Evaluation of Alternative Base Periods for a National Counter Cyclical Payment Program for Rice, Upland Cotton, Corn, Wheat, Soybeans and Sorghum

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Executive Summary

A risk analysis of a national counter cyclical payment (CCP) program for six crops was completed for one year. National planted acre yield risk over the 1986-2000 period was used with FAPRI's stochastic projection of crop prices for 2001 in the analysis. Four alternative base periods for triggering a CCP were evaluated. Three Added AMTA scenarios and a Base scenario of no additional market loss or CCP were also run for each of the crops.

An earlier analysis of 18 alternative base periods for a rice CCP program narrowed the number of alternative scenarios to the seven used for the present study. The same four base periods for the CCP were used for all six crops analyzed. The four base periods for defining a CCP program scenario were:

- Simple Average 1994-1998
- Simple Average 1995-1999
- Olympic Average 1994-1998
- Olympic Average 1995-1999

Average base revenue per planted acre, used to trigger a CCP, was calculated as follows for the two Simple Average base period scenarios:

- Calculate national planted acre yield for each of 5 years

  National planted acre yield = national production / national planted acres

- Calculate national market receipts per planted acre for each of 5 years

  National market receipts per planted acre = national season average price * national planted acre yield

- Calculate the average national market receipts per planted acre calculating a simple average of the 5 years of receipts.

For the Olympic Average base period scenarios, the same formulas were used but the effective average for triggering a payment was calculated ignoring the lowest and highest market revenues.

A simulation analysis was done using historical yield and price variability for each of the crops. Historical correlation of prices and yields over the 1986-2000 period was assumed to continue for the present study. A CCP was paid when the per acre simulated market receipts were less than the average base revenue for a particular CCP scenario. The simulation analysis repeated the sampling process for 100 replications or iterations so the risk of receiving a CCP could be estimated. The formulas for calculating a CCP were:

Stochastic market receipts = Stochastic price for 2001 * Stochastic national planted acre yield

If (stochastic market receipts < average base receipts per acre) then the payment equals CCP = average base receipts - stochastic market receipts

Because the market receipts were both expressed on a per planted acre basis, the CCP would be paid to producers based on the number of acres they planted. The cost of the program was estimated using USDA's recent planting estimates for the 2001 crop year.

The Added AMTA scenarios assumed that the announced 2001 AMTA payment rate would be augmented by a fixed amount. Three alternative Added AMTA scenarios were analyzed for each crop. The added AMTA rates were:

- Rice – $2.25, $2.50, $2.75/cwt.
- Cotton – $0.067, $0.074, $0.081/lb.
- Corn – $0.295, $0.328, $0.361/bu.
- Wheat – $0.565, $0.628, and $0.69/bu.
- Soybean – $0.061, $0.067, and $0.074/bu.
- Sorghum – $0.248, $0.275, and $0.303/bu.

The Added AMTA payments were analyzed assuming that the payments were made based on the 1996 farm program formula for calculating AMTA payments.

A Base scenario was run for comparison purposes. Market receipts per planted acre equaled stochastic yield times price. The per unit loan deficiency payment (LDP) was calculated using the stochastic prices and estimated adjusted world prices, the 2001 loan rate and the stochastic yield. Base AMTA payments were calculated using the 1996 farm program formula for calculating this payment. The total receipts for the Base scenario were used along with the CCPs or Added AMTA payments to calculate a total receipts per yield unit for the crops. Based on the ratio of rice base acres to planted acres in 2001, it is assumed that every planted acre carries approximately 1.27 contract payment acres. Similar ratios were applied to the other crops.

While we acknowledge that there are crop contract acre payments that do not accrue to current operators, it was decided that the assumption would be preferable to assuming every planted acre has only one associated contract acre. In summary, the eight alternatives analyzed include:

- Base – projected market receipts, loan deficiency payments, and $2.10/bu. AMTA payments. No additional CCP payments are included.
- Avg 95-99 – Base revenue plus an additional CCP triggered when 2001 market receipts fall below the average market receipts on a planted acre basis for the 95-99 marketing year.
- Avg 94-98 – Base revenue plus an additional CCP triggered when 2001 market receipts fall below the average market receipts on a planted acre basis for the 94-98 marketing year.

- Olym Avg 95-99 – Same as Avg 95-99, except the high and low market year receipts are dropped and the remaining three years are averaged as the base.
- Olym Avg 94-98 – Same as Avg 94-98, except the high and low market year receipts are dropped and the remaining three years are averaged as the base.
- AMTA $2.25 – Assumes producers receive an additional $2.25 AMTA paid on planted acres.
- AMTA $2.50 – Assumed producers receive an additional $2.50 AMTA paid on planted acres.
- AMTA $2.75 – Assumed producers receive an additional $2.75 AMTA paid on planted acres.

Results of the simulation analysis were reported in a probabilistic format for each crop, using the following variables:

- CCPs or Added AMTA payments per yield unit (cwt,, lb., or bu.),
- Total receipts per yield unit as defined above, and
- Total government payments in 2001 for each crop.

In addition the scenarios were ranked for each crop using a risk ranking procedure assuming that farmers are averse to risk. The procedure also reported the marginal economic benefit of the preferred program option to the alternative scenarios.

Summary of Results for Payments per Yield Unit

- The CCP using the Olympic Average 95-99 and the CCP using the Olympic Average 94-98 were associated with the largest mean payment per cwt. for rice (Table 1). The olympic average process leaves the same three years to be averaged under both periods for rice. The CCP using the Olympic Average 94-98 was associated with the greatest mean payment per yield for cotton, corn, soybeans, and sorghum.

- An added AMTA of $0.69/bu. for wheat resulted in the largest average per bu. payment rate. Wheat producers would earn higher payments under an Added AMTA because of the practice of grazing out wheat has resulted in: planted acres exceeding harvested acres by 15%, harvested acre yield exceeding planted acre yield by 15%, and base acres exceeding planted acres for 2001 by 30%.

- The maximum per yield unit payment was observed for the CCP scenario using the Olympic Average 94-98 in all crops except wheat. The largest maximum payment was observed for wheat when the Simple Average 94-98 was used to define the base CCP trigger receipts.

- The probability that the CCPs would equal the minimum level are only 1% for rice (Table 1). For the other crops this probability ranged from a low of 3% for soybeans and sorghum to a high of 26% for cotton.

Table 1. Counter Cyclical Payments per Yield Unit for Alternative Base Periods or Added AMTA Payments, 100% Trigger

	Mean	Min	Max	P(x=Min)
Rice (Cwt.)		($/Yield Unit)		
Base	0.000	0.000	0.000	100%
Avg 95-99	2.289	0.397	5.205	1%
Avg 94-98	2.457	0.565	5.373	1%
Olym Avg 95-99	**2.613**	0.721	**5.529**	1%
Olym Avg 94-98	**2.613**	0.721	**5.529**	1%
AMTA 2.25	1.977	1.977	1.977	100%
AMTA 2.5	2.197	2.197	2.197	100%
AMTA 2.75	2.416	**2.416**	2.416	100%
Cotton (lb.)				
Base	0.000	0.000	0.000	100%
Avg 95-99	0.093	0.000	0.353	26%
Avg 94-98	0.168	0.000	0.443	10%
Olym Avg 95-99	0.111	0.000	0.376	20%
Olym Avg 94-98	**0.176**	0.000	**0.452**	8%
AMTA 0.067	0.061	0.061	0.061	100%
AMTA 0.074	0.068	0.068	0.068	100%
AMTA 0.081	0.074	**0.074**	0.074	100%
Corn (bu.)				
Base	0.000	0.000	0.000	100%
Avg 95-99	0.320	0.000	1.091	21%
Avg 94-98	0.413	0.000	1.201	12%
Olym Avg 95-99	0.318	0.000	1.088	21%
Olym Avg 94-98	**0.440**	0.000	**1.231**	12%
AMTA 0.295	0.228	0.228	0.228	100%
AMTA 0.328	0.253	0.253	0.253	100%
AMTA 0.361	0.278	**0.278**	0.278	100%
Wheat (bu.)				
Base	0.000	0.000	0.000	100%
Avg 95-99	0.499	0.000	1.495	13%
Avg 94-98	0.603	0.000	**1.611**	7%
Olym Avg 95-99	0.486	0.000	1.480	13%
Olym Avg 94-98	0.581	0.000	1.587	8%
AMTA 0.565	0.610	0.610	0.610	100%
AMTA 0.628	0.678	0.678	0.678	100%
AMTA 0.69	**0.746**	**0.746**	0.746	100%
Soybean (bu.)				
Base	0.000	0.000	0.000	100%
Avg 95-99	1.491	0.000	3.325	9%
Avg 94-98	1.754	0.000	3.608	4%
Olym Avg 95-99	1.506	0.000	3.342	9%
Olym Avg 94-98	**1.808**	0.000	**3.664**	3%
AMTA 0.061	0.093	0.093	0.093	100%
AMTA 0.067	0.104	0.104	0.104	100%
AMTA 0.074	0.114	**0.114**	0.114	100%
Sorghum (bu.)				
Base	0.000	0.000	0.000	100%
Avg 95-99	0.355	0.000	0.842	16%
Avg 94-98	0.476	0.000	0.978	8%
Olym Avg 95-99	0.384	0.000	0.876	13%
Olym Avg 94-98	**0.593**	0.000	**1.103**	3%
AMTA 0.248	0.297	0.297	0.297	100%
AMTA 0.275	0.330	0.330	0.330	100%
AMTA 0.303	0.363	**0.363**	0.363	100%

Added AMTA payments are calculated using current national farm program yield, national base acres, and a payment fraction of 0.85 per base acre. Added AMTA payments were divided by average national planted acre yields for 1996-2000 to put them on a comparable basis to the CCPs. Counter Cyclical Payments were calculated on a planted acre yield basis.

Summary of Total Receipts per Yield Unit

- Of the eight alternatives analyzed, rice would earn the largest average total receipts per cwt. from the two Olympic Average CCP programs (Table 2). National average total receipts per cwt. for rice was estimated at $13.25 under these two scenarios. Average receipts under the Added AMTA of $2.75/cwt. for rice was estimated at $13.05/cwt. Similar results were observed for cotton, corn, soybeans, and sorghum.

