How Much "Safety" Is Available under the U.S. Proposal to the WTO?

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Executive Summary

Critics of the U.S. proposal to the World Trade Organization (WTO) made in October 2005 are correct when they argue that adoption of the proposal would significantly reduce available support under the current farm program structure. Using historical prices and yields from 1980 to 2004, we estimate that loan rates would have to drop by 9 percent and target prices would have to drop by 10 percent in order to meet the proposed aggregate Amber Box and Blue Box limits. While this finding should cheer those who think that reform of U.S. farm programs is long overdue, it alarms those who want to maintain a strong safety net for U.S. agriculture.

The dilemma of needing to reform farm programs while maintaining a strong safety net could be resolved by redesigning programs so that they target revenue rather than price. Building on a base of 70 percent Green Box income insurance, a program that provides a crop-specific revenue guarantee equal to 98 percent of the product of the current effective target price and expected county yield would fit into the proposed aggregate Amber and Blue Box limits. Payments would be triggered whenever the product of the season-average price and county average yield fell below this 98 percent revenue guarantee. Adding the proposed crop-specific constraints lowers the coverage level to 95 percent.

Moving from programs that target price to ones that target revenue would eliminate the rationale for ad hoc disaster payments. Program payments would automatically arrive whenever significant crop losses or economic losses caused by low prices occurred. Also, much of the need for the complicated mechanism (the Standard Reinsurance Agreement) that transfers most risk of the U.S. crop insurance to the federal government would be eliminated because the federal government would directly assume the risk through farm programs.

Changing the focus of federal farm programs from price targeting to revenue targeting would not be easy. Farmers have long relied on price supports and the knowledge that crop losses are often adequately covered by heavily subsidized crop insurance or by ad hoc disaster payments. Farmers and their leaders would only be willing to support a change to revenue targeting if they see that the current system is untenable in an era of tight federal budgets and WTO limits.

Keywords: farm safety net, revenue targeting, U.S. farm programs, WTO.

HOW MUCH "SAFETY" IS AVAILABLE UNDER THE U.S. PROPOSAL TO THE WTO?

In an effort to jump-start the Doha round negotiations in the World Trade Organization (WTO), the United States proposed new limits on trade-distorting domestic subsidies. While it remains to be seen whether this proposal will ultimately be successful in furthering the negotiations, it has already caused some alarm in the U.S. Congress and among farm groups because of the size of the cuts in subsidy levels that would need to take place under the proposal. For example, in a public letter to the secretary of agriculture, Senator Chambliss, the chair of the Senate Agriculture Committee, requested that there be "no net reduction in the agricultural safety net."[1] And the proposal was criticized by Larry Mitchell, chief executive of the American Corn Growers Association, as "…yet another in a series of policy decisions by the present administration to unravel the safety net for the nation's farm families. The administration's decision to slash our essential domestic farm program benefits by 50 to 60 percent is ill advised, irresponsible and ill timed."[2]

These two statements support the notion that the purpose of U.S. farm subsidies is to create a safety net for U.S. agriculture. Such a purpose implies that subsidies should increase when financial stress increases. But countercyclical aid to farmers is generally considered to be trade distorting because it reduces the supply contracting incentives of low prices or unsuitable growing conditions. Decoupled support, such as U.S. direct payments and E.U. single farm payments, is generally considered to be non-trade distorting because it does not change in response to income levels, prices, crop yields, or farmers' planting decisions.

The dilemma for U.S. trade negotiators is that they need to assure the world that the U.S. proposal would result in meaningful reductions in U.S. domestic support while simultaneously assuring Congress that the proposal would provide adequate flexibility to maintain an adequate agricultural safety net for U.S. farmers. Is it possible to reform U.S.

farm programs to make them less trade distorting while simultaneously maintaining effective countercyclical "safety net" protection for U.S. farmers? We provide insight into this question by estimating the extent of the cuts that will have to be made in current program parameters in order to meet the U.S.-proposed limits. We demonstrate that the size of the cuts that are required would indeed make the current set of farm programs less trade distorting. But the size of the cuts needed would also significantly lower the amount of safety provided by the U.S. program. We then estimate the extent to which a redesign of U.S. farm programs to maximize countercyclical support could provide an adequate safety net. Using prices and detrended yields (not acreage or production) over the period from 1980 to 2004, we estimate that a program with the following three components would meet the proposed U.S. limits on trade-distorting subsidies with a high degree of probability:

1. Individual farmer crop revenue is guaranteed not to fall below 70 percent of the Olympic average of the previous five years of crop revenue.
2. If the product of national season-average price and county-average yield falls below 85 percent of the product of expected county yield and the effective target price (as defined in the 2002 U.S. farm bill), then all farmers in a county will receive the difference on each planted acre. Such payments are capped at 15 percent of the product of expected county yield and the effective target price.
3. If the product of national season-average price and county-average yield falls below 95 percent of the product of expected county yield and the effective target price, then all farmers in a county will receive the difference on each base acre that is assigned to their farm. Such payments are capped at 10 percent of the product of expected county yield and the effective target price.

We report how we derived these estimates in the remainder of the paper.

The U.S. Proposal for Agricultural Domestic Support

In October 2005, the United States made a proposal for the next WTO agreement on agriculture that included significant changes for all three pillars of the agricultural negotiations: domestic support, market access, and export competition. The domestic support pillar deals with programs in the U.S. farm bill. Under the current WTO

agriculture agreement, agricultural support programs are divided into three "boxes": Green, Blue, and Amber. Green Box programs are considered the least trade distorting and are not constrained. There is a specific set of guidelines a program must meet in order for it to be considered Green Box. Conservation programs are an example of Green Box programs. Blue Box programs are thought to be more trade distorting, but production limits or fixed payment bases are to be put in place to limit the amount of distortion. Currently, Blue Box programs do not face spending limits. The pre-1996 farm bill deficiency payment program is an example of a Blue Box program. Amber Box programs are thought to be the most trade distorting, and these are the programs that are most constrained under the agricultural agreements. Programs that go into the Amber Box are subcategorized depending on two factors: the targeting of the program to one or many products (product versus non-product specific) and the financial size of the amount of support. Once the programs are sorted into the product-specific and non-product-specific groups, the value of the support is compared to 5 percent of the value of agricultural production for the product (in the case of product-specific support) or for all agricultural products (in the case of non-product-specific support). If the value of support is less (more) than the 5 percent rule, then the support does not (does) count against the Amber Box spending limits. This rule is called the *de minimis* rule, exempting small amounts of agricultural support from the Amber Box limits.

In July 2004, members of the WTO agreed to a framework for the next agricultural agreement. The agreement included a cap of 5 percent of the value of agricultural production on Blue Box support, a reduction in the *de minimis* percentage, product-specific limits on Amber Box support, a reduction in the Amber Box support limit, and a reduction of the amount of support from the combination of the Blue and Amber boxes and *de minimis* programs. The U.S. proposal further built upon this agreement in several ways. Support limits would be lowered over a five-year period. Blue Box support would be capped at 2.5 percent of the value of agricultural production. The Amber Box support limit would be cut by 60 percent (from $19.10 billion to $7.64 billion). Product-specific caps would be based on 1999-2001 support levels for the product. The *de minimis* percentage would be reduced to 2.5 percent. The total amount of allowable support under

the combination of the Blue and Amber boxes and *de minimis* programs would fall by 53 percent (Office of the United States Trade Representative).

