

Food and Agricultural
Policy Research Institute



May 2007

#11-07

Staff Report

Impacts of Three Provisions in the Administration's 2007 Farm Bill Proposal

www.fapri.missouri.edu

(573) 882-3576

Providing objective analysis for over twenty years

Published by the Food and Agricultural Policy Research Institute at The University of Missouri–Columbia, 101 Park DeVillle Suite E; Columbia, MO 65203 in May 2007. FAPRI is part of the College of Agriculture, Food and Natural Resources.

<http://www.fapri.missouri.edu>

Material in this publication is based upon work supported by the Cooperative State Research, Education and Extension Service; US Department of Agriculture, under Agreement No. 2006-34149-16987.

Any opinion, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

Permission is granted to reproduce this information with appropriate attribution to the authors and the Food and Agricultural Policy Research Institute. For more information, contact Pamela Donner, Coordinator Publications & Communications.

The University of Missouri–Columbia does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, age, disability or status as a qualified protected veteran. For more information, call Human Resource Services at 573-882-4256 or the U.S. Department of Education, Office of Civil Rights.

TABLE OF CONTENTS

SUMMARY	1
THE SCENARIOS.....	3
MODELING APPROACH	6
RESULTS	6
Average market receipts and payments.....	7
Market receipts and payments over time	9
Upland cotton market receipts and payments under different market conditions.....	11
Returns tied to production and payments tied to base acreage	15
Crop acreage.....	17
Crop prices.....	17
Crop demand.....	17
Farm program outlays	19
Net farm income	21
Farm real estate values	21
World Trade Organization producer support measures.....	23

Summary

The Administration's 2007 farm bill proposal includes many provisions that would affect agricultural commodity markets. The three provisions examined in this report are:

- 1) proposed increases in direct payment rates,
- 2) proposed reductions in loan rates for many commodities, and
- 3) replacement of the current countercyclical payment program with a revenue-based program.

These provisions are evaluated separately and jointly relative to the Food and Agricultural Policy Research Institute's 2007 stochastic baseline for U.S. agricultural markets. Here are some highlights of the results, as summarized in Table 1:

- Increases in direct payment rates have only small impacts on agricultural commodity markets.
- Reducing loan rates reduces average returns to cotton production, resulting in less area planted to upland cotton and more area planted to other crops.
- The proposed countercyclical revenue program has relatively modest impacts on average producer payments, crop supply, government program outlays and farm income. Upland cotton and peanuts are affected more than other commodities.
- Relative to the current countercyclical payment program, the countercyclical revenue program would make more payments when low yields reduce national average producer returns, but fewer payments when low prices are caused by above-average yields.
- Considering the three provisions jointly, net government spending by the Commodity Credit Corporation increases by a total of \$1.1 billion over fiscal years 2008-2012.
- Net farm income increases by an annual average of \$260 million over calendar years 2008-2012 when the three provisions are implemented jointly.
- Under current program formulas, an increase in direct payments reduces countercyclical payments. Under the proposal, the calculation of countercyclical revenue payments is not affected by changes in direct payment rates. Thus, the taxpayer cost of implementing the three provisions jointly is greater than the combined cost of them considered separately.

Other provisions of the Administration's farm bill proposal are also likely to have important effects on commodity markets, government program costs, and farm income, but they are beyond the scope of this analysis.

Table 1. Impacts of Three Provisions of the Administration's Farm Bill Proposal

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Payments	(Million Dollars, 2008/09 - 2012/13 Average)				
Direct Payments	5,259	649	0	0	649
Marketing Loan Benefits	588	-10	-297	2	-297
Countercyclical Payments	984	-379	72	-85	8
Sum	6,832	260	-225	-84	360
Net CCC Outlays	(Million Dollars)				
Annual Average, FY08-FY12	11,454	255	-310	-12	219
5-Year Total, FY08-FY12	57,269	1,277	-1,551	-58	1,094
10-Year Total, FY08-FY17	112,147	2,058	-2,345	-1,684	1,249
Crop Planted Acreage	(Million Acres, 2008/09 - 2012/13 Average)				
Corn	89.96	0.01	0.05	0.00	0.06
Soybeans	70.14	0.03	0.09	-0.01	0.10
Wheat	57.92	0.04	0.12	-0.01	0.16
Upland Cotton	13.79	-0.10	-0.43	0.02	-0.42
8 Other Crops Plus Hay	83.46	0.02	0.06	-0.01	0.07
12 Crops + Hay	315.27	0.00	-0.10	0.00	-0.03
Market Receipts + Loan Benefits	(Dollars per Harvested Acre, 2008/09 - 2012/13 Average)				
Corn	507.70	-0.19	-0.77	0.00	-0.77
Soybeans	294.04	-0.12	-0.58	0.03	-0.65
Wheat	177.44	-0.08	-0.27	0.01	-0.33
Upland Cotton	561.58	0.93	-14.92	-0.11	-15.04
Rice	626.51	-0.06	-0.84	0.22	-0.68
Peanuts	682.84	-0.19	-2.83	1.68	-1.28
Direct and Countercyclical Payments	(Dollars per Base Acre, 2008/09 - 2012/13 Average)				
Corn	24.44	1.03	0.00	-0.09	0.95
Soybeans	12.10	1.15	0.10	-0.51	0.78
Wheat	15.36	0.69	0.01	-0.08	0.63
Upland Cotton	79.35	2.37	3.52	0.17	27.68
Rice	111.98	2.73	0.08	-4.12	0.15
Peanuts	80.36	0.88	1.10	-18.53	-15.18
Farm Income	(Million Dollars, 2008 - 2012 Average)				
Government Payments	11,091	334	-224	-35	407
Crop Receipts	147,487	-31	-138	6	-138
Livestock Receipts	128,357	-6	-26	1	-28
Rent to Nonoperator Landlords	13,640	90	-69	-1	103
Other Production Costs	254,771	-6	-171	5	-122
Other Net Farm Income	43,700	11	-23	-2	0
Net Farm Income	62,225	224	-170	-34	260
Average Farm Real Estate Value	(Dollars per Acre, 2008 - 2012 Average)				
	2,446	4	-3	0	4

Impacts of Three Provisions in the Administration's 2007 Farm Bill Proposal

The Administration's 2007 farm bill proposal includes a wide variety of provisions that would modify existing commodity programs. This report focuses on three of the provisions:

- 1) proposed increases in direct payment rates,
- 2) proposed reductions in loan rates for many commodities, and
- 3) replacement of the current countercyclical payment program with a program based on national per-acre revenues.

The Administration also proposes to change planting flexibility and payment limitation rules, increase payments to beginning farmers, change the way that the marketing loan program is administered, and make a variety of other changes to current farm programs. These other proposals may have important impacts, but they are beyond the scope of this report.

The scenarios

A description of the Administration's farm bill proposal can be found on the USDA website at <http://www.usda.gov/documents/07title1.pdf>. To evaluate the impact of the selected provisions, we constructed a baseline and four alternative scenarios (Table 2).

The **baseline** assumes a continuation of 2002 farm bill provisions. Direct payment rates, loan rates, target prices and payment formulas are all unchanged. Biofuel tax credits and tariffs are maintained at current levels, implying they are extended when they would otherwise expire.¹

The **higher direct payments** scenario incorporates the Administration's proposed increase in direct payment rates for program commodities. For feed grains, wheat, rice and peanuts, direct payment rates are held at current levels for the 2008/09 and 2009/10 marketing years. Rates for these commodities are then increased slightly in 2010/11 and are maintained at the new higher level through 2012/13. Direct payment rates then revert to the current level in 2013/14.

The Administration proposal treats upland cotton and soybeans differently. Upland cotton direct payment rates are increased from the current 6.67 cents per eligible pound to 11.08 cents per pound in 2008/09, and are maintained at that level in subsequent years. For soybeans, the direct payment rate is increased from the current \$0.44 per eligible bushel to \$0.47 in 2008/09 and 2009/10. The soybean direct payment rate is further increased to \$0.50 per eligible bushel in 2010/11 and maintained at that level until it reverts to \$0.47 per eligible bushel in 2013/14.

For purposes of this analysis, we assume that target prices and countercyclical payment rules remain unchanged in the higher direct payments scenario. Under current policies, countercyclical payments are triggered when season-average farm prices fall below the target price less the direct payment rate. Increasing the direct payment rate, therefore, has the effect of reducing the price that triggers countercyclical payments. This effect proves very important in evaluating the impacts of the provision, as it means that part of the increase in direct payments is offset by a reduction in countercyclical payments.

¹ The Congressional Budget Office baseline assumes that ethanol and biodiesel tax credits and the ethanol tariff expire as scheduled. The "FAPRI U.S. Baseline Briefing Book" includes a section examining the implications of allowing the tax credits and tariff to expire. The report can be found on the FAPRI website, http://www.fapri.missouri.edu/outreach/publications/2007/FAPRI_UMC_Report_02_07.pdf.