- The two higher levels of Added AMTAs provided a higher minimum for total receipts than any of the four CCPs for rice (Table 2). However, the Added AMTA options did not provide the opportunity to earn as high of maximum receipts per cwt. as the CCPs. For example the maximum receipts under the Olympic Average CCPs was $15.43/cwt. while the maximum for the highest Added AMTA option was $13.73/cwt.

- The probabilities that the different options would result in total receipts per yield unit less than a lower target level and greater than an upper target were calculated from the simulation results (Table 2). In the case of rice the lower and upper targets were $12 and $13/cwt., respectively. All seven of the policy options resulted in low probabilities (1% to 4%) that receipts would fall below $12/cwt. The two Olympic Average CCP options were associated with a 60% chance of receipts exceeding the $13/cwt. target. An added AMTA of $2.75/cwt. was associated with a 55% chance that receipts would exceed the upper target.

- The Base scenario of continuing the current farm bill had a significantly lower total receipts per cwt. for rice than any of the seven options. The Base scenario was associated with a 99% chance of receipts less than $12/cwt. and a 1% chance of receipts exceeding $13/cwt.

- In the case of cotton, the CCP Olympic Average 94-98 had the most favorable probability of exceeding a total receipt of $0.80/lb. and the lowest chance of seeing receipts fall below $0.70/lb. This CCP scenario was also the most favorable for corn, soybeans, and sorghum.

- Wheat experienced the most favorable total receipts per bushel under the Added AMTA with $0.69/bu. option.

Table 2. Total Receipts per Yield Unit in 2001 for Selected Crops Under Alternative Counter Cyclical and Added AMTA Programs, Assuming a 100% Trigger

	Mean	Min	Max	P(x=Min)	P(x<X)	P(x>Y)
Rice	$/Cwt				P(x<12)	P(x>13)
Base	10.64	9.84	11.31	1%	99%	1%
Avg 95-99	12.93	11.58	15.10	1%	4%	43%
Avg 94-98	13.10	11.75	15.27	1%	3%	53%
Olym Avg 95-99	**13.25**	11.91	**15.43**	1%	2%	60%
Olym Avg 94-98	**13.25**	11.91	**15.43**	1%	2%	60%
AMTA 2.25	12.62	11.82	13.29	1%	4%	15%
AMTA 2.5	12.83	12.04	13.51	1%	1%	35%
AMTA 2.75	13.05	**12.26**	13.73	1%	1%	55%
Cotton	$/lb.				P(x<0.75)	P(x>0.8)
Base	0.6347	0.4763	0.9596	1%	88%	6%
Avg 95-99	0.7282	0.6804	0.9596	29%	74%	9%
Avg 94-98	0.8027	0.7702	0.9838	44%	1%	41%
Olym Avg 95-99	0.7459	0.7034	0.9596	34%	62%	11%
Olym Avg 94-98	**0.8109**	**0.7792**	0.9928	46%	1%	44%
AMTA 0.067	0.6957	0.5372	1.0205	1%	77%	14%
AMTA 0.074	0.7024	0.5440	1.0273	1%	74%	15%
AMTA 0.081	0.7092	0.5507	**1.0340**	1%	71%	16%
Corn	$/bu				P(x<2.5)	P(x>3)
Base	2.39	1.76	3.08	1%	76%	3%
Avg 95-99	2.71	2.52	3.44	1%	1%	12%
Avg 94-98	2.80	2.63	3.55	37%	1%	22%
Olym Avg 95-99	2.71	2.52	3.43	28%	1%	12%
Olym Avg 94-98	**2.83**	**2.66**	**3.58**	1%	1%	23%
AMTA 0.295	2.62	1.99	3.31	1%	30%	9%
AMTA 0.328	2.64	2.01	3.33	1%	23%	9%
AMTA 0.361	2.67	2.04	3.36	1%	15%	9%
Wheat	$/bu				P(x<3.75)	P(x>4.25)
Base	3.50	3.02	4.13	1%	84%	1%
Avg 95-99	4.00	3.85	4.77	45%	1%	10%
Avg 94-98	4.10	**3.96**	**4.89**	27%	1%	16%
Olym Avg 95-99	3.98	3.83	4.76	45%	1%	10%
Olym Avg 94-98	4.08	3.94	4.86	50%	1%	15%
AMTA 0.565	4.11	3.63	4.74	1%	8%	24%
AMTA 0.628	4.18	3.69	4.81	1%	5%	31%
AMTA 0.69	**4.24**	3.76	4.88	1%	1%	45%
Soybean	$/bu				P(x<5.5)	P(x>6)
Base	5.55	4.50	7.05	1%	40%	14%
Avg 95-99	7.04	5.96	9.54	8%	1%	91%
Avg 94-98	7.30	6.25	9.83	13%	1%	99%
Olym Avg 95-99	7.06	5.98	9.56	8%	1%	91%
Olym Avg 94-98	**7.36**	**6.30**	**9.88**	14%	1%	99%
AMTA 0.061	5.64	4.59	7.14	1%	34%	15%
AMTA 0.067	5.65	4.60	7.15	1%	34%	15%
AMTA 0.074	5.66	4.61	7.16	1%	33%	15%
Sorghum	$/bu				P(x<2.4)	P(x>2.85)
Base	2.34	1.92	3.43	1%	65%	3%
Avg 95-99	2.70	2.53	3.43	3%	1%	25%
Avg 94-98	2.82	2.66	3.43	3%	1%	33%
Olym Avg 95-99	2.73	2.56	3.43	3%	1%	27%
Olym Avg 94-98	**2.94**	**2.79**	3.43	58%	1%	40%
AMTA 0.248	2.64	2.22	3.73	1%	18%	13%
AMTA 0.275	2.67	2.25	3.76	1%	11%	16%
AMTA 0.303	2.71	2.29	**3.80**	1%	10%	19%

Total receipts includes: market receipts, LDPs, base AMTA for 2001 plus CCPs or Added AMTA.

Summary of Policy Option Rankings in a Risk Context

- Stochastic dominance was used to rank the policy options for each of the crops based on the combination of simulated total receipts per yield unit and their risk dispersion. The rankings assumed that farm operators are risk averse.

- For rice farms there was a tie between the two CCP Olympic Average options (Table 3). The least preferred option for rice was the Base scenario, as expected. The marginal benefits per yield unit of the preferred option to the less preferred option was calculated. The preferred scenarios were worth $2.601/cwt. more than the Base scenario. An Added AMTA of $2.75/cwt. was worth $0.185/cwt. less than the preferred options.

- For cotton farms the preferred scenario was the CCP Olympic Average 94-98 which was worth $0.1765/lb. more than the Base scenario (Table 3). The highest Added AMTA of $0.081/lb. was ranked fifth and was worth $0.1021/lb. less than the preferred scenario.

- Wheat is the only crop that preferred an Added AMTA to any of the farm CCP programs. The highest Added AMTA was worth $0.142/bu. more than the highest ranked CCP program for wheat.

Table 3. Rankings of Alternative Counter Cyclical and Added AMTA Options Relative to the Base and Dollars per Yield Unit Required to Equate Alternative to the Preferred Option, 100% Trigger

	Value of an Option Relative to the Preferred Option
Rice ($/cwt.)	
Rice Olym Avg 95-99	Preferred Option
Rice Olym Avg 94-98	0.000
Rice Avg 94-98	0.156
Rice AMTA 2.75	0.185
Rice Avg 95-99	0.324
Rice AMTA 2.5	0.405
Rice AMTA 2.25	0.624
Rice Base	2.601
Cotton (cents/lb.)	
Cott Olym Avg 94-98	Preferred Option
Cott Avg 94-98	0.8208
Cott Olym Avg 95-99	6.4995
Cott Avg 95-99	8.2741
Cott AMTA 0.081	10.2082
Cott AMTA 0.074	10.8850
Cott AMTA 0.067	11.5618
Cott Base	17.6529
Corn ($/bu.)	
Corn Olym Avg 94-98	Preferred Option
Corn Avg 94-98	0.027
Corn Avg 95-99	0.120
Corn Olym Avg 95-99	0.122
Corn AMTA 0.361	0.162
Corn AMTA 0.328	0.187
Corn AMTA 0.295	0.213
Corn Base	0.440
Wheat ($/bu.)	
Wht AMTA 0.69	Preferred Option
Wht AMTA 0.628	0.068
Wht AMTA 0.565	0.136
Wht Avg 94-98	0.142
Wht Olym Avg 94-98	0.164
Wht Avg 95-99	0.246
Wht Olym Avg 95-99	0.259
Wht Base	0.746
Soybean ($/bu.)	
Soy Olym Avg 94-98	Preferred Option
Soy Avg 94-98	0.054
Soy Olym Avg 95-99	0.300
Soy Avg 95-99	0.316
Soy AMTA 0.074	1.675
Soy AMTA 0.067	1.685
Soy AMTA 0.061	1.696
Soy Base	1.789
Sorghum ($/bu.)	
GS Olym Avg 94-98	Preferred Option
GS Avg 94-98	0.117
GS Olym Avg 95-99	0.210
GS AMTA 0.303	0.231
GS Avg 95-99	0.238
GS AMTA 0.275	0.264
GS AMTA 0.248	0.297
GS Base	0.594

For example, the Olympic Average 95-99 benefits rice producers by $0.624/cwt more than the Added Added AMTA 2.25 and $2.601/cwt more than the Base of no CCP or Added AMTA.

Summary of Total Government Program Costs by Crop for 2001

- Based on the simulation results total government costs for LDPs, Base AMTA payments, and either CCPs or Added AMTAs were calculated (Table 4).

- Under the Base scenario the average government cost for rice was calculated at $0.8 billion for 2001 and this value could range from a minimum of $0.55 billion to a maximum of $1.2 billion.

- For the CCP Olympic Average 95-99 or 94-98, the average government cost was estimated at $1.3 billion and the minimum and maximums were estimated to be $0.72 and $2.23 billion, respectively. The CCP paid large amounts when receipts fall significantly below the base trigger level.

