	-45.84	0.00
CCPs/base acre	16.25	0.00	-16.25	0.00	-16.25	0.00
(DPs + CCPs)/base acre	62.09	0.00	-62.09	0.00	-62.09	0.00

*Note: ACRE, CCP, ARC, RLC, PLC payments and crop insurance net indemnities are averages across all producers, weighted by program participation rates. Thus payments for participants in particular programs will be greater than the figures shown whenever participation rates are less than 100%.

Base acreage vs. planted acreage

Base acreage was determined by cropping patterns from many years ago, and today's planted acreage can be very different, both on a particular farm and for the country as a whole. Producers with a lot of base acreage relative to planted acreage will be the most affected by the loss of DCP payments. Producers with more planted acreage than base acreage may benefit from the shift to programs like ARC, PLC, RLC, SCO and STAX. These new programs are tied to actual planted area, even though ARC, PLC and RLC do retain some limits on eligible area. U.S. planted acreage far exceeds base acreage for soybeans, while the reverse is true for wheat, upland cotton, sorghum, barley and rice (Table 10).

Across 10 major crops, national base acreage is 2 percent greater than projected 2013-2017 planted acreage. This is a closer match between planted and base acreage than occurs for any particular crop. It suggests that on average, total base acreage across all crops matches overall area planted to grains, oilseeds and cotton, but that the current planted acreage mix may be very different than the allocation of base acreage.

Because DCP payments are tied to base acreage, many producers are currently receiving DCP payments tied to a historical mix of crops on a farm that no longer matches current production patterns. Under the House Committee and Senate bills, benefits are tied to production of particular commodities. This can confuse comparisons of the impact of the bills on payments to producers of particular crops. Many current soybean producers, for example, are receiving DCP payments associated with other crops. Likewise, many producers receiving wheat, cotton and rice DCP payments are actually planting other crops or devoting their land to other uses.

The proposed shift from payments tied to base acreage to payments tied to planted acreage helps explain some of the production and price impacts discussed earlier. Because DCP payments are tied to base acreage and do not require producers to grow any particular crop or even any crop at all, they probably have a smaller impact on planted acreage, dollar-for-dollar, than programs that do require current production. Thus, the results show slightly more area planted to major crops under the two bills than in the Baseline, even though the sum of government payments and crop insurance net indemnities is lower.

Table 10. Planted and base area in the Baseline, million acres, 2013-2017 average

	Planted area	Baseline base area	Absolute difference	Percent difference
Corn	91.78	84.12	-7.66	-8.3%
Soybeans	74.42	50.16	-24.25	-32.6%
Wheat	55.13	73.09	17.96	32.6%
Upland cotton	11.68	18.11	6.42	55.0%
Sorghum	5.34	11.65	6.30	118.0%
Barley	2.93	8.42	5.48	186.9%
Oats	3.06	2.99	-0.06	-2.1%
Rice	3.10	4.39	1.29	41.6%
Peanuts	1.27	1.48	0.20	15.9%
Sunflower seed	1.84	1.77	-0.06	-3.5%
10-crop total	250.56	256.18	5.62	2.2%

Government budgetary outlays

The farm bill provisions examined in this report reduce average levels of budgetary outlays on farm programs and crop insurance (Table 11).

Eliminating the DCP and ACRE programs would reduce farm program outlays by an estimated \$51 billion over the next ten fiscal years. The reduction would be even larger, but direct payments associated with the 2012 crop will be made in October 2012, which is part of fiscal year 2013.

In the **Senate** bill, some of the savings associated with eliminating the DCP and ACRE programs is offset by the cost of the new ARC, SCO and STAX programs. The estimated 10-year budgetary effect of the provisions examined is to reduce net outlays by \$12.9 billion relative to the Baseline. Expenditures by the Commodity Credit Corporation (CCC) for traditional farm programs and ARC are reduced by a net of \$24.4 billion, while crop insurance costs associated with SCO, STAX and changes in producer participation and coverage levels increase net outlays by \$11.5 billion.