Table 2. Policy Assumptions of the Scenarios

	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Direct Payment Rates (Dollars per Bushel)					
Corn, 2008/09-2009/10, 2013/14+	0.28	0.28	0.28	0.28	0.28
Corn, 2010/11-2012/13	0.28	0.30	0.28	0.28	0.30
Soybeans, 2008/09-2009/10, 2013/14+	0.44	0.47	0.44	0.44	0.47
Soybeans, 2010/11-2012/13	0.44	0.50	0.44	0.44	0.50
Wheat, 2008/09-2009/10, 2013/14+	0.52	0.52	0.52	0.52	0.52
Wheat, 2010/11-2012/13	0.52	0.56	0.52	0.52	0.56
(Cents per Pound)					
Upland Cotton, 2008/09-2016/17	6.67	11.08	6.67	6.67	11.08
(Dollars per Hundredweight)					
Rice, 2008/09-2009/10, 2013/14+	2.35	2.35	2.35	2.35	2.35
Rice, 2010/11-2012/13	2.35	2.52	2.35	2.35	2.52
(Cents per Pound)					
Peanuts, 2008/09-2009/10, 2013/14+	1.80	1.80	1.80	1.80	1.80
Peanuts, 2010/11-2012/13	1.80	1.93	1.80	1.80	1.93
Loan Rates (Average of 500 Outcomes) (Dollars per Bushel)					
Corn, 2008/09-2012/13	1.95	1.95	1.89	1.95	1.89
Soybeans, 2008/09-2012/13	5.00	5.00	4.92	5.00	4.92
Wheat, 2008/09-2012/13	2.75	2.75	2.58	2.75	2.58
(Cents per Pound)					
Upland Cotton, 2008/09	52.00	52.00	41.85	52.00	41.85
Upland Cotton, 2009/10	52.00	52.00	41.26	52.00	41.26
Upland Cotton, 2010/11	52.00	52.00	43.40	52.00	43.39
Upland Cotton, 2011/12	52.00	52.00	45.45	52.00	45.44
Upland Cotton, 2012/13	52.00	52.00	47.26	52.00	47.24
(Dollars per Hundredweight)					
Rice, 2008/09-2012/13	6.50	6.50	6.50	6.50	6.50
(Cents per Pound)					
Peanuts, 2008/09	17.75	17.75	15.86	17.75	15.86
Peanuts, 2009/10	17.75	17.75	16.25	17.75	16.24
Peanuts, 2010/11	17.75	17.75	16.89	17.75	16.89
Peanuts, 2011/12	17.75	17.75	17.32	17.75	17.34
Peanuts, 2012/13	17.75	17.75	17.45	17.75	17.45
Countercyclical Revenue Trigger (Dollars per Acre, 2008/09 - 2012/13)					
Corn	n.a.	n.a.	n.a.	344.11	344.11
Soybeans	n.a.	n.a.	n.a.	219.74	219.74
Wheat	n.a.	n.a.	n.a.	140.39	140.39
Upland Cotton	n.a.	n.a.	n.a.	517.00	517.00
Rice	n.a.	n.a.	n.a.	548.05	548.05
Peanuts	n.a.	n.a.	n.a.	683.86	683.86

The analysis is based on the assumption that payment limitation rules will have the same proportional effect on payments as has been observed in recent years. The proposed increases in direct payment rates could result in more payments being restricted, but any such effect is not considered here. The effects of proposed changes in payment limitation rules are beyond the scope of this analysis.

The Administration's proposal to **lower loan rates** generally sets them at the lesser of two figures:

- 1) the loan rate for the commodity proposed in the 2002 House farm bill, or
- 2) 85 percent of an Olympic average (the average of the most recent five years, excluding the high and the low) of season-average farm prices.

For most commodities under most likely future market conditions, the practical effect of the Administration's proposal is to set new loan rates at the levels proposed in the 2002 House farm bill. Wheat, feed grain and soybean loan rates are all reduced slightly from current levels, as the House-passed farm bill called for lower loan rates for those commodities than the final conference report. For upland cotton and peanuts, loan rates are determined by the Olympic average of market prices. Table 2 reports the average loan rates resulting from stochastic analysis of 500 possible market outcomes, as described in the "modeling approach" section below.

The lower loan rates scenario assumes that target prices and direct payment rates remain at baseline levels. As with the increase in direct payment rates, a reduction in loan rates has implications for countercyclical payments under current payment formulas. Lower loan rates increase the *potential* magnitude of countercyclical payments, because the payment rate is the target price, less the direct payment rate, less the greater of the loan rate or the season-average farm price. *Actual* countercyclical payment rates would only increase if season-average farm prices fall below the 2002 farm bill loan rates, however.

The **countercyclical revenue** scenario replaces the current countercyclical payment program that triggers payments based on prices alone with a revenue-based program. For each commodity, a target level of national revenue per acre is determined by subtracting the 2002 farm bill direct payment rate from the 2002 farm bill target price and multiplying the result by the Olympic average of 2002-2006 national yields per harvested acre. Countercyclical revenue payments are made in any given year when the greater of the season-average farm price or the loan rate, multiplied by the national average yield, is less than the target revenue.

If actual national-average revenue per acre is less than the target revenue, then payment rates are calculated by dividing the difference by the current national average countercyclical payment yield. For example, if calculated corn revenue per acre is \$11.43 less than the target revenue of \$344 per acre, then the payment rate will equal \$0.10 per eligible bushel (the \$11.43 shortfall divided by the 114.3 bushel per acre national average countercyclical payment yield). Each producer then receives a payment equal to the producer's base acreage multiplied by the producer's countercyclical payment yield, multiplied by the payment rate (\$0.10 per bushel in this example), multiplied by 0.85. At the producer level, therefore, the program operates in a fashion identical to the current countercyclical payment program; the only difference is in the manner in which the payment rate per eligible bushel is determined.

In the countercyclical revenue scenario, direct payment rates and loan rates are held at baseline levels.

The final scenario implements **all three provisions jointly**. Direct payment rates are increased, loan rates are reduced, and the countercyclical revenue program is put in place.

Interactions among the provisions mean that results of the scenario implementing the three provisions jointly cannot be derived by simply adding up the results of the other three scenarios. In the higher direct payments scenario, the increase in direct payments results in a reduction of countercyclical payments. In the scenario examining all three provisions jointly, however, the increases in direct payments do not result in a reduction in countercyclical revenue payments. The trigger for countercyclical revenue payments is tied to the 2002 farm bill target prices and direct payment rates. So, changing direct payment rates has no effect on the target level of revenue, as indicated in Table 2. Because of this effect, we expect government expenditures to be greater in the scenario assuming all three provisions are implemented jointly than would be suggested by adding the changes resulting from the three scenarios considered separately.

Modeling approach

The analysis is conducted by comparing results of the four scenarios to the baseline. The point of reference for this analysis is the FAPRI stochastic baseline prepared in January and February 2007, and based on information available in mid-January. The stochastic baseline consists of 500 sets of alternative future agricultural market outcomes for the period from 2007 to 2016. These 500 alternative outcomes share a common assumption that provisions of the 2002 farm bill that are currently scheduled to expire in 2007 will instead be extended indefinitely, and that biofuel supports will also be maintained. The outcomes differ from one another in assumptions about the weather, petroleum prices, and other factors that affect agricultural commodity supply and demand. More detail on the 2007 FAPRI stochastic baseline can be found in the “FAPRI U.S. Baseline Briefing Book,” on the FAPRI website www.fapri.missouri.edu.

The analysis of each scenario is conducted by starting from the stochastic baseline, making the specified changes in policy assumptions and solving the FAPRI stochastic model. The result is a complete new set of stochastic results—500 outcomes over ten years for each of more than 1,000 variables. The model covers domestic markets for the major program crops (grain, oilseeds, upland cotton, and sugar), livestock (beef, pork, chicken and turkey), and dairy in considerable detail. International markets are captured in a simplified manner, as are nonprogram crops. The model also estimates government farm program costs, farm income measures, and consumer food costs.

The tables in this report summarize the results by reporting average changes from baseline results across all of the stochastic outcomes for selected variables. For the most part, the tables report averages for the 2008-2012 period. Each such figure, therefore, is the average of 2,500 numbers—500 outcomes for 5 years. For selected variables, the tables report annual estimates. For government outlays, both five-year (FY2008-FY2012) and ten-year (FY2008-FY2017) averages are reported. In the case of producer returns for upland cotton, the results for one particular year are further disaggregated to illustrate how the three provisions affect average producer returns at different levels of market prices and national average yields.

Results

The remaining tables and charts report implications of the scenarios for producer returns, crop acreage and prices, government farm program outlays, net farm income, the value of farm real estate, and measures of producer support for purposes of World Trade Organization notifications.

Average market receipts and payments

In the **higher direct payments** scenario, the 2008/09-2012/13 average increase in direct payments per base acre ranges from less than \$2.00 for wheat, feed grains, soybeans and peanuts to \$22.54 for upland cotton (Table 3). The increase in direct payments reduces potential countercyclical payments. In the case of cotton, the average reduction in countercyclical payments is almost as large as the increase in direct payments. For a producer with one acre of cotton base for every acre of cotton harvested, the net effect on total market receipts and payments is just \$3.30 per acre.