Table 1 shows the amounts of product-specific Amber Box support the U.S. reported during the 1999-2001 period. Dairy, soybeans, corn, cotton, and sugar had the largest amounts of support. Beef and pork had no reported support during the period. If we use the average level of support as the product-specific cap (the proposal does not state an exact definition of the cap), then the sum of the product-specific caps is $16.13 billion. This greatly exceeds the overall Amber Box proposed limit of $7.64 billion, so not all of the commodities could be supported to the maximum level at the same time. Thus, it is likely that the United States would find that the overall Amber Box limit and some of the product-specific limits would be binding under current U.S. farm programs.

Fitting Current Programs into the U.S. Proposal

Current programs use two different prices to determine if a payment is to be received. The countercyclical payment (CCP) program uses the national season-average price whereas the marketing loan program uses posted county prices that vary each day. The selection of which of these two prices to use will determine the level of protection that can be offered to farmers.

The idea of the marketing loan program is to provide farmers with an absolute guarantee that the price they receive for their crop will be no lower than the loan rate in their county. The idea is that if the local market price is less than the loan rate on the day that a farmer sells a crop, then a payment is made to compensate for the difference. This requires that daily prices be calculated. However, many farmers speculate with the marketing loan program by taking a loan deficiency payment (LDP) when they estimate that the gap between the loan rate and local market prices is widest: that is, when market prices are at their low point after harvest. This typically occurs for most regions right after harvest.

To illustrate why the choice of price matters, we calculated the average price gap between the season-average farm price and the price indicated by average LDP rates historically when average LDP rates are positive. The season-average farm price is the average price received by farmers. Positive LDP rates indicate prices are below the loan

TABLE 1. Reported Amber Box support by product, 1999-2001

Product	1999	2000	2001	Average
	\$ Million)			
Dairy	4,660	5,070	4,483	4,738
Soybeans	2,856	3,606	3,610	3,358
Corn	2,554	2,757	1,270	2,193
Cotton	2,353	1,050	2,810	2,071
Sugar	1,207	1,177	1,061	1,149
Wheat	974	847	189	670
Rice	435	624	763	607
Tobacco	924	519	-1	481
Peanuts	349	438	305	364
Sunflower	143	161	55	120
Apples	99	175	0	91
Sorghum	154	84	6	81
Canola	39	82	23	48
Barley	40	70	16	42
Oats	31	45	4	26
Flaxseed	11	25	12	16
Sheep and Lamb	13	10	22	15
Wool	9	33	0	14
Potatoes	14	26	0	13
Honey	0	29	0	10
Cranberries	20	0	0	7
Onions	0	10	0	3
Tomatoes	0	7	0	2
Peaches	0	7	0	2
Safflower	2	3	0	2
Mohair	2	2	0	1
Crambe	1	2	0	1
Pears	0	3	0	1
Apricots	0	2	0	1
Mustard Seed	1	0	0	0
Rapeseed	0	0	0	0
Sesame	0	0	0	0
Beef and Veal	0	0	0	0
Hogs and Pigs	0	0	0	0
Rye	0	0	0	0

rate at some point during the crop year, and this can occur even when the season-average price is above the loan rate. Given average LDP rates for each year, we can back out a national price representing the average price when LDPs are taken. This is equal to the national loan rate less the average LDP rate. Comparing these prices to the season-average prices for each year, we compute the price difference between the two and average this difference across all years. Table 2 shows the calculation of the corn LDP price gap. We subtract this price gap from the 2005 projected prices to calculate projected prices for LDP utilization. We then subtract these projected prices from the national crop loan rates to determine 2005 projected average LDP rates. Projected LDP expenditures are equal to projected production times the projected average LDP rate.

Table 3 shows the calculated LDP price gap by crop. For rice and cotton, the price gap is calculated from the U.S. season-average prices and not the adjusted world prices actually used in the marketing loan program. As shown, all farmers have used the LDP price gap to their advantage. The typical farmer takes an LDP just after harvest and then successfully markets his crop at a significantly higher price later in the year. The LDP program therefore overcompensates farmers in most low-price years in that, on average, farmers market their crop for a price greater than the guaranteed price, which is the county loan rate. This suggests that use of the season average price would provide more targeted countercyclical support, and because it would lower program costs, use of the season-average price would allow target revenues to be higher than they would be if the posted county price were used.

TABLE 2. Corn LDP price gap calculation

Year	Season-Average Price	National Loan Rate	Average LDP Rate	LDP Price Gap
	($ per bushel)			
1998	1.94	1.89	0.14	0.19
1999	1.82	1.89	0.26	0.19
2000	1.85	1.89	0.26	0.22
2001	1.97	1.89	0.12	0.20
2002	2.32	1.98	0.00	0.34
2003	2.42	1.98	0.01	0.45
2004	1.95	1.95	0.24	0.24
Average				0.26

TABLE 3. LDP price gap by commodity

Crop	LDP Price Gap
	($ per bushel)
Barley*	0.78
Corn	0.26
Oats	0.23
Sorghum	0.22
Soybeans	0.56
Wheat	0.48
	($ per pound)
Cotton	0.0757
Peanuts	0.0182
	($ per hundredweight)
Rice	2.01

*Price gap calculated from the "all-barley" price.

To see how the policy prices under the current programs would have to be changed to fit the U.S. proposed WTO limits, we computed what CCP and LDP expenditures would have been over the 1980 to 2004 period had the two programs been in place. This historical analysis will give us a general idea about the magnitude of the changes that would be required to meet the proposed limits. Finer detail would require a forward-looking analysis. For the computation, we used the actual prices during the period, but we updated acreage to 2004 levels and yields as shown in the equation below.

$$Adjusted\ Yield_t = Trend\ Yield_{2004} * \left(\frac{Actual\ Yield_t}{Trend\ Yield_t} \right)$$

where *t* is the crop year.

To compute the WTO limits, we assumed a total value of U.S. agricultural production of $230 billion. This results in a Blue Box cap of $5.75 billion. Given this and the Amber Box limit of $7.64 billion, we allocated $750 million of Blue Box support and $1.04 billion in Amber Box support to commodities not covered by our analysis (mainly dairy and sugar), leaving $5 billion in Blue Box support and $6.6 billion in Amber Box support for the nine commodities examined here.

We then computed the loan rates and target prices that would have resulted in support exceeding the new WTO support limits 4 percent of the time (1 year out of the 25 years examined). The 4 percent target was chosen to reflect a couple of points. First, any

countercyclical program has a stochastic payout stream that will rise and fall over time. Thus, such a program could exceed any given bound if left unchecked. Second, the United States has shown a willingness to live with the possibility of exceeding WTO support limits (see the FAPRI 2002 U.S. Baseline Briefing Book discussion on WTO issues).

To begin, we assumed that all commodities would face the same proportional reductions in the loan rate and target price to reach the limits of $6.6 billion for Amber Box support and $5 billion for Blue Box support for the commodities covered. Given the price and yield pattern seen from 1980 to 2004, a 9 percent reduction in loan rates is needed to reduce marketing loan support to the U.S. proposed Amber Box limit. Table 4 shows the adjusted loan rates. Table 5 shows the estimated historical Amber Box support at the adjusted loan rates. The 1986 crop year was the one year in which the limit was exceeded (by a large margin). We estimate that $10.26 billion would have flowed out through the marketing loan program, with corn receiving the lion's share at $6.45 billion. Corn's season-average price for 1986 was $1.50 per bushel, well below even the lowered loan rate of $1.77. Two other years nearly hit the limit. The 1999 and 2001 crop years also exhibited low commodity prices and high marketing loan support. Corn would have received the most support in 1999; cotton and soybeans would have received the most support in 2001.

To meet the $5 billion Blue Box limit, given the reduced loan rates and the current direct payment rates, target prices would need to be reduced by 10 percent.