CBO estimated that the same set of program changes would reduce net outlays by \$18.0 billion. Most of the \$5 billion difference can be explained by greater FAPRI-MU estimates of the cost of changes in crop insurance programs. One source of difference is the assumption here that SCO and STAX would both be effective for crops harvested in 2013, while CBO assumes that neither program would be available until the following year. FAPRI-MU estimates greater SCO costs in part because of assumptions about program participation levels. In addition, CBO assumes a larger reduction in conventional crop insurance coverage levels and budgetary costs in response to the introduction of the new programs.

While a \$5 billion difference in outlay estimates is obviously very significant, it is relatively small compared to the magnitude of the changes in outlays caused by the elimination of the DCP and ACRE programs and the uncertainties associated with estimating fiscal costs of new and complex programs.

In the **House Committee** bill, the new PLC, RLC, STAX and SCO provisions offset some of the savings from eliminating the DCP and ACRE programs. The estimated 10-year budgetary effect of the provisions examined is to reduce net outlays by \$12.9 billion relative to the Baseline. Expenditures by the Commodity Credit Corporation (CCC) for traditional farm programs, PLC and RLC are reduced by a net of \$28.5 billion, while crop insurance costs associated with SCO, STAX and changes in producer participation and coverage levels increase net outlays by \$15.7 billion.

The CBO estimate for the same set of policy changes was a net outlay reduction of \$18.5 billion. As with the Senate bill, crop insurance provisions account for most of the difference between CBO and FAPRI-MU estimates. CBO estimated the 10-year cost of SCO at \$4.0 billion, compared to \$8.2 billion in this analysis. Differences in assumed participation rates account for much of the difference, and the difference in assumed implementation dates also contributes. As shown in the final section of the report, SCO costs could be far greater than estimated here if all producers took advantage of the program.

Outlays under the House Committee bill would be greater if the bill had adopted the same payment schedule for PLC and RLC as the Senate bill establishes for ARC. Senate ARC payments can be made after the five-month price is known, so payments associated with the 2013 crop can be made by early 2014, part of fiscal year 2014. In contrast, the corresponding PLC and RLC payments cannot be made until October 2014, which is part of fiscal year 2015. Thus, there is one less year of PLC and RLC payments in the 10-year budget window in the House Committee bill than there are ARC payments in the Senate bill. The timing of these payments accounts for approximately a \$3 billion difference in 10-year outlays.

Table 11. Government budgetary outlays, million dollars, FY 2013 – FY 2022 total*

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
CCC net outlays	90,046	65,672	-24,374	61,531	-28,514	-4,141
Corn	22,642	17,601	-5,041	11,779	-10,863	-5,822
Soybeans	7,802	7,444	-358	4,688	-3,114	-2,756
Wheat	11,782	4,475	-7,307	6,057	-5,726	1,582
Upland cotton	7,286	1,910	-5,376	1,893	-5,393	-18
Rice	4,245	887	-3,358	2,558	-1,686	1,671
Peanuts	1,011	338	-673	1,096	85	759
Sorghum	1,922	481	-1,442	434	-1,488	-47
Barley	796	261	-536	691	-105	431
Conservation reserve	22,396	22,007	-389	22,115	-281	108
All other	10,163	10,268	106	10,219	57	-49
Crop insurance net outlays	77,966	89,463	11,498	93,624	15,659	4,161
STAX net indemnities	0	4,646	4,646	4,773	4,773	128
SCO net indemnities	0	5,117	5,117	8,196	8,196	3,079
All other	77,966	79,701	1,735	80,655	2,689	955
CCC + crop insurance	168,011	155,135	-12,876	155,156	-12,856	20

*The FAPRI-MU model only makes outlay estimates through FY 2021. For purposes of this table, it is assumed that FY 2022 outlays equal those in FY 2021.

Government costs and payments in perspective

Figures 1 and 2 provide two of many possible ways to compare budgetary effects of the bills across commodities.