- The highest Added AMTA option for rice ($2.75/cwt.) was associated with a mean government cost of $1.27 billion. The minimum government cost for this option was $1.02 billion, and its maximum was $1.66 billion.

- For all crops except wheat the Added AMTA options were associated with the highest minimum government cost but the lowest maximum costs when excluding the Base scenario.

Table 4. Total Government Costs for Base AMTA, LDP, and Counter Cyclical Payments or Added AMTA in 2001, Assuming 100% Trigger

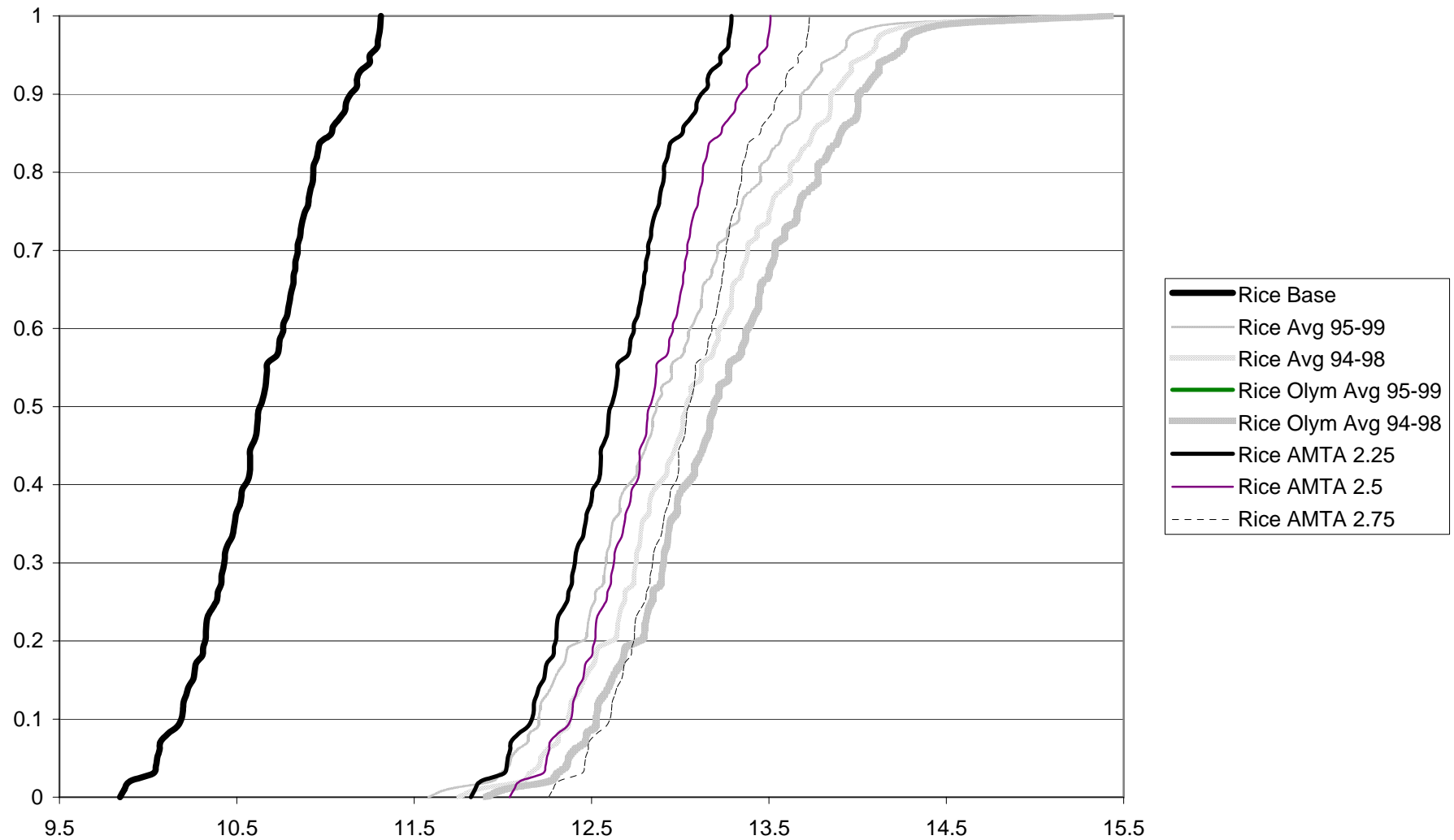|	Mean	Min	Max	P(x=Min)
	(Billions $)			
Rice				
Base	0.80	0.55	1.20	1%
Avg 95-99	1.24	0.66	2.17	1%
Avg 94-98	1.27	0.69	2.20	1%
Olym Avg 95-99	**1.30**	0.72	**2.23**	1%
Olym Avg 94-98	**1.30**	0.72	**2.23**	1%
AMTA 2.25	1.18	0.94	1.58	1%
AMTA 2.5	1.23	0.98	1.62	1%
AMTA 2.75	1.27	**1.02**	1.66	1%
Cotton				
Base	0.68	0.45	2.30	54%
Avg 95-99	1.48	0.45	5.32	25%
Avg 94-98	2.13	0.45	6.10	10%
Olym Avg 95-99	1.64	0.45	5.52	20%
Olym Avg 94-98	**2.20**	0.45	**6.18**	8%
AMTA 0.067	1.20	0.98	2.82	54%
AMTA 0.074	1.26	1.03	2.88	54%
AMTA 0.081	1.32	**1.09**	2.94	54%
Corn				
Base	3.26	1.92	10.36	49%
Avg 95-99	6.21	1.92	19.37	21%
Avg 94-98	7.06	1.92	20.38	12%
Olym Avg 95-99	6.19	1.92	19.35	21%
Olym Avg 94-98	**7.31**	1.92	**20.67**	12%
AMTA 0.295	5.36	4.02	12.46	49%
AMTA 0.328	5.59	4.25	12.69	49%
AMTA 0.361	5.82	**4.49**	12.93	49%
Wheat				
Base	1.36	1.08	3.05	58%
Avg 95-99	2.42	1.08	6.23	13%
Avg 94-98	2.65	1.08	**6.48**	7%
Olym Avg 95-99	2.40	1.08	6.20	13%
Olym Avg 94-98	2.60	1.08	6.43	8%
AMTA 0.565	2.66	2.38	4.35	58%
AMTA 0.628	2.80	2.53	4.49	58%
AMTA 0.69	**2.95**	**2.67**	4.64	58%
Soybean				
Base	3.00	0.00	10.25	17%
Avg 95-99	7.27	0.00	19.77	9%
Avg 94-98	8.02	0.00	20.58	4%
Olym Avg 95-99	7.31	0.00	19.82	9%
Olym Avg 94-98	**8.17**	0.00	**20.74**	3%
AMTA 0.061	3.27	0.27	10.52	17%
AMTA 0.067	3.29	0.30	10.55	17%
AMTA 0.074	3.32	**0.33**	10.58	17%
Sorghum				
Base	0.29	0.21	0.55	61%
Avg 95-99	0.48	0.21	0.95	16%
Avg 94-98	0.55	0.21	1.02	8%
Olym Avg 95-99	0.50	0.21	0.97	13%
Olym Avg 94-98	**0.61**	0.21	**1.09**	3%
AMTA 0.248	0.45	0.37	0.72	61%
AMTA 0.275	0.47	0.39	0.73	61%
AMTA 0.303	0.49	**0.41**	0.75	61%

Summary of Graphs for the Simulation Results

- Cumulative distributions for the simulated payments under the eight options were summarized in Figure 1 for rice. The Added AMTA payment rates were depicted as vertical lines because they would provide a constant payment at a given level, regardless of price and yield. The Base scenario was shown with a zero payment in all situations. The CCP options resulted in payments ranging from a low of about $0.50/cwt. to more than $5.50/cwt. The probability that a CCP option would provide a payment greater than an Added AMTA option could be read from the figure. For example, the Olympic Average 95-99 option has about a 60% chance of paying larger payments per yield unit than the highest Added AMTA option, 70% chance of higher payments than the middle Added AMTA, and 75% chance of higher payments than the lowest Added AMTA.

- The cumulative distributions of total receipts per yield unit for rice under the alternative options were summarized in Figure 2. The CCP Olympic Average 95-99 and 94-98 option provided higher total receipts than the highest Added AMTA about 80% of the time and more than 95% of the time for the other two Added AMTA options.

- Cumulative distributions of government program costs for rice were presented in Figure 3. The Added AMTA options had the same shaped government payment distribution under risk as the Base scenario which had only the LDP as its risky component. The CCP government cost distributions showed that these options would result in lower government costs than the Added AMTAs 25 to 40% of the time. The CCP options resulted in substantially larger government costs about 5% of the time.

- Cumulative distributions of total receipts per yield unit were reported for cotton, corn, wheat, soybeans, and sorghum in Figures 4-8. Like rice, the receipt's distributions for the other crops under the Added AMTA options maintained the same shape as the receipt's distributions under the Base scenario, but with an increase for the higher constant AMTA payments. The CCP options, however, were more effective at cutting off the downside risk for the other crops. For example, the most preferred CCP option for cotton (Olympic Average 94-98) cuts the chance of receipts falling below $0.78/lb. to almost zero, whereas the Base scenario offered a 90% chance of receipts falling below this level and the highest Added AMTA had an 80% chance of lower receipts (Figure 4). In the case of corn, the CCP options were effective at cutting off a significant amount of downside risk observed for the Base scenario and even for the Added AMTA options (Figure 5).