Marketing loan benefits decline relative to the baseline in the **lower loan rates** scenario. Because average baseline prices are well above loan rates for most commodities, this has only a small impact on most producer returns. Upland cotton is again the glaring exception. Average baseline cotton prices only slightly exceed the baseline loan rate, and in many of the 500 stochastic outcomes, cotton prices are low enough to trigger marketing loan benefits. Reducing cotton loan rates by about 10 cents per pound in 2008/09 and 2009/10 (less in later years) sharply reduces the proportion of stochastic outcomes where marketing loan benefits are available. Marketing loan benefits for upland cotton drop by an average of \$21.59 per harvested acre over the 2008/09-2012/13 period. The decline in loan program benefits is partially offset by an increase in market receipts, and for producers with cotton base acreage, countercyclical payments also increase. For a producer with one acre of cotton base for every acre of cotton harvested, total cotton receipts and payments decline by \$11.39 per acre.

By itself, the **countercyclical revenue** program has only modest effects on average producer net market receipts and payments for most commodities over the 2008/09-2012/13 period. In the case of wheat, feed grains, and soybeans, neither the baseline countercyclical payment program nor the scenario countercyclical revenue program pays out very often as prices and revenues are generally above the levels that trigger payments. For cotton, payments are frequent and large, and average about the same as in the baseline. The largest change from baseline is for peanuts. Model results suggest peanut revenues per acre are rarely low enough to trigger large countercyclical revenue payments, even though prices in the baseline are often low enough to trigger large countercyclical payments. This result is sensitive to model assumptions about the variability of peanut demand.

In the scenario considering **all three provisions jointly**, the effect on direct payments is identical to that in the higher direct payments scenario, and the effect on marketing loan benefits is very similar to that in the lower loan rates scenario. Countercyclical revenue payments are similar to those in the countercyclical revenue scenario, given the assumption that target revenue levels are not affected by changes in direct payment rates. In the case of cotton (and, to a lesser extent, peanuts), countercyclical revenue payments exceed those in the countercyclical revenue scenario, as lower loan rates in the joint scenario allows larger payments when prices are exceptionally low. Total market receipts and payments therefore increase more relative to the baseline in the joint scenario than would be suggested by simply adding up the impacts of the other three scenarios.

Table 3. Effects of the Scenarios on Producer Market Receipts and Payments

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Market Receipts	(Dollars per Harvested Acre, 2008/09 - 2012/13 Average)				
Corn	507.65	-0.19	-0.64	0.00	-0.75
Soybeans	292.79	-0.13	-0.40	0.03	-0.47
Wheat	177.41	-0.08	-0.25	0.01	-0.31
Upland Cotton	530.58	1.53	6.67	-0.23	6.51
Rice	597.38	-0.07	-0.35	0.25	-0.16
Peanuts	678.03	-0.22	-0.85	1.90	0.78
Sorghum	192.85	-0.16	-0.53	0.01	-0.62
Marketing Loan Benefits					
Corn	0.05	0.00	-0.02	0.00	-0.02
Soybeans	1.25	0.01	-0.18	0.00	-0.18
Wheat	0.03	0.00	-0.02	0.00	-0.02
Upland Cotton	31.00	-0.61	-21.59	0.11	-21.56
Rice	29.13	0.01	-0.49	-0.04	-0.51
Peanuts	4.81	0.03	-1.98	-0.23	-2.06
Sorghum	0.07	0.00	-0.03	0.00	-0.03
Direct Payments	(Dollars per Base Acre, 2008/09 - 2012/13 Average)				
Corn	24.35	1.04	0.00	0.00	1.04
Soybeans	11.52	1.26	0.00	0.00	1.26
Wheat	15.25	0.70	0.00	0.00	0.70
Upland Cotton	34.10	22.54	0.00	0.00	22.54
Rice	96.22	4.18	0.00	0.00	4.18
Peanuts	45.74	1.99	0.00	0.00	1.99
Sorghum	16.81	0.58	0.00	0.00	0.58
Countercyclical Payments					
Corn	0.09	-0.01	0.00	-0.09	-0.09
Soybeans	0.58	-0.11	0.10	-0.51	-0.48
Wheat	0.11	-0.02	0.01	-0.08	-0.08
Upland Cotton	45.25	-20.17	3.52	0.17	5.13
Rice	15.76	-1.45	0.08	-4.12	-4.03
Peanuts	34.62	-1.11	1.10	-18.53	-17.17
Sorghum	0.10	-0.01	0.02	-0.09	-0.09
Total Receipts and Payments	(Dollars per Harvested Base Acre*, 2008/09 - 2012/13 Average)				
Corn	532.14	0.84	-0.66	-0.09	0.18
Soybeans	306.13	1.03	-0.49	-0.48	0.13
Wheat	192.80	0.61	-0.26	-0.07	0.30
Upland Cotton	640.92	3.30	-11.39	0.06	12.63
Rice	738.49	2.67	-0.77	-3.90	-0.53
Peanuts	763.20	0.69	-1.73	-16.85	-16.46
Sorghum	209.83	0.41	-0.54	-0.08	-0.16

* Simple sum of market receipts and marketing loan benefits per harvested acre and direct and countercyclical payments per base acre. This assumes one base acre for the commodity for every acre harvested.

Market receipts and payments over time

The averages reported in Table 3 mask important changes over time in the effects on market receipts and payments. An examination of annual results reveals common patterns in the changes in total receipts and payments over time for corn, soybeans, wheat and upland cotton (Table 4).²

In the **higher direct payments** scenario, direct payments for grains increase for the 2010/11, 2011/12, and 2012/13 crop years only. For both corn and wheat, this results in a slight increase in total receipts and payments per harvested base acre in those three years. Producers with soybean base acreage benefit from a direct payment increase in all years, but the increase is largest from 2010/11-2012/13. For upland cotton, the direct payment increase is the same in every year, but the proportion of the increase that is offset by lower countercyclical payments declines as average market prices increase over time. As a result, the increase in cotton market receipts and payments increases from less than \$2 per harvested base acre in 2008/09 to almost \$7 in 2016/17.

In the **lower loan rates** scenario, the impacts on producer returns decline over time. For upland cotton, increases over time in average prices reduce the impact of lower loan rates. For grains and soybeans, marketing loan benefits are small in the baseline, so the modest effects shown are largely a result of cross-commodity effects on market prices and receipts.

The **countercyclical revenue** program results in larger average payments to cotton producers with cotton base in 2008/09 than in the baseline, but the net effect is essentially zero in 2010/11 and is increasingly negative in later years. The primary reason for this result is that crop yields tend to increase over time, so any given market price is associated with rising per-acre market revenues. Because the revenue target used to compute countercyclical revenue payments is fixed, based on 2002-2006 observed yields, the likelihood of such payments generally declines over time. To a lesser degree, the pattern for cotton can be discerned in corn and soybean receipts and payments as well.

In the scenario considering **all three provisions jointly**, the effects are uniformly small for corn, soybeans and wheat. In no year does the average sum of market receipts and payments change by more than \$2 per harvested base acre relative to the baseline. For upland cotton, however, the sum of receipts and payments increases by \$17 per harvested base acre in 2008/09, with the effect diminishing to less than \$6 in 2016/17. Cotton receipts and payments in the joint scenario far exceed those in the other scenarios, as producers with cotton base acreage are allowed to keep the increase in direct payments without any reduction in countercyclical revenue payments.

² The table reports the sum of market receipts and marketing loan benefits on a per-harvested-acre basis and direct and countercyclical payments on a per-base-acre basis. Thus the reported figures represent total market receipts and payments for a producer with one acre of base for the commodity in question for each acre harvested. As is discussed in the next section, harvested and base acreage are not the same in general or on particular farms.