Figure 1 shows percentage **changes in budgetary outlays** (CCC outlays plus crop insurance net indemnities) relative to the Baseline for the FY 2013 – FY 2022 period. Under the Senate bill, the largest proportional declines in outlays occur for rice, and outlays for sorghum, barley and peanuts also decline by more than the 19 percent weighted average for major crops. The reductions in corn and net outlays are proportionally small, and soybean outlays actually increase.

Under the House Committee bill, the pattern is very different. Relative to the Senate bill, outlays for corn and soybeans are smaller, upland cotton and sorghum outlays are about the same, but wheat, barley, rice and peanut outlays are higher. Instead of taking a larger-than-proportional cut as in the Senate bill, peanut net outlays actually exceed Baseline levels.

Figure 2 shows average **benefits as a share of total receipts** for each of the bills. The measure of benefits includes ARC, PLC, RLC and marketing loan payments as well as crop insurance net indemnities from both conventional crop insurance and from the new STAX and SCO programs. Total receipts are the sum of these benefits and the market value of production (average market price times production).

By this measure, benefits under the Senate bill are greater for wheat, sorghum and cotton than for the other major crops. In the case of wheat and sorghum, this is largely because crop insurance benefits under existing programs are a greater share of producer income than is the case for other crops, while for upland cotton, the new STAX program provides larger benefits as a share of producer income than do the ARC and SCO programs for other crops.

Under the House bill, the measured benefits to corn and soybean producers account for less than 5 percent of total producer revenue, while the benefits for most other crops average about 10 percent of total revenue. In sharp contrast to the Senate bill, the estimated benefits to peanut producers are the greatest relative to total revenue.

Objections could be raised to these and any other indicators of “equity” across commodities. For example, the measured benefits in Figure 2 consider farm program payments and crop insurance net indemnities, but do not consider other policies that affect producer returns. Corn and soybean producers benefit from the Renewable Fuel Standard and other biofuel policies, for example, and considering the effects that such policies have on market prices would change the comparison of benefits across crops.

Figure 1. Change in CCC net outlays and crop insurance net indemnities relative to the Baseline, fiscal years 2013-2022