Figure 1. Cumulative Distributions of Counter Cyclical or Added AMTA Payments per Cwt of Rice in 2001, Assuming 100% Trigger
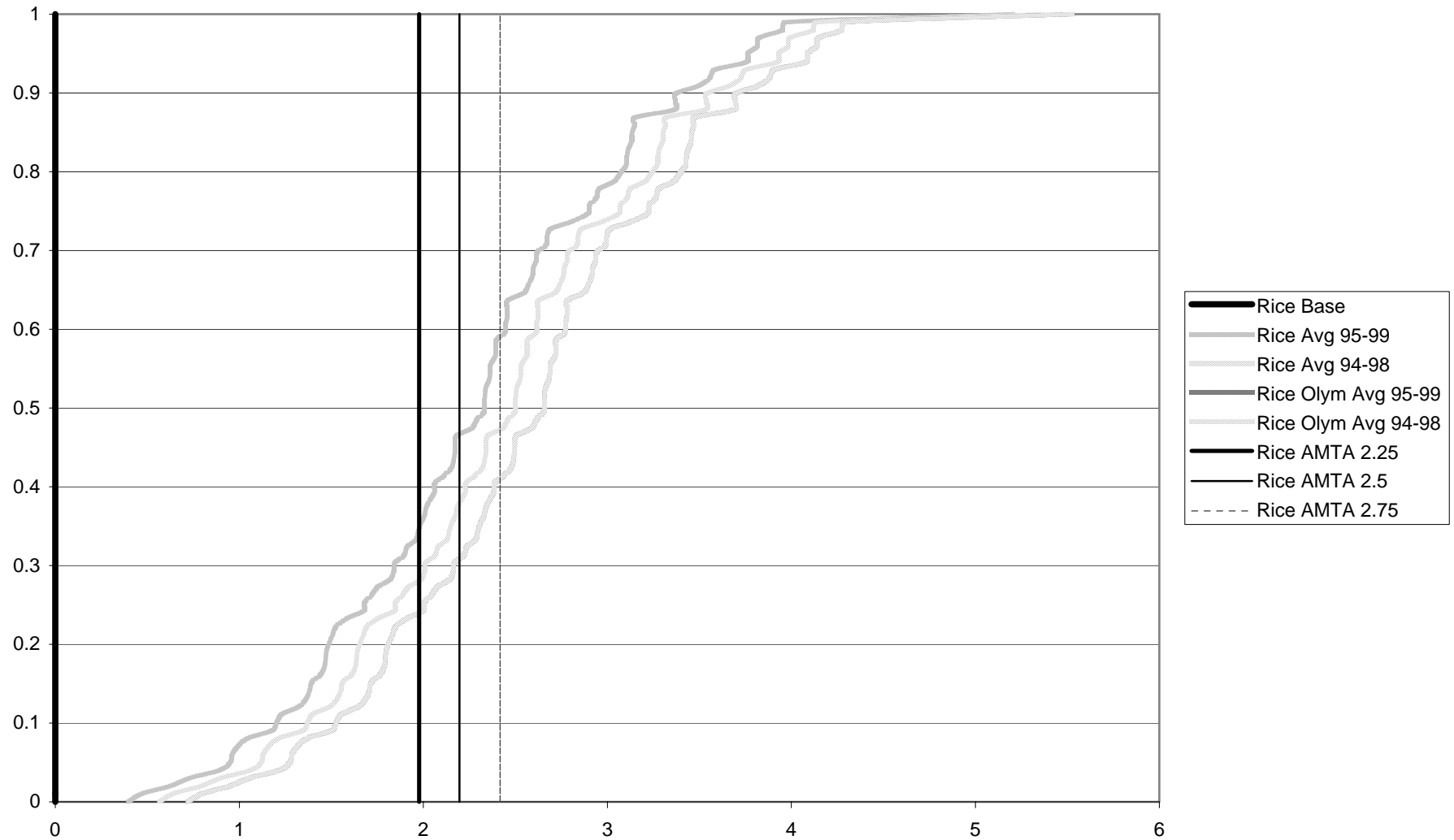
Figure 2. Cumulative Distributions of Total Receipts in 2001 for Rice, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/cwt)

Legend:
- Rice Base
- Rice Avg 95-99
- Rice Avg 94-98
- Rice Olym Avg 95-99
- Rice Olym Avg 94-98
- Rice AMTA 2.25
- Rice AMTA 2.5
- Rice AMTA 2.75

Figure 3. Cumulative Distributions of Total Government Costs for Rice in 2001 Under Alternative Counter Cyclical or Added AMTA Payments, Assuming 100% Trigger (Billions $)

Figure 4. Cumulative Distributions of Total Receipts in 2001 for Cotton, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/lb.)

Legend:
- Cott Base
- Cott Avg 95-99
- Cott Avg 94-98
- Cott Olym Avg 95-99
- Cott Olym Avg 94-98
- Cott AMTA 0.067
- Cott AMTA 0.074
- Cott AMTA 0.081

Figure 5. Cumulative Distributions of Total Receipts in 2001 for Corn, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/bu.)

Legend:
- Corn Base
- Corn Avg 95-99
- Corn Avg 94-98
- Corn Olym Avg 95-99
- Corn Olym Avg 94-98
- Corn AMTA 0.295
- Corn AMTA 0.328
- Corn AMTA 0.361

Figure 6. Cumulative Distributions of Total Receipts in 2001 for Wheat, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/bu.)

Legend:
- Wht Base
- Wht Avg 95-99
- Wht Avg 94-98
- Wht Olym Avg 95-99
- Wht Olym Avg 94-98
- Wht AMTA 0.565
- Wht AMTA 0.628
- Wht AMTA 0.69

Figure 7. Cumulative Distributions of Total Receipts in 2001 for Soybeans, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/bu.)

Legend:
- Soy Base
- Soy Avg 95-99
- Soy Avg 94-98
- Soy Olym Avg 95-99
- Soy Olym Avg 94-98
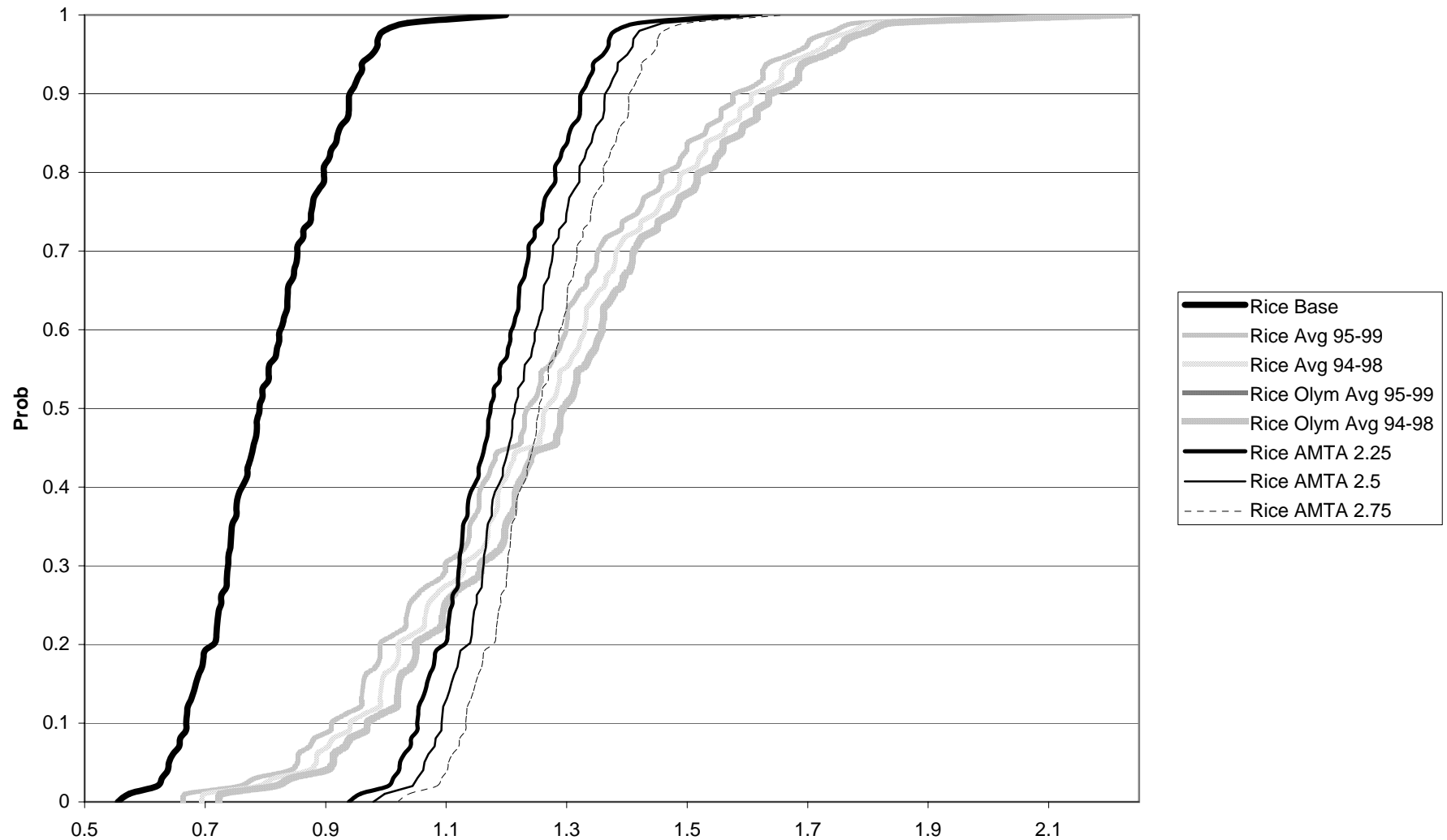- Soy AMTA 0.061
- Soy AMTA 0.067
- Soy AMTA 0.074