Table 4. Effects of the Scenarios on the Sum of Annual Crop Receipts and Payments

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Corn	(Dollars per Harvested Corn Base Acre Planted to Corn)				
2008/09	521.84	-0.22	-1.35	0.02	-1.48
2009/10	528.77	-0.16	-0.68	0.01	-0.72
2010/11	533.78	1.53	-0.57	-0.07	0.98
2011/12	536.72	1.54	-0.43	-0.15	1.03
2012/13	539.60	1.53	-0.30	-0.26	1.06
2013/14	541.14	-0.11	-0.25	-0.22	-0.54
2014/15	542.00	-0.10	-0.31	-0.53	-0.91
2015/16	543.57	-0.10	-0.28	-0.49	-0.83
2016/17	547.14	-0.09	-0.25	-0.49	-0.80
Soybeans	(Dollars per Harvested Soybean Base Acre Planted to Soybeans)				
2008/09	304.88	0.61	-0.91	-0.23	-0.49
2009/10	306.89	0.64	-0.42	-0.23	0.06
2010/11	306.11	1.30	-0.46	-0.49	0.43
2011/12	305.29	1.30	-0.37	-0.67	0.36
2012/13	307.49	1.28	-0.27	-0.79	0.30
2013/14	306.82	0.60	-0.34	-1.01	-0.73
2014/15	306.49	0.59	-0.26	-1.11	-0.79
2015/16	304.94	0.58	-0.36	-1.30	-1.10
2016/17	305.15	0.59	-0.26	-1.22	-0.92
Wheat	(Dollars per Harvested Wheat Base Acre Planted to Wheat)				
2008/09	187.20	-0.06	-0.43	-0.10	-0.60
2009/10	190.26	-0.07	-0.33	-0.05	-0.43
2010/11	193.27	1.05	-0.23	-0.08	0.78
2011/12	195.51	1.06	-0.20	-0.07	0.82
2012/13	197.77	1.07	-0.13	-0.06	0.90
2013/14	199.27	-0.05	-0.13	-0.16	-0.34
2014/15	200.57	-0.05	-0.12	-0.12	-0.28
2015/16	202.01	-0.05	-0.09	-0.05	-0.18
2016/17	204.41	-0.04	-0.08	-0.06	-0.19
Upland Cotton	(Dollars per Harvested Upland Cotton Base Acre Planted to Cotton)				
2008/09	631.16	1.72	-14.05	7.27	17.06
2009/10	636.80	2.35	-15.87	3.69	11.94
2010/11	642.04	4.01	-11.94	-0.14	12.24
2011/12	645.53	3.88	-8.58	-4.27	10.87
2012/13	649.09	4.54	-6.53	-6.26	11.05
2013/14	654.59	4.92	-4.81	-8.47	10.39
2014/15	658.00	5.36	-5.17	-10.45	7.69
2015/16	665.98	6.60	-3.57	-11.44	8.42
2016/17	672.28	6.80	-4.26	-13.65	5.51

Upland cotton market receipts and payments under different market conditions

To illustrate some of the ways in which the Administration proposal alters the pattern of government payments, Figures 1-6 summarize the distribution of cotton market receipts and payments in different ways. Stochastic results for 2010/11 are sorted into five groups of equal size. For example, in Figure 1 results are sorted by baseline cotton prices in 2010/11. The bar labeled "Under 49.1" represents the 100 stochastic outcomes for 2010/11 where the estimated cotton price is less than 49.1 cents per pound.

"Market" receipts are defined as the national average value of cotton and cottonseed per harvested acre. "Loan" program benefits are also reported per harvested acre. "Countercyclical" and "Direct" payments are reported per base acre. It is appropriate to add these revenue sources only when harvested and base acreage are the same.

In the **baseline**, national average market receipts, and payments per base acre of cotton used for cotton production, are actually greater in the 100 outcomes where the price is less than 49.1 cents per pound than in any of the other four groups of 100 outcomes. Both marketing loan benefits and countercyclical benefits provide compensation for low market prices. Low prices are often the result of above average yields, so average market receipts do not differ proportionally with average prices. This "u-shaped" pattern of total market receipts and payments is common across several commodities, where the lowest level of total market receipts and payments is at prices slightly above the level that triggers marketing loan benefits.

The scenario incorporating **all three provisions jointly** results in a slightly different pattern. Total receipts and payments are still greater when baseline prices are below 49.1 cents per pound than in the next three price categories, but the difference is smaller than in the baseline. Relative to the baseline, total market receipts and payments are lower at prices below 49.1 cents per pound, roughly the same at prices between 49.1 and 54.4 cents per pound and higher than the baseline at prices greater than 54.4 cents per pound.

Figures 3 and 4 sort the 2010/11 results by cotton yields. In the baseline, higher yields are associated with increases in total receipts and payments, not so much because of increased market receipts, but because of increased marketing loan benefits per harvested acre and countercyclical payments per base acre. Higher yields are associated with lower prices, so average market receipts differ little across the yield categories. Primarily because of the countercyclical revenue program, average total cotton receipts and payments are greater at low yields under the provisions of the Administration's proposal than in the baseline.

Figures 5 and 6 sort results by baseline cotton market receipts in 2010/11. The results are comparable to those reported in Figures 1 and 2, for similar reasons.

In general, the Administration's proposal increases payments that are tied to base acreage (direct payments in general and countercyclical revenue payments under most circumstances) while reducing payments that are tied to production (marketing loan benefits).

Figure 1. Baseline Cotton Market Receipts and Payments for 2010/11, Sorted by Baseline Cotton Prices

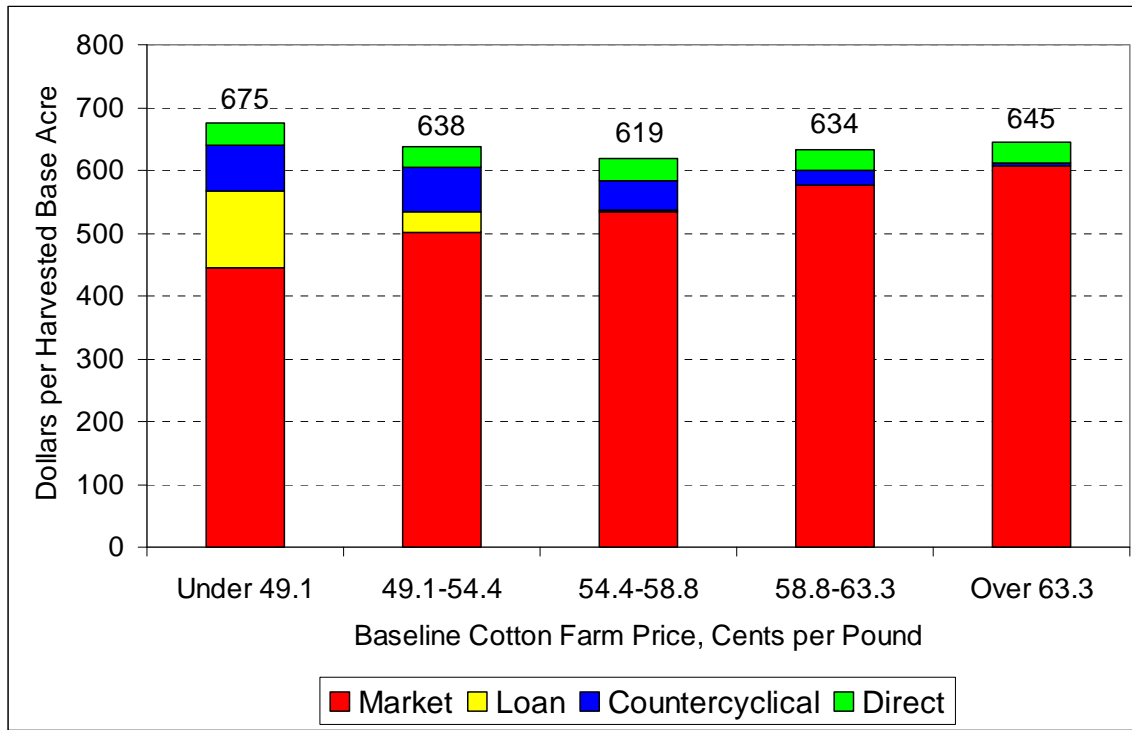


Figure 2. Cotton Market Receipts and Payments for 2010/11 under the Scenario Assuming All Three Provisions Jointly, Sorted by Baseline Cotton Prices

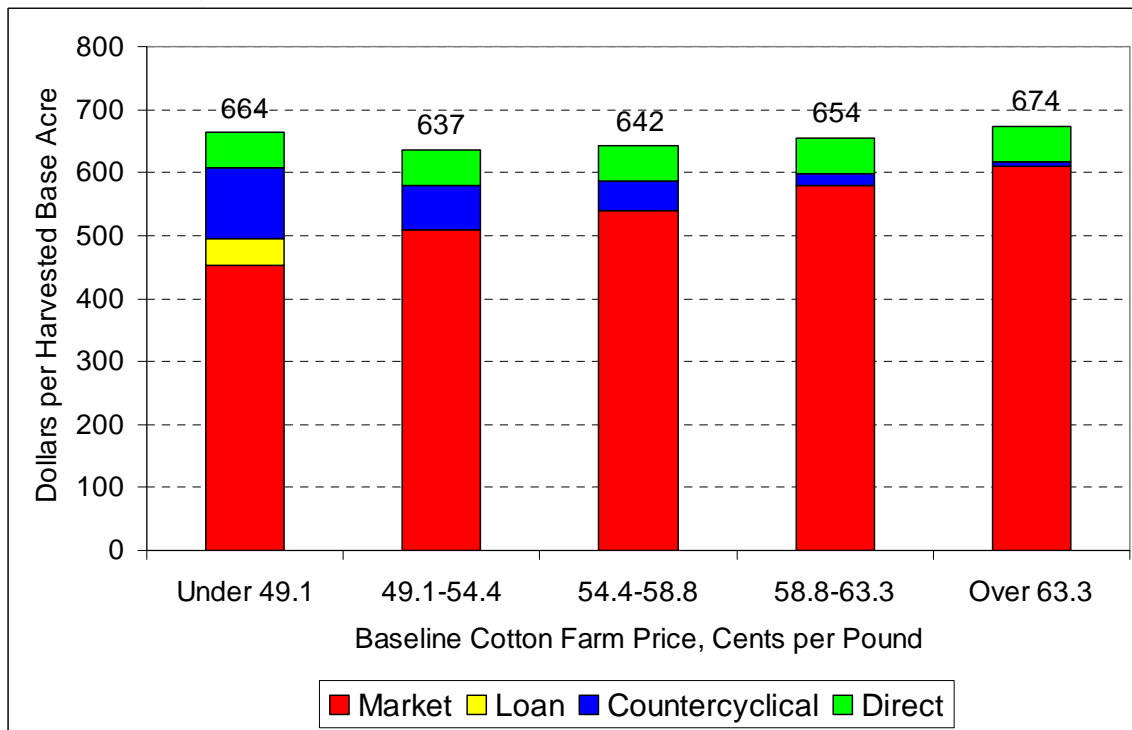


Figure 3. Baseline Cotton Market Receipts and Payments for 2010/11, Sorted by Baseline Cotton Yields