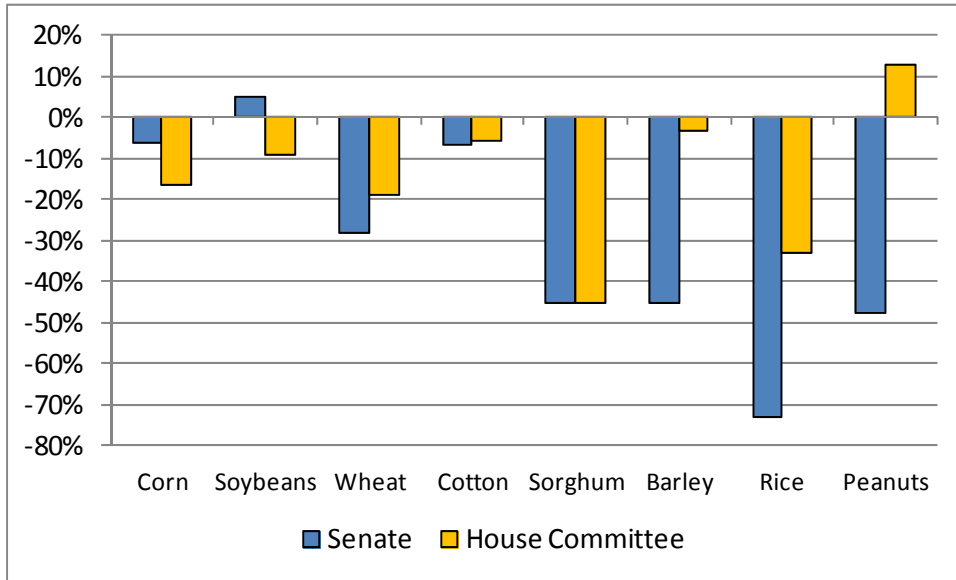
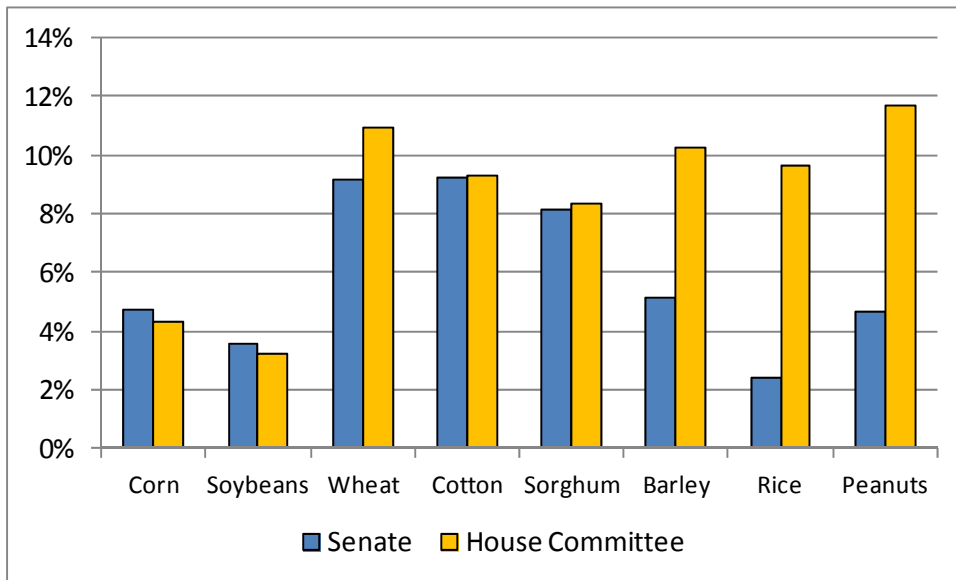


Figure 2. Payments and net indemnities as a share of total receipts, crop years 2013-2017



Farm income, farm real estate values and consumer food expenditures

Reduced government support contributes to a lower **net farm income** (Table 12) under the House Committee and Senate bills.

In the **Senate bill**, annual government payments are \$3.2 billion less than in the Baseline. Crop insurance net indemnities (total indemnities minus producer-paid premiums) increase by \$0.9 billion, so the sum of program-related support falls by an average of \$2.3 billion. Small changes in production and prices result in small changes in crop and livestock receipts, feed costs and other production costs. Reduced government support reduces the demand for land, so rental payments to nonoperator landlords decline by \$0.5 billion. The net effect of all these changes is a \$2.0 billion reduction in annual net farm income compared to the Baseline.

In the **House Committee bill**, annual government payments also decline by an estimated \$3.2 billion relative to the Baseline. Because of differences in SCO provisions and participation, however, crop insurance net indemnities increase by an annual average of \$1.3 billion relative to the Baseline and \$0.3 billion relative to the Senate bill. With similar changes in other components of the farm income accounts, net farm income falls by an annual average of \$1.6 billion relative to the Baseline but is \$0.4 billion more than under the Senate bill.

A careful comparison of the government cost and farm income accounts may raise the question of why the annual difference in net farm income between the two bills is greater than the difference in government support levels. The answer is primarily an accounting quirk. As described previously, 10-year net government outlays are approximately \$3 billion lower in the House bill than they would have been had it not been for the provision requiring that PLC and RLC payments not be made until after October 1. This shifts the fiscal year in which payments occur, but not the calendar year. Because government outlays are measured on a fiscal year basis and net farm income on a calendar year basis, this explains about \$300 million of the annual discrepancy between the reported average changes in net farm income and government outlays.