Figure 8. Cumulative Distributions of Total Receipts in 2001 for Sorghum, Assuming Alternative Base Periods for Counter Cyclical Program with 100% Trigger or Added AMTA Payments ($/bu.)
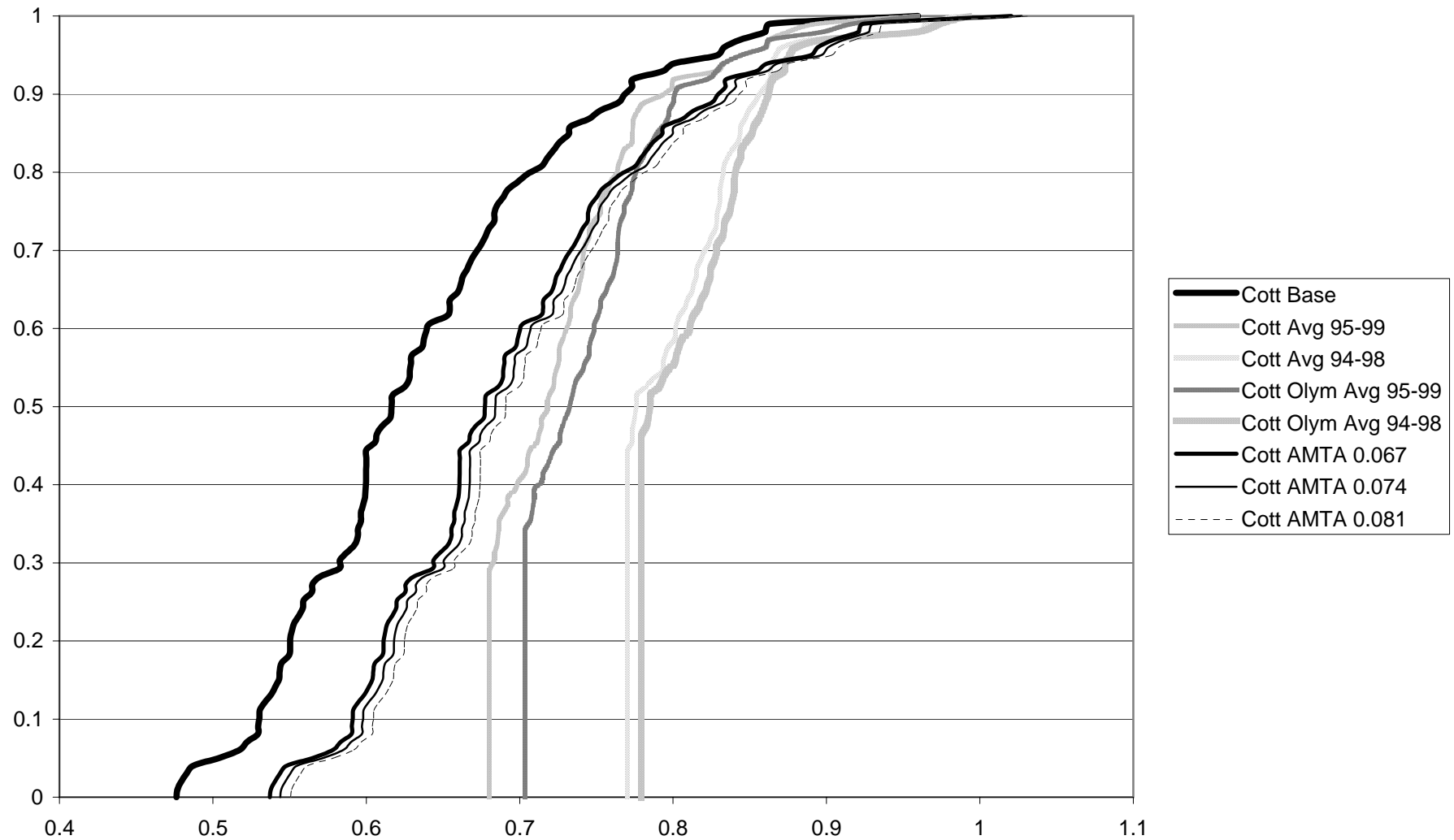