TABLE 4. Impact of U.S. WTO proposal on commodity loan rates

Crop	Units	Current Loan Rate	Adjusted Loan Rate
Barley	($/bushel)	1.85	1.68
Corn	($/bushel)	1.95	1.77
Cotton	($/pound)	0.5200	0.4732
Oats	($/bushel)	1.33	1.21
Peanuts	($/pound)	0.1775	0.1615
Rice	($/hundredweight)	6.50	5.92
Sorghum	($/bushel)	1.95	1.77
Soybeans	($/bushel)	5.00	4.55
Wheat	($/bushel)	2.75	2.50

TABLE 5. Estimated historical Amber Box support at adjusted loan rates

Year	Wheat	Oats	Rice	Cotton	Corn	Sorghum	Peanut	Soybean	Barley	Total
					($ million)					
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	75	0	0	0	0	0	75
1982	0	0	3	0	0	0	0	0	33	36
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	18	18
1985	0	44	304	0	0	29	0	180	47	603
1986	1,195	46	949	259	6,445	302	0	975	89	10,261
1987	950	0	144	0	1,119	144	0	0	69	2,427
1988	0	0	241	0	0	0	0	0	0	241
1989	0	0	127	0	0	0	0	0	4	131
1990	856	58	256	0	0	0	0	0	33	1,203
1991	0	41	74	0	0	0	0	0	39	153
1992	0	26	437	108	0	49	0	0	47	667
1993	0	16	0	0	0	0	0	0	52	68
1994	0	42	252	0	0	0	0	0	45	339
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	8	8
1998	800	68	0	0	1,039	154	0	524	51	2,636
1999	1,183	61	395	756	2,301	205	0	1,298	33	6,232
2000	814	66	477	377	2,012	42	0	1,579	36	5,403
2001	440	0	806	2,092	696	23	0	2,088	23	6,169
2002	0	0	737	854	0	0	0	0	0	1,591
2003	0	0	0	0	0	0	0	0	0	0
2004	0	8	115	925	1,016	132	0	30	0	2,226
Limit	670	27	607	2,071	2,194	81	364	3,358	42	6,600

Table 6 shows the current and adjusted target prices. Table 7 shows the resulting estimated historical CCP expenditures by commodity and in total for the 1980-2004 period. The 1999 crop year was the year that exceeded the Blue Box limit. Seven of the nine crops had season-average prices low enough to trigger CCP payments. The 1986 and 2000 crop years also approached the $5 billion limit, with seven of the nine crops receiving CCP payments.

So given proportional cuts of 10 percent in the target prices and 9 percent in the loan rates, the United States could meet, with a high degree of confidence, the proposed limits in Amber Box and Blue Box support. However, the proposal also includes product-specific limits on Amber Box support as well. If we compare the product-specific limits outlined in Table 1 to the commodity-specific support estimated in Table 5, we see that while the overall Amber Box limit was met, the product-specific limits were not met in several cases. We returned to the historical analysis and calculated the loan rates required to meet the product-specific limits. For cotton, peanuts, and soybeans, no reduction in loan rates is needed. For corn, a 10 percent reduction in the loan rate is needed to reduce marketing loan support to meet the limit. For the other crops, the loan rate reduction needed is on the order of 17 to 25 percent. These results also show that the United States could be bound by both the overall limits and the product-specific limits and that proportional reductions may not work.

TABLE 6. Impact of U.S. WTO proposal on commodity target prices

Crop	Units	Current Target Price	Adjusted Target Price
Barley	($/bushel)	2.24	2.02
Corn	($/bushel)	2.63	2.37
Cotton	($/pound)	0.7240	0.6516
Oats	($/bushel)	1.44	1.30
Peanuts	($/pound)	0.2475	0.2228
Rice	($/hundredweight)	10.50	9.45
Sorghum	($/bushel)	2.57	2.31
Soybeans	($/bushel)	5.80	5.22
Wheat	($/bushel)	3.92	3.53

TABLE 7. Estimated historical Blue Box support at adjusted target prices and loan rates

Year	Wheat	Oats	Rice	Cotton	Corn	Sorghum	Peanut	Soybean	Barley	Total
					($ million)					
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	449	0	0	0	0	0	449
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	6	111	169	0	18	0	0	0	304
1986	1,172	8	231	699	2,639	111	0	0	33	4,894
1987	1,015	0	0	0	1,242	111	0	0	0	2,368
1988	0	0	53	289	0	0	0	0	0	342
1989	0	0	0	0	0	0	0	0	0	0
1990	922	8	78	0	0	0	0	0	0	1,009
1991	19	8	0	169	0	0	0	0	0	196
1992	0	0	231	479	144	41	0	0	0	895
1993	0	0	0	39	0	0	0	0	0	39
1994	0	7	62	0	0	0	0	0	0	69
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	830	8	0	0	1,242	111	0	0	0	2,191
1999	1,172	8	228	1,117	2,255	111	0	230	0	5,121
2000	899	8	231	869	2,002	45	0	352	0	4,406
2001	528	0	231	1,117	988	15	0	352	0	3,232
2002	0	0	231	1,117	0	0	85	0	0	1,433
2003	0	0	0	0	0	0	44	0	0	44
2004	0	0	0	1,117	1,157	111	33	0	0	2,418
Limit										5,000

Reductions of this magnitude would be seen by many agricultural groups as creating a sizable hole in the U.S. agricultural safety net. Whereas the combination of the CCP and marketing loan protected producers against corn prices below $2.35, soybean prices below $5.36, and wheat prices below $3.40, the new levels would be $2.09, $4.78, and $3.01, respectively. Also, the CCP and marketing loan programs do not respond to yield disasters. As Table 8 illustrates, in the drought years of 1983 and 1988 and the flood year of 1993 very little support would have been given to U.S. agriculture under these programs, while in the bumper crop year of 2004 significant payments were given.

TABLE 8. Estimated historical combined support

Year	LDP	CCP	Total
		($ million)	
1980	0	0	0
1981	75	449	524
1982	36	0	36
1983	0	0	0
1984	18	0	18
1985	603	304	907
1986	10,261	4,894	15,155
1987	2,427	2,368	4,794
1988	241	342	582
1989	131	0	131
1990	1,203	1,009	2,212
1991	153	196	349
1992	667	895	1,562
1993	68	39	107
1994	339	69	408
1995	0	0	0
1996	0	0	0
1997	8	0	8
1998	2,636	2,191	4,827
1999	6,232	5,121	11,353
2000	5,403	4,406	9,809
2001	6,169	3,232	9,401
2002	1,591	1,433	3,024
2003	0	44	44
2004	2,226	2,418	4,643

Redesign of U.S. Farm Policy

The motivation for our proposed redesign of U.S. farm policy is illustrated nicely in Figure 1. Average per-acre market revenue for Iowa corn farmers from 1980 to 2004 peaked in 1995, hit a minimum in 1993, and from 1998 to 2001 hovered around $250 per acre. Had the current CCP and LDP programs been in place over this period, $100 per-acre payments would have occurred during the period from 1998 to 2001, and they did occur during 2004 and 2005. No payments would have occurred during 1993. Peak after-payment revenue occurred in 2004 (with 2005 close behind). Note that 2004 market revenue was about the same as market revenue in 1997, but Iowa farmers received no payments in 1997.