The reduction in net farm income corresponds to a reduction in **farm real estate values** (Table 13). Under the Senate bill, average values fall by \$39 per acre, or a little more than 1 percent, relative to the baseline. Values are slightly higher in the House Committee bill than under the Senate bill, but are still about 1 percent below Baseline levels. These estimates reflect averages across all farm real estate, including land used for crop production and land used for hay and pasture. The proportional reduction would be larger in parts of the country experiencing larger net reductions in program benefits. Differences in results between the two bills could be quite large in parts of the country where the two bills provide very different levels of government support, such as in rice and peanut producing regions.

Consumer food expenditures are almost unchanged from the Baseline under each of the two bills (Table 14). This is consistent with generally small changes in crop production and farm-level crop and livestock prices, and with the fact that farm commodity prices account for a small proportion of overall consumer-level food costs.

Table 12. Farm income, billion dollars, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Crop receipts	202.68	202.48	-0.20	202.66	-0.02	0.18
Livestock receipts	171.31	171.21	-0.09	171.31	0.01	0.10
Government payments	10.64	7.41	-3.24	7.42	-3.22	0.02
Crop insurance indemnities	8.80	10.05	1.25	10.53	1.73	0.48
Rental payments to nonoperators	14.17	13.64	-0.53	13.72	-0.45	0.08
Feed costs	52.04	51.90	-0.14	52.02	-0.03	0.11
Crop insurance premiums*	3.94	4.26	0.31	4.41	0.46	0.15
Other production costs	273.81	273.81	0.00	273.92	0.11	0.11
Other net farm income	39.58	39.51	-0.08	39.55	-0.03	0.05
Net farm income	89.06	87.04	-2.01	87.41	-1.64	0.37

*Producer-paid premiums

Table 13. Farm real estate values, dollars per acre, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Average farm real estate value	2,813.50	2,774.53	-38.97	2,781.36	-32.14	6.82

Table 14. Consumer food expenditures, billion dollars, 2013-2017 average

	Baseline	Senate ARC/STAX/SCO		House PLC/RLC/STAX/SCO		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. Senate
Total food expenditures	1,425.77	1,425.65	-0.12	1,425.73	-0.04	0.08

Variability in program costs and benefits

Current and proposed farm programs differ greatly in the variability of program costs and benefits. The existing DP program is very predictable; unless there is a change in law, spending will be about \$5 billion every year. Projected prices are high enough that CCPs are not likely to occur very frequently even if current laws were extended. ACRE benefits would show more annual variation, but low program participation rates limit budgetary exposure. Crop insurance accounts for most of the variability in farm program outlays under current farm bill provisions, as indemnity payments can change dramatically from one year to the next depending on crop yields and prices.

Figure 3 shows the **Baseline** distribution of the sum of net outlays by the CCC and the Federal Crop Insurance Corporation (FCIC) for traditional farm programs and crop insurance. While the figures change a bit from year to year, the average annual outlays are \$16.8 billion per year.

In some years, crop insurance expenditures will be much greater than the average, and occasionally the ACRE and CCP programs would have some modest level of expenditures. In 10 percent of the 500 cases examined for any given year, total outlays are at least \$3.5 billion greater than the average. Likewise, there will be years where crop insurance claims would be limited and there would be no significant CCP or ACRE expenditures. In 10 percent of the results for any given year, total outlays are at least \$2.7 billion below the average across all 500 outcomes.

The Senate and the House Committee bills both replace very predictable DPs with new programs where spending is very sensitive to market conditions. Under the **Senate** bill, spending on ARC, STAX and SCO are likely to be lower on average than spending the programs they replace, so average CCC and FCIC net outlays average \$15.5 billion per year (Figure 4).

When revenues decline, the new programs can result in large program outlays. In 10 percent of the 500 market outcomes for any given year, net outlays exceed the average level by more than \$5.2 billion. In other words, even though average outlays are much lower under the Senate bill than in the baseline, payments can in extreme cases be as high or even higher than under current law. There are also more circumstances that result in much lower levels of expenditures under the Senate bill. In 10 percent of the cases for a given year, net outlays under the Senate bill are at least \$4.6 billion below the average, and thus are far below levels of support that would be provided under Baseline policies.