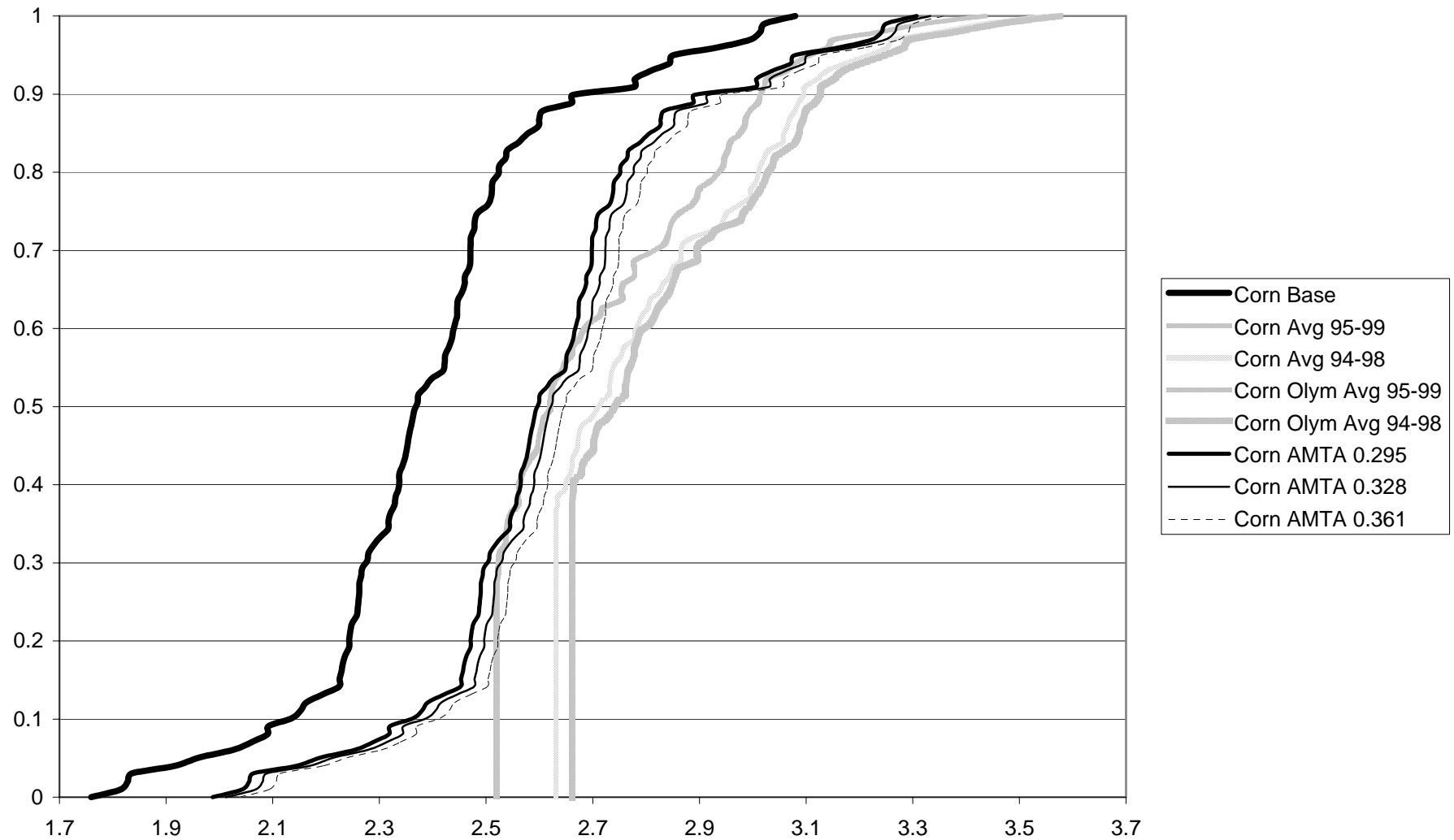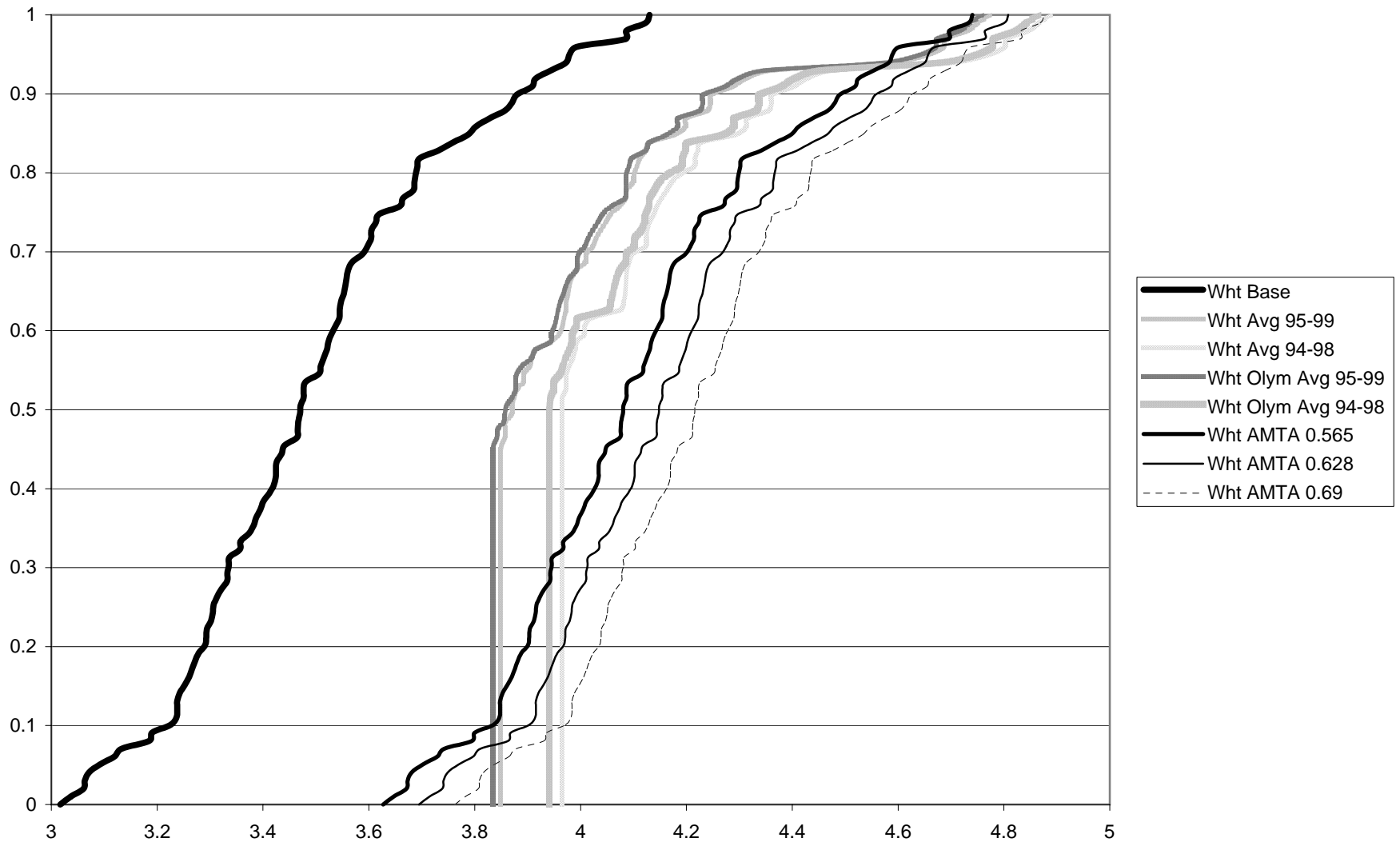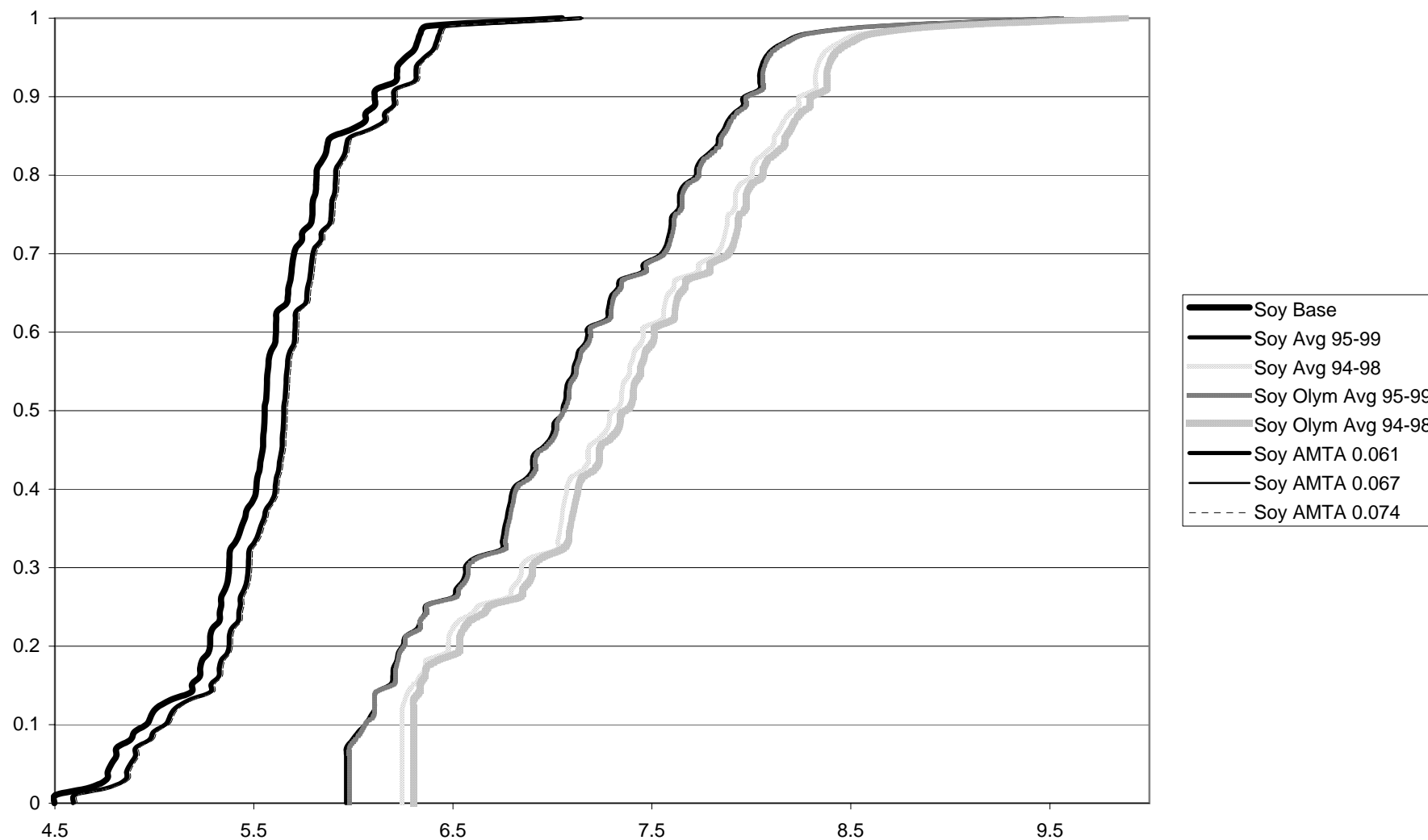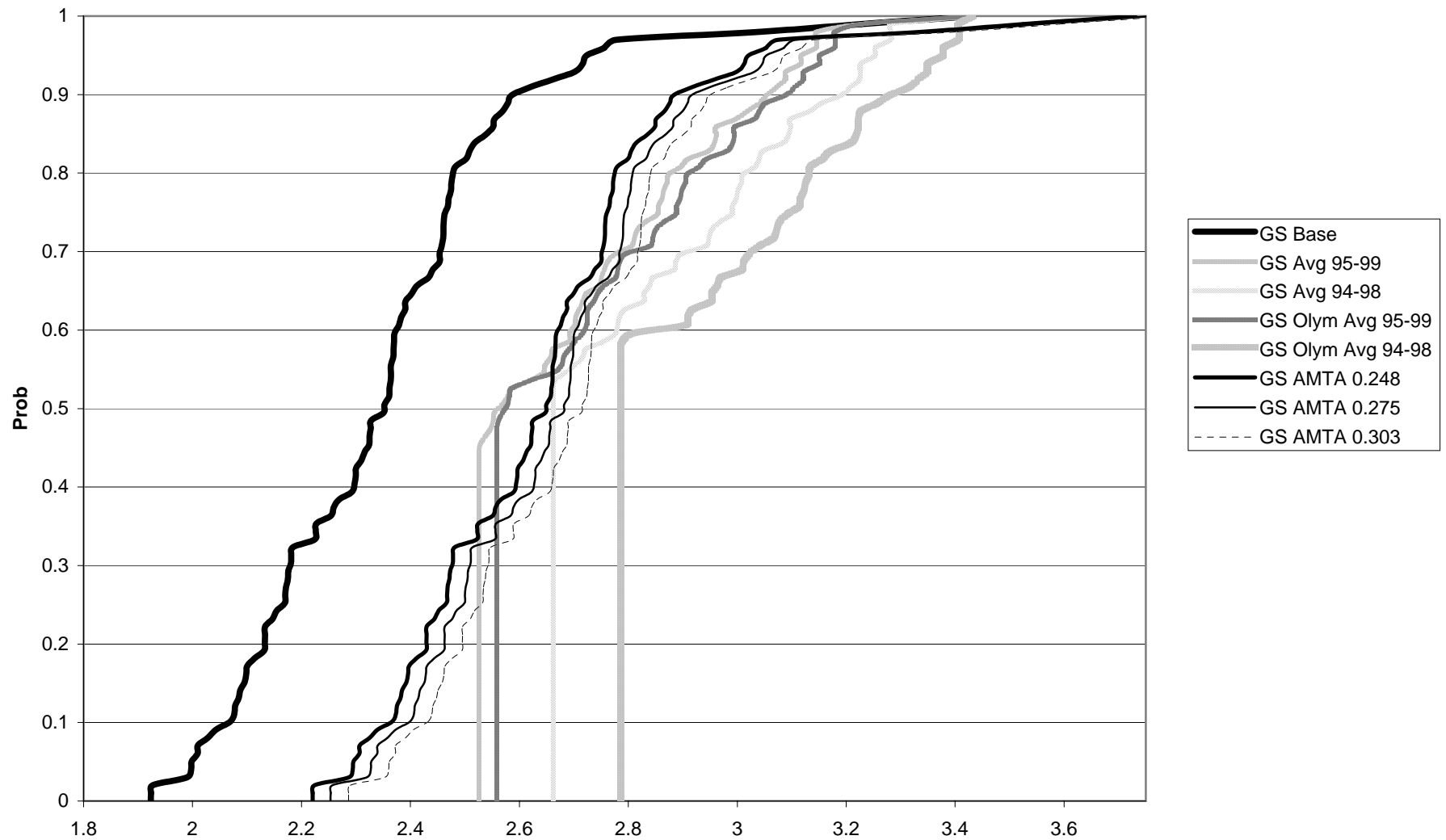
Summary of Sensitivity Analysis of the Trigger Fraction