The explanation for the mismatch between farm revenue and payments is that the current set of U.S. programs targets low prices rather than low revenue. In 2004, low prices triggered large payments even though per-acre income levels appear adequate. This illustrates that low prices are not synonymous with financial stress because high yields can bolster farm income. Similarly, high corn prices in 1993 clearly were not an indicator of financial health because Iowa corn farmers had only half a crop to sell.
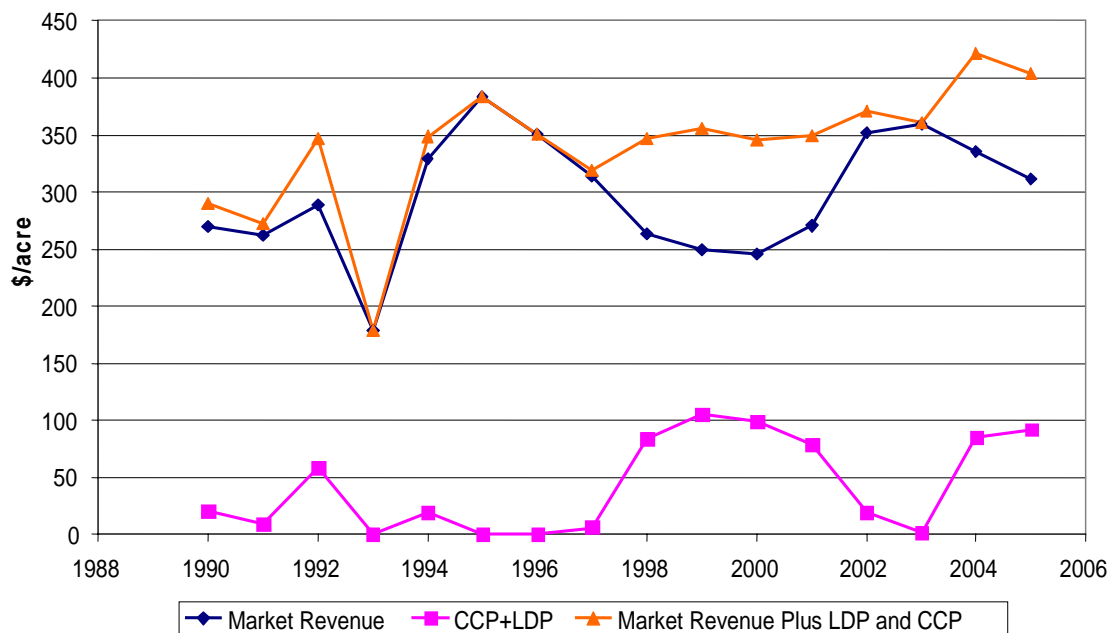
FIGURE 1. Average Iowa corn revenue with and without current subsidies

Redirecting U.S. farm programs toward hitting a revenue target rather than a price target could reduce aggregate expenditures while simultaneously reducing the years in which farm income fell to unacceptable levels, as occurred in Iowa in 1993. The cost savings accrue from two sources. First, overcompensation would be reduced in high-yield, low-price years by accounting for the fact that farmers have more production to sell in these years. Second, although payments from a revenue-targeting program would be greater when yields are low—such as occurred in 1993 in Iowa—the probability that low yields would trigger payments to all states and regions is close to zero because crop yields are not perfectly correlated across the country. For example, 1993 corn yields in Illinois did not suffer as they did in Iowa.

The foregoing discussion suggests that moving U.S. farm programs to a counter-cyclical program that targets revenue instead of price could reduce aggregate expenditures while simultaneously improving the farm safety net. If this combination is possible, then this is exactly what is needed to assuage concerns that the U.S. proposal would "unravel" U.S. farm support.

Key Design Aspects

Moving to a program that targets revenue instead of price is just the first step in designing a new farm program. The extent to which such a program would actually improve the safety net while reducing expenditures depends on three program attributes: (1) individual versus area guarantees; (2) if an area guarantee is chosen, which area yield to use; and (3) the choice of which price to use.

Individual vs. Area Guarantee. What features would be embodied in an effective safety net program? Farmers' preferences are simple: they prefer higher average payments, and if farmers value payments more when their income is low, then they would prefer that the payments arrive when their income is low. Expressed in the context of a farm program, these preferences mean that farmers would prefer a countercyclical program that makes large average payments. Furthermore, they would prefer that payments would arrive when their individual income was low. Abstracting from production costs, income is low when market revenue is low, which implies that farmers prefer revenue insurance plans such as Revenue Assurance, Income Protection, and Crop Revenue Coverage. Part of the preference for revenue insurance plans comes from the

preferences of bankers who loan farmers money. Bankers often use the revenue insurance policy as a guarantee for their production loan.

The downside of providing farmers with high revenue guarantees at the individual farm level is that these guarantees would induce farmers to change their planting, crop management, and marketing decisions in response to the incentives in the program. That is, high government guarantees at the individual farm level would induce farmers to farm the program rather than make decisions based on market considerations. Such moral hazard considerations are why the U.S. crop insurance program limits the individual guarantees that are available to 85 percent of expected revenue.

One approach that has been taken to reduce moral hazard problems of high coverage levels is to make payments when an indicator of farm income is low rather that when actual farm income is low. For example, Group Risk Income Protection (GRIP) in the U.S. crop insurance program makes indemnity payments when the average county revenue is less than a county revenue guarantee. Basing payments on area revenue rather than individual revenue will decrease moral hazard because farmers can influence the size of the payments only through their acreage decisions. Thus farmers will look to market signals when deciding on how to care for, harvest, and market their crops.

Further decoupling of payments from production decisions can be accomplished by making payments on fixed base acres, much like what is done with the U.S. CCP program. The trade-off of moving to more decoupled countercyclical payments is more market orientation, resulting in a decrease in moral hazard but less individual income protection.

Which Area Yield to Use? If moral hazard concerns lead us away from individual farm guarantees, then we must choose which area yield to use. GRIP uses the county yield. Former Congressman Stenholm's SIPP (Supplemental Income Protection Program) proposal used national yields. Other natural alternatives are state yields and crop reporting district yields.

There are three considerations in this choice. The first is the degree of correlation between farm yields and the chosen area yields. A higher correlation implies a better safety net because payments will arrive more often when income is low. This consideration argues for a low level of aggregation, such as at the county level.

The second consideration is cost. The greater is the variability in yield, the higher will be the expected cost of the program. Variability of yield decreases as the level of aggregation increases. This consideration argues for a high level of aggregation, such as national or state yields.

The final consideration is the degree of spatial correlation between yields. Lower spatial correlation implies lower year-to-year variability in total program payments. Low temporal variability allows more safety to be built into a program that must meet a limit on yearly expenditures. To see why low variability helps, consider the following situation. Suppose the United States has agreed to limit payments to $5 billion per year and Congress is considering two program options. One option is projected to pay out the maximum of $5 billion with a probability of 20 percent, $1 billion with a probability of 20 percent, and nothing with a probability of 60 percent. The expected payout from this option is $1.2 billion. The other option pays out $4 billion with a probability of 20 percent, $2 billion with a probability of 20 percent, and nothing with a probability of 60 percent. The expected payout under this option is also $1.2 billion. Under the first program option there is no room for any increase in support because the $5 billion limit would be exceeded. However, the second option still has room for additional support because the maximum payout is still less than the limit.

This simple example illustrates that programs that have lower variability in year-to-year payments can offer more average support than programs that have higher variability. By their very nature countercyclical programs must vary payments to individuals; otherwise, they would be fixed payments. But different countercyclical programs will differ in the variability of total payments made to all individuals. For example, compare the variability of aggregate payments in a safety net program that pays corn farmers when the corn price falls below a certain amount to a program that pays farmers when their yield falls below a certain amount. When price falls below the target price, every eligible farmer in the United States would receive a payment because for most commodities market prices are about the same across the country. Under the yield safety net program, only a portion of farmers would receive payments in a year because growing conditions are not perfectly correlated across the country. In other words, price risk is more systemic than yield risk.