Even though the set of policies included in the **House Committee** bill is very different from the Senate bill package, the distribution of payments is generally similar (Figure 5). The average levels of projected spending given the assumptions of this analysis are almost identical under the Senate and House Committee bills, and even the shape of the distribution is very similar. As with the Senate bill, spending can be even greater than in the Baseline under some circumstances, but in other cases, spending will be far below Baseline levels.

One obvious difference between the two bills occurs in fiscal year 2014. Average net CCC and crop insurance outlays fall by \$1.3 billion relative to the Baseline under the Senate bill, but by \$3.5 billion under the House Committee bill. This is related to the timing of payments issue discussed previously. In the Senate bill, ARC payments associated with the 2013 crop are made in fiscal year 2014, but in the House Committee bill, PLC and RLC payments associated with the 2013 crop are not made until fiscal year 2015. Because of this difference in fiscal year 2014, the average level of spending under the two bills is almost identical even though spending under the House Committee bill is higher than under the Senate bill in every other year.

Figure 3. Distribution of CCC plus crop insurance outlays under Baseline policies, fiscal year

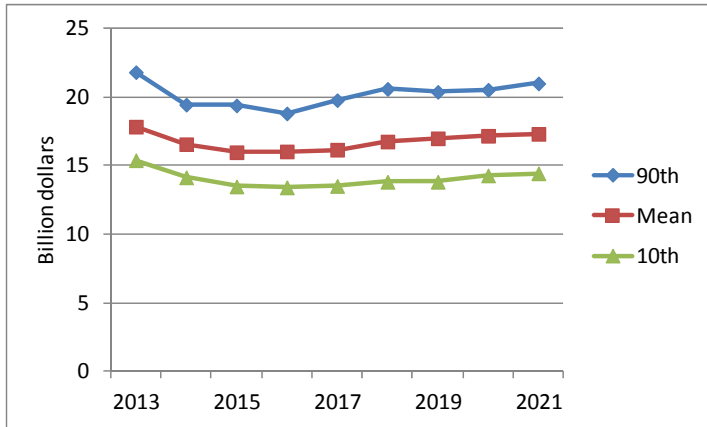


Figure 4. Distribution of CCC plus crop insurance outlays under the Senate bill, fiscal year

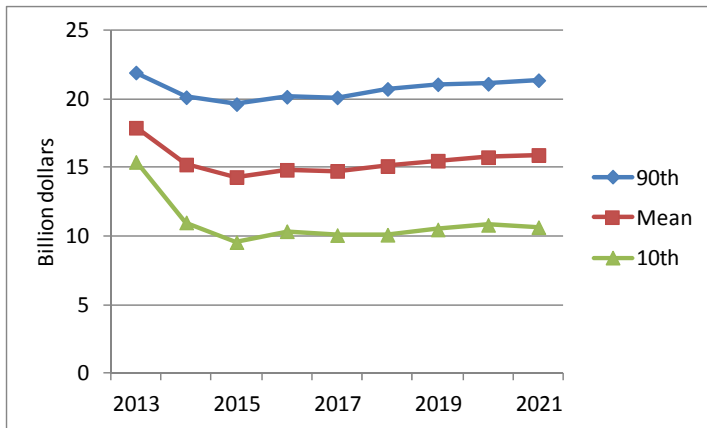
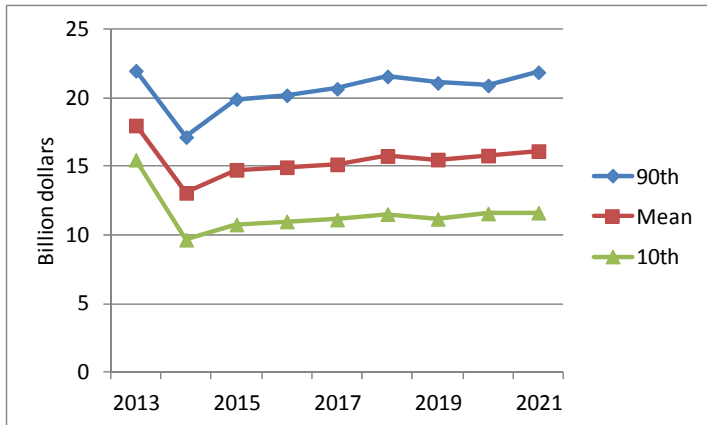