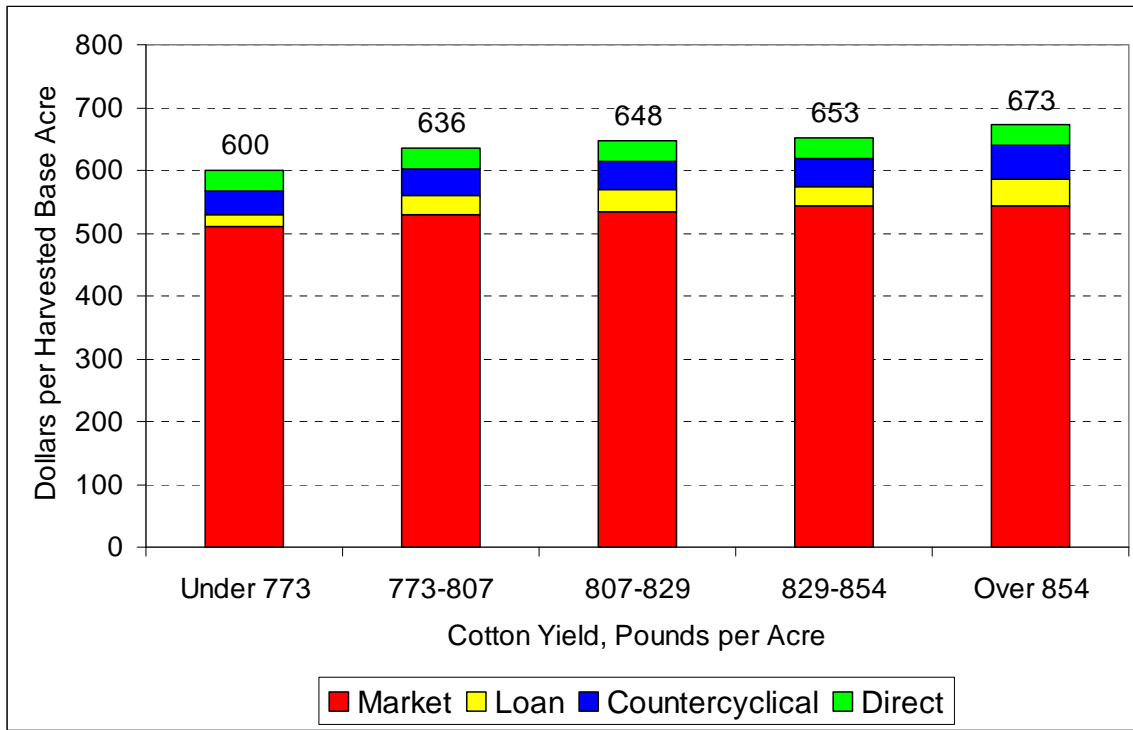


Figure 4. Cotton Market Receipts and Payments for 2010/11 under the Scenario Assuming All Three Provisions Jointly, Sorted by Baseline Cotton Yields

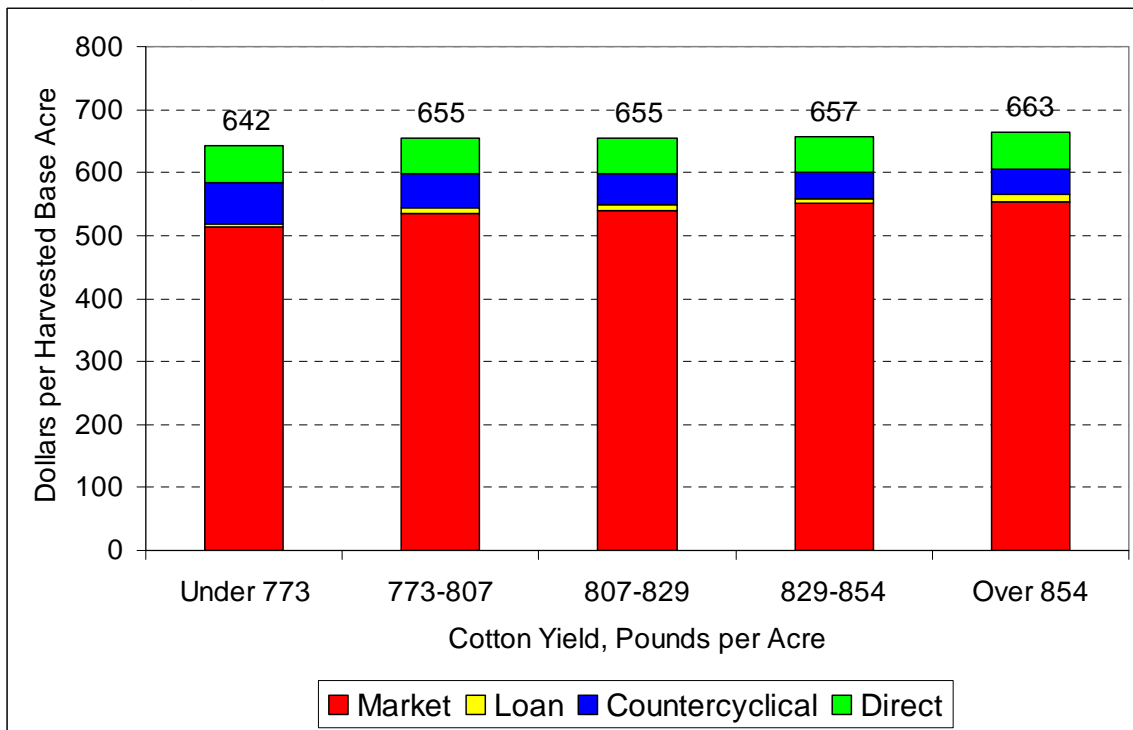


Figure 5. Baseline Cotton Market Receipts and Payments for 2010/11, Sorted by Baseline Market Receipts