Taking this example one step further, if there is a limit on aggregate payments, then the amount of protection that can be offered to each farmer under a program that protects against yield shortfalls will be much higher than a program that offers protection against price shortfalls. A program that protects revenue can offer an intermediate level of protection because revenue risk is more systemic than yield risk but less systemic than price risk. Furthermore, a revenue countercyclical program that pays off when national revenue is low will have greater variability than a program that pays off when individual farm revenue is low. Thus, this consideration argues for a low level of aggregation, such as at the county level.

Which Price to Use? There are two choices concerning prices that need to be made. The first concerns what price to use to set the target revenue level. The second concerns what price to use to determine whether a payment should be made.

Our current price support programs pay farmers if market price falls below a price trigger, the level of which is set by Congress in farm legislation. CCP payments flow when the season-average price falls below the fixed effective target price and marketing loan payments flow when the posted county price falls below the fixed loan rate. The advantage of this approach is that farmers are assured (barring subsequent congressional action) of a certain level of support for the life of the legislation. One disadvantage is that as the expected market price drops for a particular crop, farmers have no incentive to respond to the low price by cutting production. Thus, fixed support prices tend to perpetuate periods of low market prices.

A market-based alternative would be to use futures prices to estimate expected price and then base the target revenue on this expected price. Thus, in low-price years, farmers would have more of an incentive to cut production. And in high-price years, farmers would have additional incentive to expand production. Crop revenue insurance plans provide market-based guarantees. For example, GRIP calculates expected revenue as the product of the average futures price over a period of days and expected county yields. The reason for using a market-based price to determine the guarantee is that crop insurance companies do not want to be in a position of having to offer a guarantee that is well above what markets project a crop is worth.

Program Details

The U.S. proposal anticipates that U.S. farm countercyclical support programs would fall into both the Amber Box and the Blue Box, with the current CCP program falling into the Blue Box and the marketing loan program falling into the Amber Box. Thus, we need to allocate new countercyclical revenue payments into both the Amber and Blue boxes in order to maximize the amount of support in the new safety net. However, before we turn to the details of new Amber and Blue box programs, we will present the base countercyclical revenue program that will not count against either Amber Box or Blue Box limits because it will fall into the Green Box.

Green Box Program Countercyclical Support. Section 7 of Annex 2 of the Uruguay Round Agreement on Agriculture spells out the criteria that an income insurance program must adhere to if it is to be considered as Green Box support:

> (a) Eligibility for such payments shall be determined by an income loss, taking into account only income derived from agriculture, which exceeds 30 percent of average gross income or the equivalent in net income terms (excluding any payments from the same or similar schemes) in the preceding three-year period or a three-year average based on the preceding five-year period, excluding the highest and the lowest entry. Any producer meeting this condition shall be eligible to receive the payments.

> (b) The amount of such payments shall compensate for less than 70 percent of the producer's income loss in the year the producer becomes eligible to receive this assistance.

> (c) The amount of any such payments shall relate solely to income; it shall not relate to the type or volume of production (including livestock units) undertaken by the producer; or to the prices, domestic or international, applying to such production; or to the factors of production employed.

There is a bit of a contradiction in these statements in that payments can be made when farm income is low, but farm income is determined by the output price and production levels. That is, an income loss can only occur if either prices or production drop. Yet paragraph (c) indicates that the size of payments cannot depend on either production levels or prices.

For our purposes here, we will focus attention on paragraphs (a) and (b), which imply that a guarantee that equals 70 percent of the Olympic average of the previous five

years of revenue can be considered as Green Box support. Hence, it will not count toward the limits in the Amber and Blue boxes. We also assume that such payments can be made on a crop-specific basis, if for no other reason than a farmer with a single crop would qualify for this type of payment. Another interpretation is that only whole-farm Green Box income insurance programs would be allowed, which would be similar to the Adjusted Gross Revenue (AGR) insurance offered in the U.S. crop insurance program.

What this implies is that a base level of countercyclical revenue support can be given to U.S. farmers in the form of a 70 percent revenue guarantee. As shown in Figure 2, 70 percent revenue coverage is the most popular level of coverage for farmers who buy Revenue Assurance. Ironically, the Unites States reports all crop insurance subsidies as Amber Box support. Adopting a Green Box program at a 70 percent coverage level would thereby move a significant amount of Amber Box support over to the Green Box.

A New Amber Box Program. The next revenue countercyclical program to be developed will build on the Green Box 70 percent base and will be designed to fit into the Amber Box. Amber Box spending is generally tied to production or price levels and is considered to be the most trade distorting. As discussed in the previous section, offering individual farm guarantees at high coverage levels will begin to affect farmers' planting
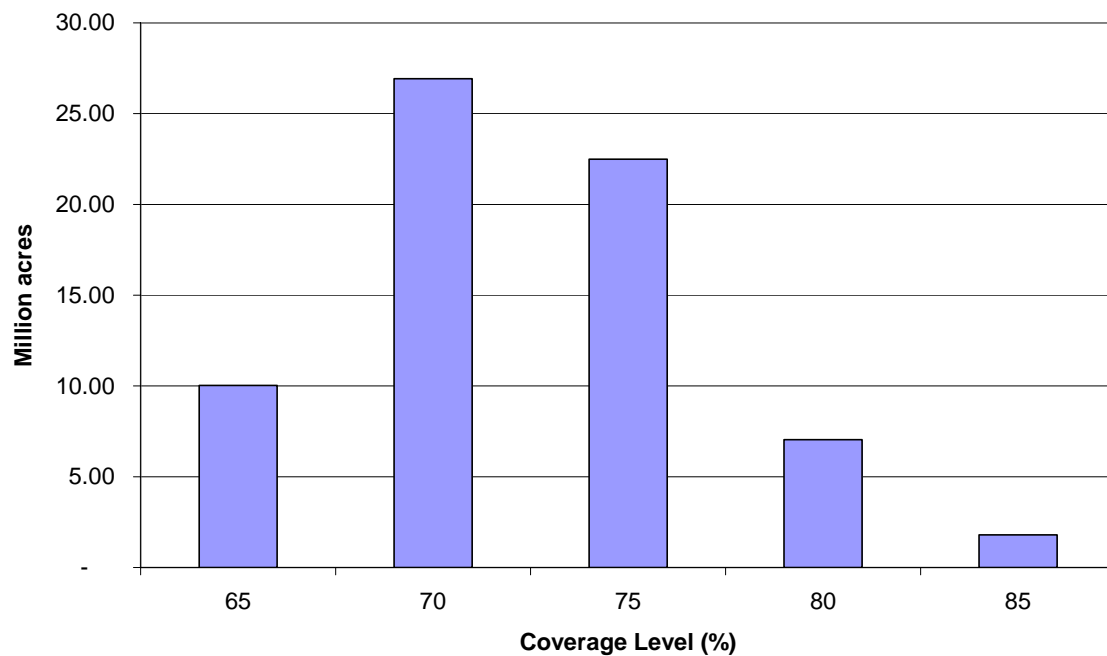
FIGURE 2. Revenue Assurance insured acreage in 2005

and crop management decisions. Given the 30 percent deductible built into the Green Box program, such distortions are likely minimal. But at higher coverage levels, such distortions will likely begin to come into play.

As discussed, a partial decoupling of support from management decisions can be made by basing the next level of countercyclical support on area yields. Given that our objective is to design an effective farm-level safety net, and given the limited amount of spatial poolability from national or state yields, we choose to use county yields.

Payments will be made whenever actual county revenue falls below the Amber Box trigger revenue level for each crop. To reduce the amount of change that would have to take place relative to current farm program structures, we propose to use fixed target prices to determine the trigger revenue levels rather than expected market prices. For lack of a better alternative, we will use the effective target prices that are in place for the 2005 crop year. Table 9 presents the levels. To maximize the amount of coverage that this program will provide, we calculate actual county revenue as the product of the season average price and county average yield.