Figure 5. Distribution of CCC plus crop insurance outlays under the House Committee bill, fiscal year



Effects of alternative SCO participation assumptions

How farmers will respond to the participation choices they will face under either of the two bills is uncertain. To illustrate just how important one of those choices could be, sensitivity analysis is conducted. The scenario examined makes the extreme assumption that, under the House Committee bill, all eligible producers choose to participate in PLC and purchase the maximum amount of coverage available under SCO (Table 15).

Because 70 percent of SCO premiums are subsidized by taxpayers, increasing SCO participation results in much higher levels of **government outlays**. SCO net indemnities increase to a total of \$25 billion over the next ten years, a \$17 billion increase relative to the basic scenario assuming much lower participation rates. The increase in crop insurance participation and premiums results in additional increases in outlays associated with delivery costs and underwriting gains.

Net CCC outlays decrease slightly. For corn and soybeans, PLC payments are smaller than RLC payments, so when producers shift from RLC to PLC, it reduces CCC outlays. However, the increase in crop insurance outlays far outweighs the savings in CCC expenditures, so total government outlays exceed those in the scenario with lower SCO participation rates by \$21 billion. Instead of reducing the deficit by \$13 billion, the examined provisions of the House Committee bill with 100 percent SCO participation would actually increase the deficit by \$8 billion over the next 10 years.

The increase in government outlays is, of course, associated with increased **program benefits** to producers. The sum of PLC payments and SCO net indemnities would average \$27 per acre for corn producers, for example, while the weighted-average sum of PLC, RLC and SCO payments was just \$18 per acre in the scenario assuming lower levels of SCO participation. The story is similar for other commodities. For all major commodities, the optimal decision appears to be for farmers to choose the combination of PLC and the maximum permitted level of SCO coverage.

With greater average returns to producers, the scenario with 100 percent SCO participation results in more **area planted** for most crops and a resulting slight reduction in average **market prices**.

The increase in program benefits results in greater net farm income. Compared to the scenario with lower SCO participation rates, annual net farm income is \$1.2 billion higher in the scenario with 100 percent SCO participation. Perhaps more surprising is the result that net farm income is slightly lower than in the Baseline, even though the increase in crop insurance net indemnities in the 100 percent SCO scenario is essentially the same as the reduction in government payments. This occurs because replacing direct payments that have small production effects with new policies that are more closely tied to current production results in more crop production and lower market prices. Lower prices translate into lower cash receipts from marketings, and increased acreage raises some production expenses.

These results confirm the AFPC analysis (<http://www.afpc.tamu.edu/pubs/0/573/WP%2012-2.pdf>) showing that SCO participation is optimal for representative farms. It also helps explain the AFPC result that farms would have better financial results under the House Committee bill than under the Senate bill. However, if every producer chose the combination of PLC and SCO, the total fiscal cost of the House Committee bill would be much greater than CBO has estimated, and much greater than the results reported here assuming lower SCO participation rates.

This scenario demonstrates the sensitivity of results to SCO participation assumptions. We continue to expect that many producers will not choose to purchase SCO, in part because of the premium cost.