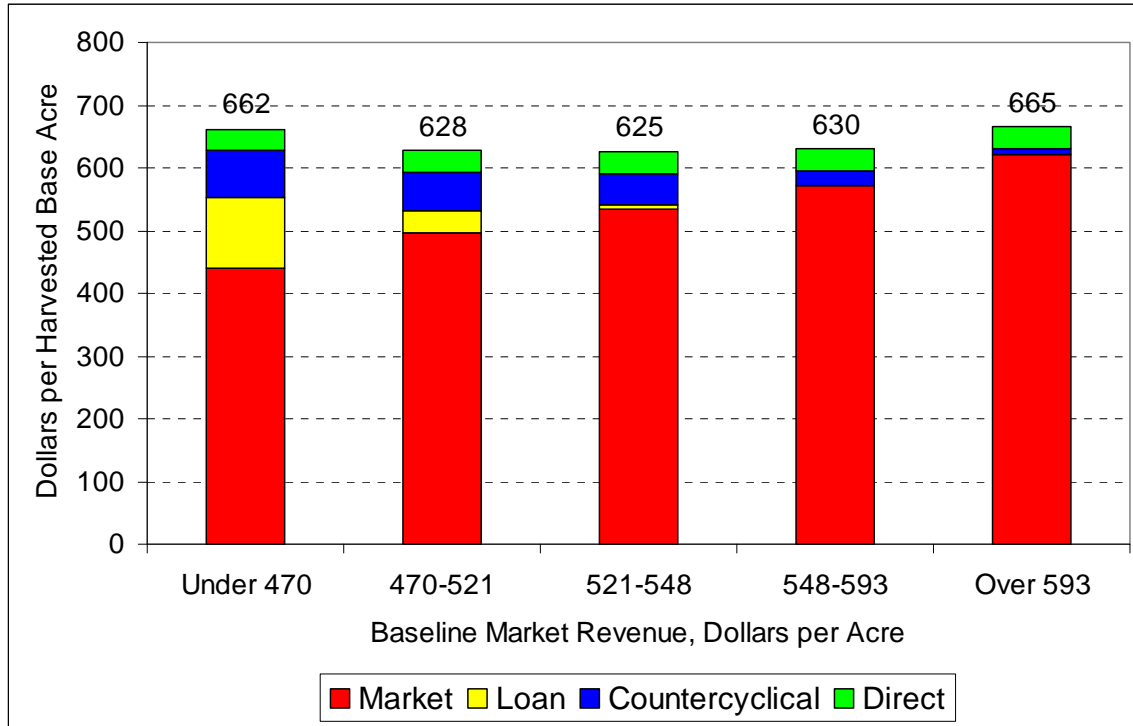
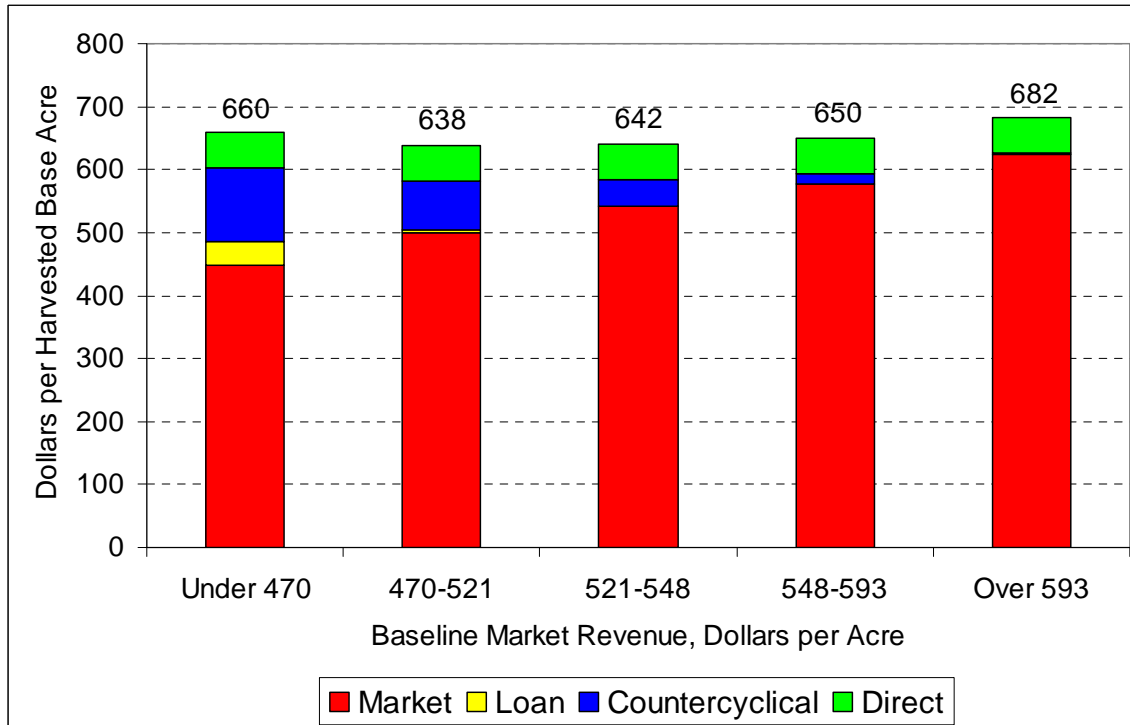


Figure 6. Cotton Market Receipts and Payments for 2010/11 under the Scenario Assuming All Three Provisions Jointly, Sorted by Baseline Cotton Market Receipts



Returns tied to production and payments tied to base acreage

Analysis of the distribution of national average market receipts and payments per harvested base acre reveals interesting patterns, but the patterns may not be the same at the farm level.

Two ways in which farm level results may differ from the national level results are worthy of particular mention. The first is related to the correlation between national and farm-level yields. If yields on a particular farm are highly correlated with national average yields, then the patterns reported in Figures 1-6 are more likely to hold for that farm. However, for farms with yields that are poorly correlated with national average yields, the results may be very different. While countercyclical revenue payments may act to stabilize national average returns per acre, they may not stabilize returns as well for farms with yields that are poorly correlated with national average yields.

Second, the results reported in Figures 1-6 only hold for a producer with exactly one base acre of cotton for every harvested acre of cotton. The Administration's farm bill proposal would reduce marketing loan payments that are only available on actual production, but increase direct and, under some circumstances, countercyclical payments that are tied to base acreage. The Administration's proposal, therefore, would generally increase payments tied to fixed base acreage, but reduce payments tied to actual harvested acreage. Producers with large amounts of base acreage relative to harvested acreage are more likely to benefit than producers with a large amount of harvested acreage relative to base acreage.

There are major differences between base acreage and the acreage actually devoted to crop production in a given year (Table 5). Based on the March "Prospective Plantings" report from USDA, intended 2007 planted acreage for upland cotton represented just 64 percent of cotton base acreage in 2005 (the last year for which base acreage data are available). In some states, the ratio is even lower—just 19 percent in California, for example.

For corn, there are smaller differences between 2007 intended acreage and base acreage than for other crops. For example, the ratio of intended plantings to base acreage is between 89 percent and 110 percent in nine of the ten leading states for corn acreage. In spite of the expected reduction in 2007 soybean acreage, intended soybean acreage still exceeds soybean base acreage in most states. This can be attributed to rational choices by producers in 2002 who sought to maximize base acreage for commodities with greater expected payments per base acre than soybeans. Rice is at the opposite extreme, with 2007 intended acreage equal to just 59 percent of rice base acreage. On any given farm, the relationship between base acreage of a given crop and acreage planted to that crop may be very different from the state and national averages reported here.

Differences between direct and countercyclical payment yields on the one hand, and actual harvested yields on the other, may also have important effects on how policy changes affect particular producers. Proposals that reduce payments based on production but increase payments tied to base acreage and yields are more likely to benefit producers with high program yields relative to harvested yields than farmers with low program yields relative to harvested yields.

Table 5. Planting Intentions for 2007 Relative to 2005 Base Acreage

	Corn	Soybeans	Wheat	Up. Cotton	Rice
	(2007 Planting Intentions as Percent of 2005 Base Area)				
Alabama	106%	144%	53%	64%	0%
Arizona	138%	0%	69%	38%	n.a.
Arkansas	498%	121%	67%	71%	66%
California	160%	0%	86%	19%	86%
Colorado	109%	0%	71%	n.a.	n.a.
Connecticut	96%	0%	0%	n.a.	n.a.
Delaware	118%	101%	106%	n.a.	n.a.
Florida	68%	167%	34%	79%	0%
Georgia	96%	226%	80%	76%	n.a.
Idaho	222%	0%	76%	n.a.	n.a.
Illinois	106%	106%	75%	n.a.	0%
Indiana	95%	123%	68%	n.a.	n.a.
Iowa	94%	118%	58%	n.a.	n.a.
Kansas	132%	146%	84%	347%	n.a.
Kentucky	78%	142%	78%	0%	0%
Louisiana	235%	110%	93%	35%	45%
Maine	78%	0%	0%	n.a.	n.a.
Maryland	114%	116%	138%	0%	n.a.
Massachusetts	76%	0%	0%	n.a.	n.a.
Michigan	89%	143%	105%	n.a.	n.a.
Minnesota	100%	125%	61%	n.a.	n.a.
Mississippi	344%	154%	88%	44%	45%
Missouri	110%	130%	55%	91%	87%
Montana	94%	0%	77%	n.a.	n.a.
Nebraska	94%	169%	78%	n.a.	n.a.
Nevada	331%	n.a.	131%	n.a.	n.a.
New Hampshire	86%	0%	n.a.	n.a.	n.a.
New Jersey	107%	131%	127%	n.a.	n.a.
New Mexico	101%	0%	108%	35%	n.a.
New York	92%	262%	62%	n.a.	n.a.
North Carolina	113%	145%	109%	64%	n.a.
North Dakota	199%	233%	66%	n.a.	n.a.
Ohio	89%	130%	79%	n.a.	n.a.
Oklahoma	149%	183%	87%	33%	0%
Oregon	120%	0%	81%	n.a.	n.a.
Pennsylvania	158%	200%	137%	n.a.	n.a.
Rhode Island	165%	0%	n.a.	n.a.	n.a.
South Carolina	98%	151%	51%	55%	0%
South Dakota	105%	96%	88%	n.a.	n.a.
Tennessee	100%	137%	80%	74%	0%
Texas	98%	98%	109%	78%	27%
Utah	134%	0%	57%	n.a.	n.a.
Vermont	100%	0%	0%	n.a.	n.a.
Virginia	107%	152%	91%	81%	n.a.
Washington	156%	0%	86%	n.a.	n.a.
West Virginia	65%	153%	91%	n.a.	n.a.
Wisconsin	99%	147%	197%	n.a.	n.a.
Wyoming	91%	0%	57%	n.a.	n.a.
United States	104%	128%	80%	64%	59%

Note: Based on USDA data. Top 10 (6 for rice) states in 2007 planting intentions for each commodity in **bold**.