- Thus far in the analysis the CCP Trigger was assumed to equal 100% of the base periods average receipts. To estimate the effects of the trigger being set at a lower level, the analysis was repeated using trigger fractions of 90% and 95%. Results for the trigger fraction sensitivity were summarized in Tables 5-8.

- In the case of rice, if the CCP program triggered payments were based on a 90% or even a 95% fraction of base receipts, the preferences among the options changed dramatically. In both cases the Added AMTA options were preferred over the CCP options and the marginal value of the Added AMTAs was as much as $0.25 to $0.699/cwt. more than the highest ranked CCP (Table 7). The CCP payment rates associated with lower trigger fractions fell about $0.80/cwt. for the 90% fraction and about $0.43/cwt. for the 95% fraction (Table 5).

- Government program cost savings was relatively small for rice as a result of using a lower CCP trigger fraction (Table 8). For example, the costs savings averaged $160 million at the 90% trigger fraction and $80 million at the 95% trigger. For the other crops the cost savings was considerably larger, amounting to about $1.7 billion for corn and $1.5 billion for soybeans if the 90% trigger were used.

Table 5. Comparison of Counter Cyclical Payments per Yield Unit for Alternative Base Periods or Added AMTA Payments Across 100%, 90%, and 95% Trigger Levels

	Counter Cyclical and Added AMTA Payments/Yield Unit			Difference from 100% Trigger to	
	100% Trigger	90% Trigger	95% Trigger	90% Trigger	95% Trigger
Rice (Cwt.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	2.2887	1.4457	1.8615	0.8431	0.4272
Avg 94-98	2.4570	1.5914	2.0211	0.8656	0.4359
Olym Avg 95-99	**2.6127**	1.7280	2.1691	0.8848	0.4437
Olym Avg 94-98	**2.6127**	1.7280	2.1691	0.8848	0.4437
AMTA 2.25	1.9769	1.9769	1.9769	0.0000	0.0000
AMTA 2.5	2.1966	2.1966	2.1966	0.0000	0.0000
AMTA 2.75	2.4163	**2.4163**	**2.4163**	0.0000	0.0000
Cotton (lb.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	0.0935	0.0527	0.0718	0.0408	0.0217
Avg 94-98	0.1680	0.1073	0.1366	0.0607	0.0314
Olym Avg 95-99	0.1112	0.0650	0.0865	0.0462	0.0247
Olym Avg 94-98	**0.1762**	**0.1137**	**0.1439**	0.0625	0.0323
AMTA 0.067	0.0609	0.0609	0.0609	0.0000	0.0000
AMTA 0.074	0.0677	0.0677	0.0677	0.0000	0.0000
AMTA 0.081	0.0744	0.0744	0.0744	0.0000	0.0000
Corn (bu.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	0.3199	0.1676	0.2357	0.1523	0.0842
Avg 94-98	0.4127	0.2245	0.3110	0.1882	0.1018
Olym Avg 95-99	0.3176	0.1662	0.2338	0.1514	0.0838
Olym Avg 94-98	**0.4396**	0.2428	**0.3341**	0.1968	0.1054
AMTA 0.295	0.2277	0.2277	0.2277	0.0000	0.0000
AMTA 0.328	0.2530	0.2530	0.2530	0.0000	0.0000
AMTA 0.361	0.2783	**0.2783**	0.2783	0.0000	0.0000
Wheat (bu.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	0.4988	0.2358	0.3587	0.2629	0.1401
Avg 94-98	0.6032	0.3095	0.4492	0.2937	0.1540
Olym Avg 95-99	0.4858	0.2271	0.3475	0.2587	0.1383
Olym Avg 94-98	0.5811	0.2934	0.4302	0.2876	0.1509
AMTA 0.565	0.6101	0.6101	0.6101	0.0000	0.0000
AMTA 0.628	0.6778	0.6778	0.6778	0.0000	0.0000
AMTA 0.69	**0.7456**	**0.7456**	**0.7456**	0.0000	0.0000
Soybean (bu.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	1.4908	0.9752	1.2261	0.5156	0.2646
Avg 94-98	1.7537	1.1881	1.4634	0.5656	0.2903
Olym Avg 95-99	1.5059	0.9875	1.2397	0.5184	0.2662
Olym Avg 94-98	**1.8080**	**1.2316**	**1.5119**	0.5764	0.2961
AMTA 0.061	0.0933	0.0933	0.0933	0.0000	0.0000
AMTA 0.067	0.1037	0.1037	0.1037	0.0000	0.0000
AMTA 0.074	0.1140	0.1140	0.1140	0.0000	0.0000
Sorghum (bu.)					
Base	0.0000	0.0000	0.0000	0.0000	0.0000
Avg 95-99	0.3551	0.1949	0.2704	0.1602	0.0847
Avg 94-98	0.4759	0.2822	0.3741	0.1937	0.1018
Olym Avg 95-99	0.3836	0.2149	0.2946	0.1686	0.0890
Olym Avg 94-98	**0.5929**	**0.3725**	**0.4800**	0.2204	0.1130
AMTA 0.248	0.2969	0.2969	0.2969	0.0000	0.0000
AMTA 0.275	0.3299	0.3299	0.3299	0.0000	0.0000
AMTA 0.303	0.3628	0.3628	0.3628	0.0000	0.0000

Added AMTA payments are calculated using current national farm program yield, national base acres, and a payment fraction of 0.85 per base acre. Added AMTA payments were divided by average national planted acre yields for 1996-2000 to put them on a comparable basis to the CCPs. Counter Cyclical Payments were calculated on a planted acre yield basis.

Table 6. Comparison of Average Total Receipts per Yield Unit in 2001 for Selected Crops Under Alternative Counter Cyclical and Added AMTA Programs, Across the 100%, 90%, and 95% Trigger Levels

	Total Receipts per Yield Unit for Three Trigger Levels			Difference from 100% Trigger to	
	100% Trigger	90% Trigger	95% Trigger	90% Trigger	95% Trigger
Rice		$/Cwt.			
Base	10.638	10.638	10.638	0.000	0.000
Avg 95-99	12.927	12.084	12.500	0.843	0.427
Avg 94-98	13.095	12.230	12.659	0.866	0.436
Olym Avg 95-99	**13.251**	12.366	12.807	0.885	0.444
Olym Avg 94-98	**13.251**	12.366	12.807	0.885	0.444
AMTA 2.25	12.615	12.615	12.615	0.000	0.000
AMTA 2.5	12.835	12.835	12.835	0.000	0.000
AMTA 2.75	13.054	**13.054**	**13.054**	0.000	0.000
Cotton		$/Lb.			
Base	0.6347	0.6347	0.6347	0.0000	0.0000
Avg 95-99	0.7282	0.6875	0.7066	0.0408	0.0217
Avg 94-98	0.8027	0.7420	0.7713	0.0607	0.0314
Olym Avg 95-99	0.7459	0.6997	0.7212	0.0462	0.0247
Olym Avg 94-98	**0.8109**	**0.7485**	**0.7787**	0.0625	0.0323
AMTA 0.067	0.6957	0.6957	0.6957	0.0000	0.0000
AMTA 0.074	0.7024	0.7024	0.7024	0.0000	0.0000
AMTA 0.081	0.7092	0.7092	0.7092	0.0000	0.0000
Corn		$/Bu.			
Base	2.392	2.392	2.392	0.000	0.000
Avg 95-99	2.712	2.559	2.627	0.152	0.084
Avg 94-98	2.804	2.616	2.703	0.188	0.102
Olym Avg 95-99	2.709	2.558	2.626	0.151	0.084
Olym Avg 94-98	**2.831**	2.635	**2.726**	0.197	0.105
AMTA 0.295	2.620	2.620	2.620	0.000	0.000
AMTA 0.328	2.645	2.645	2.645	0.000	0.000
AMTA 0.361	2.670	**2.670**	2.670	0.000	0.000
Wheat		$/Bu.			
Base	3.498	3.498	3.498	0.000	0.000
Avg 95-99	3.996	3.733	3.856	0.263	0.140
Avg 94-98	4.101	3.807	3.947	0.294	0.154
Olym Avg 95-99	3.983	3.725	3.845	0.259	0.138
Olym Avg 94-98	4.079	3.791	3.928	0.288	0.151
AMTA 0.565	4.108	4.108	4.108	0.000	0.000
AMTA 0.628	4.175	4.175	4.175	0.000	0.000
AMTA 0.69	**4.243**	**4.243**	**4.243**	0.000	0.000
Soybean		$/Bu.			
Base	5.549	5.549	5.549	0.000	0.000
Avg 95-99	7.040	6.525	6.775	0.516	0.265
Avg 94-98	7.303	6.737	7.013	0.566	0.290
Olym Avg 95-99	7.055	6.537	6.789	0.518	0.266
Olym Avg 94-98	**7.357**	**6.781**	**7.061**	0.576	0.296
AMTA 0.061	5.643	5.643	5.643	0.000	0.000
AMTA 0.067	5.653	5.653	5.653	0.000	0.000
AMTA 0.074	5.663	5.663	5.663	0.000	0.000
Sorghum		$/Bu.			
Base	2.343	2.343	2.343	0.000	0.000
Avg 95-99	2.698	2.538	2.614	0.160	0.085
Avg 94-98	2.819	2.625	2.717	0.194	0.102
Olym Avg 95-99	2.727	2.558	2.638	0.169	0.089
Olym Avg 94-98	**2.936**	**2.716**	**2.823**	0.220	0.113
AMTA 0.248	2.640	2.640	2.640	0.000	0.000
AMTA 0.275	2.673	2.673	2.673	0.000	0.000
AMTA 0.303	2.706	2.706	2.706	0.000	0.000

Total receipts includes: market receipts, LDPs, base AMTA for 2001 plus CCPs or Added AMTA.

Table 7. Comparison of Rankings of Alternative Counter Cyclical and Added AMTA Options Relative to the Base and Dollars per Yield Unit Required to Equate Alternative to the Preferred Option, Across 100%, 90%, and 95% Trigger Levels