Table 15. Impacts of higher SCO participation rates

	Baseline	House with assumed rates		House with 100% PLC-SCO participation		
		Level	Change vs. Baseline	Level	Change vs. Baseline	Change vs. assumed rate
Government outlays (FY 2013-FY 2022 total, \$ bil.)						
CCC net outlays	90.05	61.53	-28.51	60.64	-29.40	-0.89
SCO net indemnities	0.00	8.20	8.20	25.46	25.46	17.26
Other crop insurance net costs	77.97	85.43	7.46	90.34	12.37	4.91
Sum of above	168.01	155.16	-12.86	176.44	8.43	21.28
PLC/RLC/SCO/STAX benefits (2013-2017 average, \$/acre)						
Corn	0.00	17.52	17.52	27.09	27.09	9.56
Soybeans	0.00	8.69	8.69	14.01	14.01	5.32
Wheat	0.00	14.05	14.05	19.73	19.73	5.68
Upland cotton	0.00	40.89	40.89	40.93	40.93	0.04
Sorghum	0.00	7.50	7.50	11.17	11.17	3.66
Barley	0.00	28.86	28.86	34.66	34.66	5.81
Rice	0.00	94.72	94.72	103.19	103.19	8.47
Peanuts	0.00	85.62	85.62	96.34	96.34	10.73
Area planted (2013-2017 average, mil. acres)						
Corn	91.78	91.85	0.07	91.99	0.20	0.14
Soybeans	74.42	74.23	-0.19	74.22	-0.20	-0.01
Wheat	55.13	55.34	0.21	55.63	0.50	0.29
8 other crops	31.27	31.67	0.39	31.68	0.41	0.02
12-crop total	252.61	253.09	0.48	253.52	0.91	0.43
Prices (2013-2017 average, \$/bushel)						
Corn	4.81	4.79	-0.02	4.77	-0.04	-0.02
Soybeans	11.42	11.45	0.03	11.44	0.02	-0.01
Wheat	5.95	5.91	-0.04	5.87	-0.08	-0.04
Net farm income (2013-2017 average, \$ bil.)						
Crop receipts	202.68	202.66	-0.02	202.38	-0.30	-0.28
Livestock receipts	171.31	171.31	0.01	171.23	-0.08	-0.08
Government payments	10.64	7.42	-3.22	7.37	-3.27	-0.05
Crop insurance net indemnities	4.86	6.12	1.26	8.04	3.18	1.92
Rental payments to nonoperators	14.17	13.72	-0.45	13.91	-0.26	0.19
Other production costs	325.85	325.94	0.08	326.02	0.17	0.08
Other net farm income	39.58	39.55	-0.03	39.49	-0.09	-0.06
Net farm income	89.06	87.41	-1.64	88.59	-0.47	1.17

Final comments

The introduction of new, complex policies creates challenges for analysts, and results are dependent on the models and assumptions that are used. Over time, models will be enhanced to better reflect new policies.

Changes in the agricultural market outlook would result in different estimates, and some of the differences could be large. The current drought, for example, is likely to result in higher corn and soybean prices for the 2012 crop than was estimated in the Baseline that was prepared in early 2012. There will almost certainly be some implications for prices in subsequent years as well, although it is not immediately obvious that average prices for the 2013 and subsequent crops will be systematically higher or lower than in the Baseline used here. Even if 2013-2021 prices are unchanged, however, the likely higher 2012 prices for corn and soybeans will increase ARC and RLC benchmark calculations in later years, increasing payments under those programs, all else equal.

If future average prices are sharply lower than FAPRI-MU currently projects, estimated ARC and RLC spending would be greater, especially in the early years. If prices dropped sharply and stayed low, the ARC and RLC benchmarks based on moving averages of prices and yields would eventually adjust downward and limit spending in the longer term (although RLC puts an effective floor on the prices used in the benchmark calculations, and ARC does so for rice and peanuts). PLC payments, in contrast, will be zero if market prices remain above reference prices, but could be very large and would remain very large if payments fell well below the proposed reference prices and stayed low.

The analysis also depends on many assumptions about program implementation, some of which may be important. Experience with the ACRE program shows that assumptions about how a program will be implemented in practice will often prove incorrect. Program implementation could have important implications for program participation decisions, program outlays and on many other indicators.