Crop acreage

Acreage planted to a particular crop depends primarily on expected producer returns that are closely tied to actual production levels. Expected market receipts and marketing loan benefits would be examples of producer revenues that are likely to have large impacts on production decisions. In contrast, most economists believe that payments less coupled to production are likely to have smaller production effects. Direct and countercyclical payments are not tied to current production levels of particular producers, so payments made under those programs would be expected to have smaller impacts on production than the same amount of benefits provided under the marketing loan program.

Results are consistent with this assumed behavior. Impacts are generally modest, primarily because baseline loan program benefits are modest for commodities other than upland cotton. The **higher direct payments** scenario has very little impact on crop acreage (Table 6). The reported small decline in cotton acreage should be treated with caution.³ In the **lower loan rates** scenario, lower cotton marketing loan benefits result in a reduction in cotton acreage and an increase in acreage of competing crops. The **countercyclical revenue** scenario has little net impact on acreage. Results in the scenario considering **all three provisions jointly** are similar to those in the lower loan rates scenario, as it is primarily the changes in loan rates that drive acreage changes.

Note that in all of the scenarios, the total acreage devoted to production of 12 major crops is almost the same. The reduction in coupled support marginally reduces total acreage in the **lower loan rates** scenario.

Crop prices

With little change in acreage for most crops, prices are essentially the same across the scenarios (Table 7). For example, average grain and soybean prices are within \$0.01 of baseline levels in each of the scenarios. The one exception to this general rule is cotton. The reduction in upland cotton acreage in the **lower loan rates** scenario and in the scenario examining **all three provisions jointly** results in a modest increase in cotton prices. Even for cotton, the average increase in 2008/09-2012/13 prices is just 0.66cents per pound, or 1.2 percent, in the scenario implementing all three provisions.

Crop demand

Small changes in supply and prices translate into small changes in utilization. For grains and oilseeds, changes from baseline levels of domestic use and exports are generally less than 1 percent. For cotton, slightly larger impacts on production and prices imply slightly larger impacts on use. Upland cotton exports, for example, average 3.2 percent less than the baseline level over the 2008/09 to 2012/13 period under the scenario implementing **all three provisions jointly**.

³ In the model, countercyclical payments are assumed to have a greater impact on acreage than direct payments on a dollar-for-dollar basis. Because an increase in direct payments results in a reduction in countercyclical payments under current payment formulas, the result is a small reduction in estimated cotton acreage.

Table 6. Effects of the Scenarios on Crop Acreage

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Planted Area	(Million Acres, 2008/09 - 2012/13 Average)				
Corn	89.96	0.01	0.05	0.00	0.06
Soybeans	70.14	0.03	0.09	-0.01	0.10
Wheat	57.92	0.04	0.12	-0.01	0.16
Upland Cotton	13.79	-0.10	-0.43	0.02	-0.42
Sorghum	6.62	0.02	0.06	0.00	0.06
Barley	3.36	0.00	0.00	0.00	0.00
Oats	3.79	0.00	0.00	0.00	0.00
Rice	3.00	0.00	0.00	0.00	0.00
Sunflowers	2.07	0.00	0.00	0.00	0.00
Peanuts	1.37	0.00	0.00	0.00	0.00
Sugar Beets	1.33	0.00	0.00	0.00	0.00
Sugar Cane (Harvested)	0.86	0.00	0.00	0.00	0.00
12 Crop Planted Area	254.20	0.01	-0.10	0.00	-0.03
Hay Harvested Area	61.07	0.00	0.00	0.00	0.00
12 Crops + Hay	315.27	0.00	-0.10	0.00	-0.03

Table 7. Effects of the Scenarios on Crop Prices

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
	(Dollars per Bushel, 2008/09 - 2012/13 Average)				
Corn	3.20	0.00	0.00	0.00	0.00
Soybeans	6.92	0.00	-0.01	0.00	-0.01
Wheat	4.13	0.00	-0.01	0.00	-0.01
Sorghum	3.01	0.00	-0.01	0.00	-0.01
Barley	3.16	0.00	0.00	0.00	0.00
Oats	1.92	0.00	0.00	0.00	0.00
	(Dollars per Hundredweight, 2008/09 - 2012/13 Average)				
Rice	8.30	0.00	0.00	0.00	0.00
	(Cents per Pound, 2008/09 - 2012/13 Average)				
Peanuts	22.33	-0.01	-0.03	0.06	0.03
Sunflowers	14.19	0.00	0.00	0.00	-0.01
Upland Cotton	56.13	0.16	0.68	-0.02	0.66
	(Dollars per Ton, 2008/09 - 2012/13 Average)				
Hay	109.38	0.00	-0.03	0.00	0.00

Farm program outlays

The **higher direct payments** scenario increases direct payments by an average of \$649 million per year over the 2008/09-2012/13 crop years (Table 1). This effect on government outlays is partially offset by an estimated average reduction in countercyclical payments of \$379 million over the same period. Over fiscal years 2008-2012, average annual net outlays by the Commodity Credit Corporation exceed baseline levels by \$255 million (Table 8). For the 5-year period, the total increase in net outlays is \$1.28 billion. For the 10-year period from FY 2008 to FY 2017, the estimated increase in net CCC outlays is \$2.06 billion.

In the **lower loan rates** scenario, the average change in net CCC outlays is \$310 million per year over FY 2008 to FY 2012. Lower marketing loan benefits for cotton producers account for most of the decline, as average prices for most other commodities are high enough that marketing loan benefits rarely come into play. The total net savings over FY 2008 to FY 2017 is \$1.55 billion, and the ten year savings is \$2.34 billion.

The **countercyclical revenue** scenario has relatively little impact on average net CCC outlays over the FY 2008 to FY 2012 period as a whole. A small increase in cotton net outlays is more than offset by lower outlays for peanuts, soybeans and rice, leaving net CCC outlays just \$12 million per year below baseline levels. Of interest is the pattern of net outlay effects over time. As crop yields tend to increase over time, average national revenues per acre also tend to increase, especially for cotton. As a result, countercyclical revenue payments tend to decline over time, even relative to baseline countercyclical payments. While the five year savings in government costs total just \$58 million, the 10-year reduction in government costs is \$1.68 billion.

As discussed earlier, results of the scenario considering **all three provisions jointly** are not simply the sum of the three provisions considered separately. The effect is particularly pronounced for cotton. The target level of revenue under the countercyclical revenue program is not affected by the increase in direct payments in the joint scenario, even though countercyclical payments are reduced in the higher direct payments scenario. Net outlays under the joint scenario increase by an annual average of \$219 million or a total of \$1.09 billion over the FY 2008 to FY 2012 period. The ten-year cost is \$1.25 billion, as net outlays actually fall below baseline levels by FY 2015.

These estimates assume the timing of various payments is the same as under current law. For example, it is assumed that countercyclical revenue payments associated with a particular crop will be made in installments spread out over more than one fiscal year. The estimates also assume no changes in payment limitation rules, and that existing payment limitation rules have the same proportional effect in restricting payments as has been observed in recent years, even when payment rates and levels change.

Table 8. Effects of the Scenarios on Government Farm Program Net Outlays

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
Feed Grains	(Million Dollars, FY 2008 - FY 2012 Average)				
Corn	2,120	67	-3	-3	61
Sorghum	201	5	0	-1	4
Barley	85	4	-1	0	3
Oats	4	0	0	0	0
Food Grains					
Wheat	1,177	38	-8	-5	25
Rice	595	11	-1	-11	2
Oilseeds					
Soybeans	693	50	-8	-14	29
Peanuts	145	2	-4	-17	-18
Other Oilseeds	22	1	-1	0	0
Other Commodities					
Upland Cotton	2,089	78	-242	39	154
Sugar	4	0	0	0	0
Dairy	51	0	0	0	0
Other Net Outlays	4,267	0	-43	0	-42
Net CCC Outlays	11,454	255	-310	-12	219
Annual Net CCC Outlays	(Million Dollars)				
FY 2008	11,556	95	-117	2	-19
FY 2009	11,611	270	-511	39	-31
FY 2010	11,327	119	-402	62	198
FY 2011	11,355	393	-302	-30	485
FY 2012	11,421	400	-219	-131	461
FY 2013	11,443	331	-178	-216	337
FY 2014	11,568	91	-161	-279	28
FY 2015	10,617	110	-159	-340	-38
FY 2016	10,625	124	-148	-395	-86
FY 2008-FY 2012 Total	57,269	1,277	-1,551	-58	1,094
FY 2008-FY 2017* Total	112,147	2,058	-2,345	-1,684	1,249

* The model only estimates outlays through FY 2016. For the 10-year total, it is assumed FY 2017 outlays are identical to FY 2016 outlays.

Net farm income

Higher direct payments result in an increase in government payments, especially between 2010 and 2012 (Table 9). With little change in prices or production, other farm receipts and most costs of production are almost the same as in the baseline. The one exception to this general rule is net rental payments to nonoperator landlords. The increase in direct payments increases returns to land, and part of that increase is captured by landlords, some of whom are not operators. The average annual increase in net farm income is \$224 million over the 2008-2012 period, relative to the baseline.