The trigger revenue level will equal some percentage of the product of expected county yield (the same yield used to determine trigger yield and revenue levels in Group Risk Plan and GRIP) and the effective target price. The optimization problem is to maximize the percentage—the "Amber Box coverage level"—such that the probability of total payments across all crops being greater than Amber Box limits does not exceed a certain level. Because this is a program designed to be designated as Amber Box, payments will be based on actual planted acreage.

TABLE 9. Effective target prices for 2005 crop year

Crop	Units	Effective Target Price
Wheat	($/bushel)	3.40
Soybeans	($/bushel)	5.36
Peanuts	($/pound)	0.2295
Cotton	($/pound)	0.6573
Sorghum	($/bushel)	2.22
Corn	($/bushel)	2.35
Oats	($/bushel)	1.416
Rice	($/hundredweight)	8.15
Barley	($/bushel)	2.00

A per-acre payment for a particular crop is given by the following formula:

Amber Payment = min(max(0, α*ETP*E[Y_c] – SAP* Y_c), (α – 0.70)*ETP*E[Y_c])

where $\alpha > 0.70$ is the Amber Box coverage level, *ETP* is the effective target price for a crop, E[Y_c] is the expected county yield, *SAP* is the season average price, and Y_c is the actual county yield. The minimum operation takes place to reflect the 70 percent coverage offered by the Green Box program.

A New Blue Box Program. Additional countercyclical revenue support can be provided with a program that can fit into the proposed Blue Box. Blue Box programs can base payments on actual prices and production levels if they are paid on a fixed acreage base. Therefore, our Blue Box program is similar to our Amber Box program except it will be paid on a fixed acreage base. In addition, it will build support on top of the Amber Box support so that the per-base-acre payment formula is *Blue Payment* = min(max(0, β*ETP*E[Y_c] – SAP* Y_c), (β – α)*ETP*E[Y_c]) where β is the Blue Box coverage level.

To summarize, countercyclical support for farm income can most effectively be achieved by making payments when farm revenue is low. To determine the degree to which an agricultural safety net can be maintained given the limits on support proposed by the United States, we have designed a sequence of three tiered countercyclical programs. The base program provides individual farmers with a revenue guarantee equal to 70 percent of the Olympic average of the past five years of their revenue. Payments under this program would be declared as Green Box support. The second-tier program would provide support from 70 percent to 100*α percent of the product of the effective target price and expected county yield. This support would be paid on planted acreage so it would fall into the Amber Box. The third-tier program would provide support from 100*α percent to 100*β percent. Payments under this third-tier program would be based on base acres so this support could be declared as Blue Box.

Solving for α and β

To determine the settings for α and β, we again utilize an historical analysis. Using the same 1980-2004 period that we used to estimate payments under the current program tools, we estimate payments under the revenue Amber Box and Blue Box programs. As

with the earlier analysis, this historical analysis will give us a general idea about the magnitude of the changes that would be required to meet the proposed limits. Finer detail would require a forward-looking analysis. For the Amber Box program we used 2004 planted acreage and detrended (to 2004) yields. For the Blue Box program we set the base acreage equal to 2004 planted acreage for each of the crops, as this program would be a new program and not necessarily tied to the current base acreage structure. The yield and acreage data is at the county level.

To start, suppose that we did not have to split the new safety net program into separate Amber and Blue boxes, and suppose that there were no product-specific limits. How high a coverage level (α) could we obtain and still meet the combined limit of the Amber and Blue boxes (support at or below \$11.6 billion)? We estimate that a coverage level of 99 percent can be achieved while still meeting the combined limit in 24 out of the 25 years. That is, ignoring the Amber versus Blue Box split, as well as the product-specific limits, 99 percent of the current effective target price could be protected by a county revenue program while still meeting overall WTO limits as proposed by the United States. If we allocate coverage to meet both aggregate Amber and Blue Box limits, the top coverage level is 98 percent. These results suggest that moving to a program that targets revenue can provide a much higher amount of safety than does a program that targets price.

Table 10 shows the outlays from such a 99 percent program. The 1986 crop year is the one year that exceeds the limit. Payments approached the limit for the 1999 and 2000 crop years. We can clearly see how targeting revenue creates a much different pattern of payments than the pattern that occurs when price is targeted. The revenue program would have provided significant payments in the drought year of 1988 and the flood year of 1993 whereas the current array of programs would not (compare Table 10 to Table 8).

However, if we examine the product-specific limit, there would be several instances in which the support from a 99 percent program would exceed the allowed level. To find the parameters that allow the proposed revenue programs to fit all of the requirements (the overall limit, the Amber and Blue Box limits, and the product-specific limits), we estimated α and β such that any of the three limits is only exceeded once out of the 25 years in the historical analysis (a 4 percent chance). Because the Blue Box revenue

TABLE 10. Revenue support available at a 99 percent county revenue guarantee

Year	Wheat	Oats	Rice	Cotton	Corn	Sorghum	Peanut	Soybean	Barley	Total
					($ million)					
1980	311	20	0	805	622	71	100	148	21	2,099
1981	353	1	1	830	132	20	0	113	1	1,451
1982	286	7	113	537	55	6	0	130	1	1,135
1983	77	3	45	701	1,075	78	16	199	1	2,196
1984	237	7	54	466	206	92	1	920	17	2,000
1985	784	21	252	496	355	74	9	591	55	2,635
1986	1,995	29	511	1,256	6,724	234	12	1,046	82	11,890
1987	1,438	4	99	116	2,194	109	2	109	41	4,113
1988	648	21	229	700	4,507	48	1	638	71	6,864
1989	865	29	69	447	1,070	158	6	634	31	3,310
1990	1,336	45	302	261	833	91	22	244	14	3,148
1991	1,269	51	77	607	2,237	89	5	575	11	4,922
1992	651	12	435	748	1,739	59	2	376	18	4,038
1993	664	28	119	910	3,657	42	33	829	14	6,296
1994	463	38	243	63	225	27	2	32	15	1,107
1995	253	8	2	467	50	9	8	118	0	914
1996	369	5	0	151	182	36	3	11	1	758
1997	444	5	1	223	667	15	1	20	5	1,381
1998	1,092	47	33	850	3,737	149	1	958	12	6,879
1999	1,468	49	511	1,651	5,367	157	14	2,201	13	11,431
2000	1,442	47	519	1,517	4,970	173	51	2,178	13	10,908
2001	1,273	10	522	1,728	3,911	128	4	2,388	15	9,979
2002	852	16	522	1,616	2,405	172	186	937	10	6,716
2003	289	11	30	473	601	153	63	326	5	1,950
2004	376	15	89	908	1,924	143	70	596	1	4,121

program is conditioned on both α and β, while the Amber Box revenue program depends only on α, we computed the setting for α and the Amber Box expenditures first. That is, we solved for the α such that both the product-specific limits and the Amber Box support limit of $6.6 billion was met for the nine commodities. As we did in the analysis of the current programs, we assumed that all of the commodities had the same parameter setting (the same α). Table 11 shows the historical results for the Amber Box revenue program for $\alpha = 0.85$, the highest value that satisfies all of the constraints. For the Amber Box revenue program, the binding constraints were the product-specific limits for wheat, corn, and sorghum. If we ignored the product-specific caps in the U.S. proposal, then an α of 0.89 was possible. Thus, some of the product-specific limits were more binding than the overall limit.