Lower loan rates result in lower government payments. Crop receipts decline slightly as well, primarily because the reduction in cotton production is greater than the increase in cotton prices. Effects on other crops are small. Production costs decline marginally. Cotton production costs per acre are high, so when acreage shifts from cotton to other crops, total production costs decline. Net rental payments to nonoperator landlords also decline in response to the decline in returns to land. The 2008-2012 average annual reduction in net farm income is \$170 million. Effects diminish over time, as loan program benefits become less important with rising cotton prices.

Although the **countercyclical revenue** program can have important effects on farm income in particular years under particular circumstances, the average impact of the program is small, reducing net farm income by an average of \$34 million per year over 2008-2012. The effect on net farm income becomes more negative over time as a fixed level of target revenue results in declining countercyclical revenue payments as yields increase.

Considering **all three provisions jointly**, the increase in government payments and net farm income is greater than in the higher direct payments scenario. Crop receipts and most production costs decline as in the lower loan rate scenario, while net rental payments to nonoperator landlords increase. Relative to the baseline, the average annual increase in net farm income over 2008-2012 is \$260 million. Net farm income actually declines relative to the baseline beginning in 2013.

Note that net farm income is a calendar year measure. This accounts for much of the difference in reported government payments over the 2008-2012 calendar year period relative to the net CCC outlays reported in Table 8 over the FY 2008 - FY 2012 period or the crop year payments reported in Table 1 for the 2008/09 to 2012/13 period. For example, consider the 2011/12 crop year final corn countercyclical payment, which under current payment schedules would probably be made in October 2012. The payment would be recorded as a crop year 2011/12 payment, a calendar year 2012 payment for net farm income purposes, and a FY 2013 expenditure in computing net CCC outlays. As such, it would fall within a 2008-2012 window for crop year payments and calendar year net farm income, but outside a 2008-2012 window for fiscal year net CCC outlays.

Farm real estate values

Farm real estate values are affected only marginally by the scenarios (Table 10). In general, farm real estate values change in the same direction as net farm income, albeit with lags. Reported figures are for January 1 of each year.

Table 9. Effects of the Scenarios on Net Farm Income

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
	(Million Dollars, 2008 - 2012 Average)				
Government Payments	11,091	334	-224	-35	407
Crop Receipts	147,487	-31	-138	6	-138
Livestock Receipts	128,357	-6	-26	1	-28
Rent to Nonoperator Landlords	13,640	90	-69	-1	103
Other Production Costs	254,771	-6	-171	5	-122
Other Net Farm Income	43,700	11	-23	-2	0
Net Farm Income	62,225	224	-170	-34	260
	(Million Dollars)				
Annual Net Farm Income					
2008	63,037	386	-236	1	155
2009	62,519	-12	-277	78	155
2010	62,090	293	-159	-2	450
2011	62,230	254	-99	-87	337
2012	61,247	200	-79	-161	204
2013	60,300	-67	-55	-190	-93
2014	60,614	0	-46	-217	-80
2015	60,309	19	-45	-267	-128
2016	61,315	42	-54	-262	-130

Table 10. Effects of the Scenarios on Farm Real Estate Values

	-----Absolute Change from Baseline-----				
	Baseline	Higher Direct Payments	Lower Loan Rates	Counter-cyclical Revenue	All Three Provisions Jointly
	(Dollars per Acre, 2008 - 2012 Average)				
U.S. Average Farm Real Estate Value	2,446	4	-3	0	4
	(Dollars per Acre)				
Annual Farm Real Estate Values					
2008	2,206	0	0	0	0
2009	2,389	4	-2	0	2
2010	2,470	4	-4	0	3
2011	2,543	5	-5	0	6
2012	2,621	7	-5	0	8
2013	2,697	8	-5	-1	9
2014	2,783	8	-5	-2	8
2015	2,872	7	-5	-3	8
2016	2,957	7	-5	-5	7

World Trade Organization producer support measures

The Administration has suggested that one motivation for some of its farm bill proposals is to make US programs more consistent with international trade obligations. Reducing loan rates is one way to achieve this objective. Although not examined here, proposed changes in producer flexibility rules related to planting fruits and vegetables on land eligible for direct payments also serve the same purpose.

In the **baseline**, the average level of the US total current Aggregate Measure of Support is \$7.4 billion (Table 11). This figure is well below existing U.S. commitment levels, but only marginally below a US proposal to reduce its commitment to \$7.6 billion as part of a possible Doha Development Agenda agreement. Dairy (\$5.1 billion) and sugar (\$1.3 billion) account for most of the average baseline amber support, but marketing loan benefits are a major source of volatility. In 25% of stochastic outcomes in any given year between 2008 and 2012, the total current AMS exceeds the US-proposed limit of \$7.6 billion. In 75% of stochastic outcomes, the limit would be exceeded in at least one year between 2008 and 2012.

Baseline countercyclical payments average \$984 million, well below the US-proposed limit of \$4.8 billion for a redefined “blue box” of support. Given high projected average prices for grains and oilseeds, this limit is not exceeded in even 1% of the stochastic outcomes. Various proposals to limit “overall trade-distorting support” have been suggested, where the OTDS represents the sum of the total current AMS, redefined blue box support, and both product-specific and nonproduct-specific *de minimis* support. Some press reports suggest a US commitment of \$17 billion or less would be necessary for an agreement to be reached. In only 1% of stochastic outcomes is a \$17 billion OTDS limit exceeded in the average year under baseline policies. In 5% of stochastic outcomes, it is exceeded at least once between 2008 and 2012. These results suggest the amber box (AMS) limit is more likely to be binding on the US than the OTDS, at least at the assumed commitment levels examined here.

The **higher direct payments** scenario has essentially no effect on these calculations, assuming that direct payments are eligible for the green box and thus exempt from limitation.⁴ The **lower loan rates** scenario reduces marketing loan expenditures and reduces the proportion of stochastic outcomes exceeding the AMS limit at least once between 2008 and 2012 to 48%. The **countercyclical revenue program** has little effect on average outcomes, but it does slightly increase the probability of OTDS in excess of \$17 billion, as revenue payments can be very large when yields and prices are simultaneously low. Considering **all three provisions jointly** results in the lowest estimated proportions of outcomes exceeding the assumed limits on amber support and OTDS.

⁴ This assumption is made even though the analysis assumes no change in current rules restricting the ability of producers to plant fruits and vegetables on base acreage. The Administration has proposed to allow producers to receive direct payments even if they produce fruits and vegetables on base acreage. It is argued that this change would make it more likely that direct payments would qualify for green box treatment. Estimating impacts of such a change in producer flexibility rules is beyond the scope of this study.

Table 11. Effects of the Scenarios on WTO Producer Support Measures

	Baseline	Higher Direct Payments	Lower Loan Rates	Counter- cyclical Revenue	All Three Provisions Jointly
Current Aggregate Measure of Support	7,393	7,382	7,064	7,395	7,016
		(Million Dollars, 2008 - 2012 Average)			
Outcomes > U.S.-proposed \$7.6 Billion		(Proportion of Outcomes, 2008 - 2012)			
Share of Outcomes in Given Year	25%	25%	12%	26%	11%
Share of Outcomes Once in 5 Years	75%	75%	48%	75%	41%
Blue Box Support under U.S. Proposal (Countercyclical Payments)	984	605	1,056	899	993
		(Million Dollars, 2008 - 2012 Average)			
Outcomes > U.S.-proposed \$4.8 Billion		(Proportion of Outcomes, 2008 - 2012)			
Share of Outcomes in Given Year	0%	0%	0%	0%	0%
Share of Outcomes Once in 5 Years	0%	0%	0%	0%	0%
Overall Trade Distorting Support (As Discussed in Doha Negotiations)	12,111	11,722	11,844	12,028	11,802
		(Million Dollars, 2008 - 2012 Average)			
Outcomes > Hypothetical \$17 Billion		(Proportion of Outcomes, 2008 - 2012)			
Share of Outcomes in Given Year	1%	1%	1%	2%	0%
Share of Outcomes Once in 5 Years	5%	3%	3%	7%	2%

Note: Calculations based on a series of assumptions about a hypothetical Doha Development Agenda agreement. Direct payments are assumed to be included in the green box. Marketing loan benefits and price support programs for sugar and dairy are assumed to be included in the amber box, and crop insurance net indemnities are treated as non-commodity specific amber box support. Under the U.S. proposal, countercyclical payments would qualify for the blue box. The U.S. proposal would limit the total current Aggregate Measure of Support to \$7.6 billion, and blue box support to \$4.8 billion. Overall Trade Distorting Support includes support in the amber and blue boxes, as well as product-specific and nonproduct specific *de minimis* support. Press reports have mentioned \$17 billion as one possible limit on U.S. Overall Trade Distorting Support. Any actual WTO agreement is certain to result in different commitments than assumed here.