One major difference between the Amber Box revenue program and the marketing loan program is the year-to-year variability flow of payments. From Table 8, we can see that in five years (20 percent of the time) no payments would be made under the marketing loan program. The Amber Box revenue program would make payments every year. Thus, while both programs are constructed to the Amber Box constraints, the Amber Box revenue program provides a much steadier flow of payments over the years examined. The reason, of course, is that when revenue is targeted, payments will flow to farmers in counties that experience poor yields, whereas the current programs pay out only when price is low.

Given an α of 0.85 and the $5 billion constraint on Blue Box support, we then estimated β, again assuming all crops receive the same β. Table 12 contains the estimated historical payments under a Blue Box revenue program with $\beta = 0.95$, the highest β possible given the constraints. As there are no product-specific limits in the Blue Box, the Blue Box revenue program need only meet the overall Blue Box limit. As with the Amber Box comparison, the Blue Box comparison between the current programs and the proposed revenue programs shows substantial differences. The Blue Box revenue program would pay out every year, whereas the CCP program would pay out in 17 of the 25 years. Also, the CCP program is based on 85 percent of the current base acreage and yields. The Blue Box revenue program is based on 100 percent of an updated base

TABLE 11. Amber Box revenue support

Year	Wheat	Oats	Rice	Cotton	Corn	Sorghum	Peanut	Soybean	Barley	Total
					($ million)					
1980	115	8	0	337	208	28	40	42	7	786
1981	121	0	0	273	19	5	0	15	0	434
1982	40	1	0	197	5	0	0	29	0	273
1983	13	0	1	221	363	24	4	52	0	678
1984	59	3	1	111	40	27	0	246	6	492
1985	286	8	37	152	36	15	1	89	19	643
1986	927	8	264	536	3,058	104	4	194	26	5,122
1987	482	1	2	31	317	26	0	20	10	888
1988	287	9	31	203	1,909	14	0	143	34	2,630
1989	326	12	2	123	305	65	1	136	13	981
1990	448	15	76	76	114	26	7	48	4	815
1991	460	19	2	176	627	34	1	136	1	1,456
1992	198	2	185	243	438	13	1	92	5	1,176
1993	224	11	3	394	1,544	12	10	309	3	2,510
1994	120	12	24	9	31	6	0	2	3	207
1995	68	2	0	116	5	2	1	22	0	214
1996	133	2	0	43	36	14	0	3	0	231
1997	122	1	0	30	54	2	0	4	0	214
1998	355	17	0	336	895	62	0	220	1	1,887
1999	570	16	259	833	1,866	54	2	663	2	4,266
2000	485	15	267	704	1,625	67	17	559	3	3,743
2001	407	4	270	894	912	45	1	566	4	3,103
2002	272	7	270	785	816	77	77	291	4	2,598
2003	70	3	0	124	133	65	11	70	1	476
2004	103	4	1	262	241	52	10	149	0	822
Limit	670	27	607	2,071	2,194	81	364	3,358	42	6,600

TABLE 12. Blue Box revenue support

| Year	Wheat	Oats	Rice	Cotton	Corn	Sorghum	Peanut	Soybean	Barley	Total
					($ million)					
1980	127	8	0	322	253	29	41	69	10	858
1981	150	0	0	374	59	9	0	54	0	646
1982	139	3	53	222	24	3	0	54	0	490
1983	32	1	13	313	456	34	7	91	0	948
1984	104	3	18	224	90	42	0	403	7	893
1985	329	8	145	219	141	37	6	286	24	1,194
1986	758	14	176	503	2,608	92	5	494	38	4,689
1987	657	2	45	53	1,055	52	1	50	19	1,933
1988	246	8	129	325	1,799	22	0	306	26	2,861
1989	363	11	25	201	452	63	3	286	13	1,419
1990	602	20	155	116	342	41	10	106	6	1,396
1991	550	22	34	275	1,021	37	3	263	5	2,210
1992	294	5	178	325	792	29	1	173	9	1,806
1993	288	12	65	355	1,430	19	14	340	7	2,528
1994	215	17	147	32	93	12	1	16	6	540
1995	118	4	0	217	24	4	4	57	0	428
1996	150	2	0	63	75	14	1	4	1	310
1997	203	3	0	105	278	7	0	10	2	609
1998	496	21	12	346	1,862	59	0	440	5	3,242
1999	620	22	180	582	2,455	70	6	1,011	7	4,953
2000	658	21	180	578	2,327	73	20	1,051	6	4,914
2001	588	5	180	596	2,014	54	2	1,218	7	4,664
2002	375	6	180	593	1,028	67	77	410	4	2,740
2003	126	5	9	222	253	60	31	146	2	854
2004	165	6	30	435	904	61	36	268	0	1,906
Limit										5,000

acreage (2004 planted acreage) and yields (expected county yields). And finally, the CCP program is a program that pays on a national scale; all producers qualify for a CCP payment at the same time. The Blue Box revenue program is a county-level program; only producers for which actual county revenue falls below the revenue guarantee qualify for a payment.

Table 13 shows the prices covered under the revenue programs when the yield coverage is set to 100 percent. The Amber Box revenue program can protect a slightly higher price (α*Effective Target Price) than the adjusted loan rate shown in Table 4. The Blue Box covered price (β*Effective Target Price) is 5 percent below the effective target price (the target price less the direct payment rate) for the current CCP program. Again, the revenue program can protect a higher price than the effective target price for the CCP program after being adjusted to meet the WTO limits.

Another way to compare the two approaches is to examine the payment streams under each. Figures 3 and 4 show the total payments under the current programs and the proposed revenue programs, respectively. The current programs have a much more variable payment stream. In fact, the coefficient of variation (the ratio of the standard deviation to the mean) is nearly twice as high under the current programs as it is for the revenue programs. The LDP and CCP programs would not pay anything in several of the

TABLE 13. Supported prices under the revenue programs with $\alpha = 0.85$ and $\beta = 0.95$

Crop	Units	α*Effective Target Price	β*Effective Target Price
Barley	($/bushel)	1.70	1.90
Corn	($/bushel)	2.00	2.23
Cotton	($/pound)	0.5587	0.6244
Oats	($/bushel)	1.20	1.35
Peanuts	($/pound)	0.1951	0.2180
Rice	($/hundredweight)	6.93	7.74
Sorghum	($/bushel)	1.89	2.11
Soybeans	($/bushel)	4.56	5.09
Wheat	($/bushel)	2.89	3.23
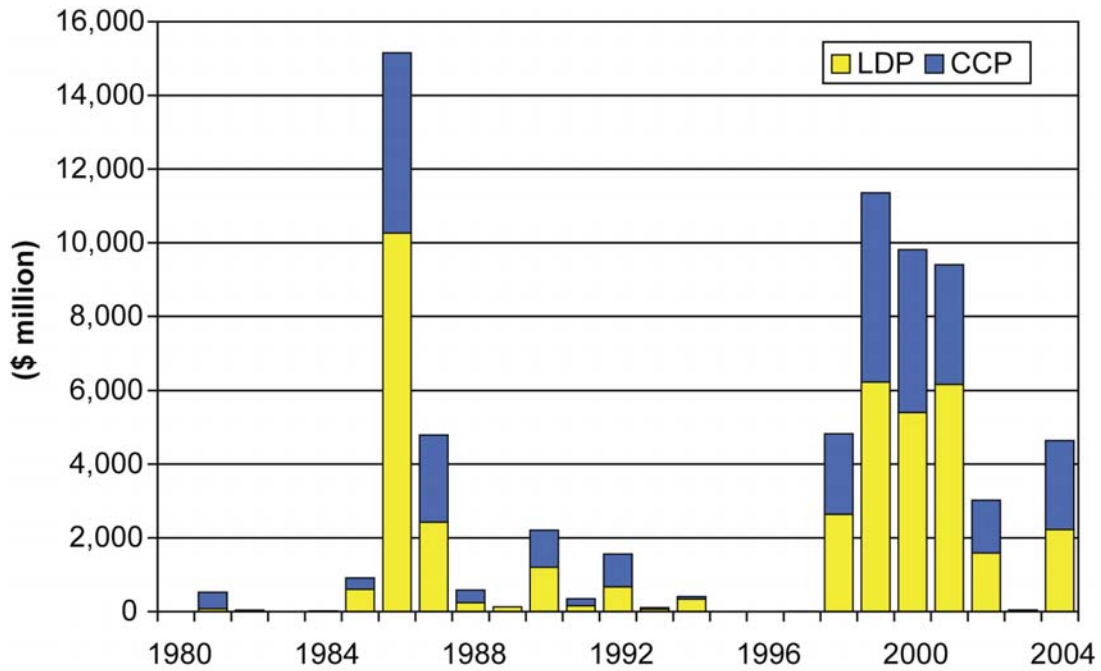
FIGURE 3. Payment stream under the current LDP and CCP programs with adjusted target price and loan rates to meet U.S. proposal limits
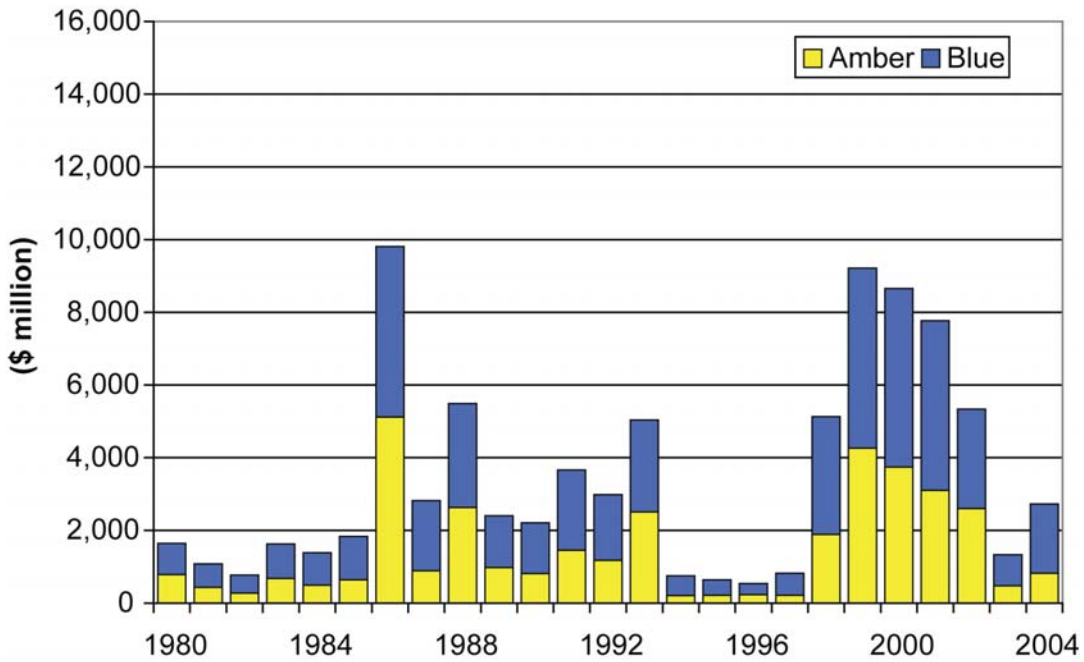
FIGURE 4. Payment stream under the proposed revenue programs

years but would pay over $10 billion twice (1986 and 1999). The revenue programs pay out every year, with a low of $541 million in 1996 and a high of $9.81 billion in 1986. The revenue programs also have the added advantage of providing a higher level of average payments, $3.43 billion versus $2.80 billion for the LDP and CCP programs. So the revenue programs provide larger average payments while at the same time providing more stable payments. This would allow the United States more confidence in meeting its WTO obligations while also giving agricultural producers a greater amount of support.

Conclusions

Critics of the new U.S. proposal to the WTO are correct when they argue that adoption of the proposal would significantly reduce the degree of support that could be given to farmers under the current program structure. Using historical prices and yields from 1980 to 2004, we estimate that loan rates would have to drop by 9 percent and target prices would have to drop by 10 percent in order to meet the U.S. proposed aggregate limits. The loan rates would have to drop even more for some crops to meet the proposed crop-specific limits. If we had conducted the analysis using a forward-looking perspective, then we would have come up with different point estimates of the impact, but our overall conclusion that the U.S. proposal would significantly affect current U.S. farm programs would not change. This conclusion gives support to those who think that reform of U.S. farm programs is long overdue. But it also creates concern among those who want to maintain a strong safety net for U.S. agriculture.

One solution to the dilemma about needing to reform U.S. farm programs to move the WTO negotiations forward while simultaneously providing a strong U.S. safety net for farmers is to redesign U.S. farm programs so that they target revenue rather than price. We estimate that, building on a base of 70 percent Green Box income insurance at the individual farm level, a farm program that provides every producer of program crops a revenue guarantee equal to 95 percent of the product of expected county yield (trend yield) and current effective target price would fit into the WTO limits as proposed by the United States. Payments would be triggered whenever the product of the season-average price and county-average yield fell below this 95 percent revenue guarantee.

Moving from programs that target price to ones that target revenue would have a number of other impacts. The first is that any rationale for ad hoc disaster payments would no longer exist. Farm program payments would automatically be triggered whenever there were significant crop losses or whenever there were significant economic losses caused by low output prices. (Neither a revenue target nor the current programs would cover significant economic losses caused by high production costs.) Second, much of the need for the complicated mechanism (the Standard Reinsurance Agreement) that transfers most risk of the U.S. crop insurance to the federal government would be eliminated because the federal government would directly assume the risk under farm programs. The risk from insuring non-program crops would remain, so some risk transfer mechanism would be needed. In addition, the role of the crop insurance program in providing a safety net for farmers would change. Conceivably, crop insurance companies could underwrite the 70 percent Green Box guarantees. In addition, supplementary insurance coverage could be offered by insurance companies, such as is currently done with hail coverage.

We are under no illusion that changing the focus of federal farm programs from targeting price to targeting revenue would be easy. Farmers have learned to rely on price supports and they have learned how to extract maximum advantage of the rules governing the marketing loan program. Furthermore, farmers have learned that crop losses are often adequately covered by heavily subsidized crop insurance or by ad hoc disaster payments. So farmers know that the current system protects them against low prices and low yields. Why then move to a system that protects revenue directly? Of course, the only answer to this is that farmers will not move unless they see that the current system is untenable in an era of tight federal budgets and WTO limits.

Endnotes

1. Letter from Senator Chambliss to Agriculture Secretary Johanns, dated October 9, 2005, accessed at http://agriculture.senate.gov/wtosc_usda.pdf, October 31, 2005.

2. Comment accessed at http://www.cropchoice.com/leadstryagissues101405.html.

References

Food and Agricultural Policy Research Institute (FAPRI). "FAPRI 2002 U.S. Baseline Briefing Book." FAPRI-UMC Technical Data Report 02-02, July 2002. Available at http://www.fapri.missouri.edu/outreach/publications/2002/FAPRI_UMC_TDR_02_02.pdf.

Office of the United States Trade Representative. "U.S. Proposal for WTO Agriculture Negotiations." October 10, 2005. Accessed at http://www.ustr.gov/Trade_Sectors/Agriculture/US_Proposal_for_WTO_Agriculture_Negotiations.html, November 3, 2005.