Preferred Rankings of Options and Their Value Relative to Lesser Options for Alternative Trigger Levels					
100% Trigger		90% Trigger		95% Trigger	
Rice ($/cwt.)					
Rice Olym Avg 95-99	Preferred Option	Rice AMTA 2.75	Preferred Option	Rice AMTA 2.75	Preferred Option
Rice Olym Avg 94-98	0.000	Rice AMTA 2.5	0.000	Rice AMTA 2.5	0.000
Rice Avg 94-98	0.156	Rice AMTA 2.25	0.439	Rice Olym Avg 95-99	0.259
Rice AMTA 2.75	0.185	Rice Olym Avg 95-99	0.699	Rice Olym Avg 94-98	0.259
Rice Avg 95-99	0.324	Rice Olym Avg 94-98	0.699	Rice Avg 94-98	0.407
Rice AMTA 2.5	0.405	Rice Avg 94-98	0.836	Rice AMTA 2.25	0.439
Rice AMTA 2.25	0.624	Rice Avg 95-99	0.981	Rice Avg 95-99	0.566
Rice Base	2.601	Rice Base	2.416	Rice Base	2.416
Cotton (cents/lb.)					
Cott Olym Avg 94-98	Preferred Option	Cott Olym Avg 94-98	Preferred Option	Cott Olym Avg 94-98	Preferred Option
Cott Avg 94-98	0.821	Cott Avg 94-98	0.645	Cott Avg 94-98	0.735
Cott Olym Avg 95-99	6.500	Cott AMTA 0.081	3.959	Cott Olym Avg 95-99	5.748
Cott Avg 95-99	8.274	Cott AMTA 0.074	4.636	Cott AMTA 0.081	6.982
Cott AMTA 0.081	10.208	Cott Olym Avg 95-99	4.878	Cott Avg 95-99	7.217
Cott AMTA 0.074	10.885	Cott AMTA 0.067	5.313	Cott AMTA 0.074	7.659
Cott AMTA 0.067	11.562	Cott Avg 95-99	6.108	Cott AMTA 0.067	8.335
Cott Base	17.653	Cott Base	11.404	Cott Base	14.426
Corn ($/bu.)					
Corn Olym Avg 94-98	Preferred Option	Corn AMTA 0.361	Preferred Option	Corn Olym Avg 94-98	Preferred Option
Corn Avg 94-98	0.027	Corn AMTA 0.328	0.025	Corn Avg 94-98	0.023
Corn Avg 95-99	0.120	Corn Olym Avg 94-98	0.035	Corn AMTA 0.361	0.057
Corn Olym Avg 95-99	0.122	Corn AMTA 0.295	0.051	Corn AMTA 0.328	0.082
Corn AMTA 0.361	0.162	Corn Avg 94-98	0.053	Corn Avg 95-99	0.099
Corn AMTA 0.328	0.187	Corn Avg 95-99	0.110	Corn Olym Avg 95-99	0.100
Corn AMTA 0.295	0.213	Corn Olym Avg 95-99	0.111	Corn AMTA 0.295	0.107
Corn Base	0.440	Corn Base	0.278	Corn Base	0.335
Wheat ($/bu.)					
Wht AMTA 0.69	Preferred Option	Wht AMTA 0.69	Preferred Option	Wht AMTA 0.69	Preferred Option
Wht AMTA 0.628	0.068	Wht AMTA 0.628	0.068	Wht AMTA 0.628	0.068
Wht AMTA 0.565	0.136	Wht AMTA 0.565	0.136	Wht AMTA 0.565	0.136
Wht Avg 94-98	0.142	Wht Avg 94-98	0.436	Wht Avg 94-98	0.296
Wht Olym Avg 94-98	0.164	Wht Olym Avg 94-98	0.452	Wht Olym Avg 94-98	0.315
Wht Avg 95-99	0.246	Wht Avg 95-99	0.509	Wht Avg 95-99	0.386
Wht Olym Avg 95-99	0.259	Wht Olym Avg 95-99	0.518	Wht Olym Avg 95-99	0.398
Wht Base	0.746	Wht Base	0.746	Wht Base	0.746
Soybean ($/bu.)					
Soy Olym Avg 94-98	Preferred Option	Soy Olym Avg 94-98	Preferred Option	Soy Olym Avg 94-98	Preferred Option
Soy Avg 94-98	0.054	Soy Avg 94-98	0.043	Soy Avg 94-98	0.048
Soy Olym Avg 95-99	0.300	Soy Olym Avg 95-99	0.241	Soy Olym Avg 95-99	0.270
Soy Avg 95-99	0.316	Soy Avg 95-99	0.254	Soy Avg 95-99	0.283
Soy AMTA 0.074	1.675	Soy AMTA 0.074	1.103	Soy AMTA 0.074	1.380
Soy AMTA 0.067	1.685	Soy AMTA 0.067	1.113	Soy AMTA 0.067	1.391
Soy AMTA 0.061	1.696	Soy AMTA 0.061	1.123	Soy AMTA 0.061	1.401
Soy Base	1.789	Soy Base	1.217	Soy Base	1.495
Sorghum ($/bu.)					
GS Olym Avg 94-98	Preferred Option	GS Olym Avg 94-98	Preferred Option	GS Olym Avg 94-98	Preferred Option
GS Avg 94-98	0.117	GS AMTA 0.303	0.011	GS Avg 94-98	0.106
GS Olym Avg 95-99	0.210	GS AMTA 0.275	0.043	GS AMTA 0.303	0.118
GS AMTA 0.303	0.231	GS AMTA 0.248	0.076	GS AMTA 0.275	0.151
GS Avg 95-99	0.238	GS Avg 94-98	0.090	GS AMTA 0.248	0.184
GS AMTA 0.275	0.264	GS Olym Avg 95-99	0.158	GS Olym Avg 95-99	0.186
GS AMTA 0.248	0.297	GS Avg 95-99	0.178	GS Avg 95-99	0.210
GS Base	0.594	GS Base	0.373	GS Base	0.481

For example, under the 100% trigger level the Olympic Average 95-99 benefits rice producers by $0.624/cwt more than the Added Added AMTA 2.25 and $2.601/cwt more than the Base of no CCP or Added AMTA.

Table 8. Comparison of Average Total Government Costs for Base AMTA, LDP, and Counter Cyclical Payments or Added AMTA in 2001 Across the 100%, 90%, and 95% Trigger Levels

	Government Payments for Alternative Trigger Levels			Difference from 100% Trigger and	
	100% Trigger	90% Trigger	95% Trigger	90% Trigger	95% Trigger
	(billions $)				
Rice					
Base	0.80	0.80	0.80	0.00	0.00
Avg 95-99	1.24	1.09	1.16	0.15	0.08
Avg 94-98	1.27	1.11	1.19	0.16	0.08
Olym Avg 95-99	1.30	1.14	1.22	0.16	0.08
Olym Avg 94-98	1.30	1.14	1.22	0.16	0.08
AMTA 2.25	1.18	1.18	1.18	0.00	0.00
AMTA 2.5	1.23	1.23	1.23	0.00	0.00
AMTA 2.75	1.27	1.27	1.27	0.00	0.00
Cotton					
Base	0.68	0.68	0.68	0.00	0.00
Avg 95-99	1.48	1.13	1.30	0.35	0.19
Avg 94-98	2.13	1.60	1.86	0.52	0.27
Olym Avg 95-99	1.64	1.24	1.42	0.40	0.21
Olym Avg 94-98	2.20	1.66	1.92	0.54	0.28
AMTA 0.067	1.20	1.20	1.20	0.00	0.00
AMTA 0.074	1.26	1.26	1.26	0.00	0.00
AMTA 0.081	1.32	1.32	1.32	0.00	0.00
Corn					
Base	3.26	3.26	3.26	0.00	0.00
Avg 95-99	6.21	4.80	5.43	1.40	0.78
Avg 94-98	7.06	5.33	6.13	1.74	0.94
Olym Avg 95-99	6.19	4.79	5.41	1.40	0.77
Olym Avg 94-98	7.31	5.50	6.34	1.81	0.97
AMTA 0.295	5.36	5.36	5.36	0.00	0.00
AMTA 0.328	5.59	5.59	5.59	0.00	0.00
AMTA 0.361	5.82	5.82	5.82	0.00	0.00
Wheat					
Base	1.36	1.36	1.36	0.00	0.00
Avg 95-99	2.42	1.86	2.12	0.56	0.30
Avg 94-98	2.65	2.02	2.32	0.63	0.33
Olym Avg 95-99	2.40	1.84	2.10	0.55	0.29
Olym Avg 94-98	2.60	1.99	2.28	0.61	0.32
AMTA 0.565	2.66	2.66	2.66	0.00	0.00
AMTA 0.628	2.80	2.80	2.80	0.00	0.00
AMTA 0.69	2.95	2.95	2.95	0.00	0.00
Soybean					
Base	3.00	3.00	3.00	0.00	0.00
Avg 95-99	7.27	5.79	6.51	1.48	0.76
Avg 94-98	8.02	6.40	7.19	1.62	0.83
Olym Avg 95-99	7.31	5.83	6.55	1.48	0.76
Olym Avg 94-98	8.17	6.52	7.33	1.65	0.85
AMTA 0.061	3.27	3.27	3.27	0.00	0.00
AMTA 0.067	3.29	3.29	3.29	0.00	0.00
AMTA 0.074	3.32	3.32	3.32	0.00	0.00
Sorghum					
Base	0.29	0.29	0.29	0.00	0.00
Avg 95-99	0.48	0.39	0.44	0.09	0.05
Avg 94-98	0.55	0.44	0.49	0.11	0.06
Olym Avg 95-99	0.50	0.40	0.45	0.09	0.05
Olym Avg 94-98	0.61	0.49	0.55	0.12	0.06
AMTA 0.248	0.45	0.45	0.45	0.00	0.00
AMTA 0.275	0.47	0.47	0.47	0.00	0.00
AMTA 0.303	0.49	0.49	0.49	0.00	0.00

Summary of an Increase in the Base Level of AMTA Payment Rates in 2001

- Increasing the base AMTA rate by 19% was analyzed for all of the options and results were reported in Tables 9-12. The 19% increase in Base AMTA was arrived at by using the average of the total AMTA rates for the history of the 1996 farm program.

- Increasing the base AMTA rates did not change the option rankings from the original analysis, because the CCP and Added AMTA payment rates and the total receipts per yield unit were all increased by about 85% of the increased base AMTA rate.

Table 9. Comparison of Average Total Receipts per Yield Unit in 2001 for Selected Crops Under Alternative Counter Cyclical and Added AMTA Programs Across Two Initial Base AMTA Rates

	Initial Base AMTA Rate	Higher Base AMTA Rate	Difference
Rice (Cwt.)	**Base AMTA 2.1**	**Higher AMTA 2.5**	
Base	10.638	10.990	0.35
Avg 95-99	12.927	13.278	0.35
Avg 94-98	13.095	13.447	0.35
Olym Avg 95-99	13.251	13.602	0.35
Olym Avg 94-98	13.251	13.602	0.35
AMTA 2.25	12.615	12.967	0.35
AMTA 2.5	12.835	13.186	0.35
AMTA 2.75	13.054	13.406	0.35
Cotton (lb.)	**Base AMTA 0.057**	**Higher AMTA 0.068**	
Base	0.6347	0.645	0.0099
Avg 95-99	0.7282	0.738	0.0099
Avg 94-98	0.8027	0.813	0.0099
Olym Avg 95-99	0.7459	0.756	0.0099
Olym Avg 94-98	0.8109	0.821	0.0099
AMTA 0.067	0.6957	0.706	0.0099
AMTA 0.074	0.7024	0.712	0.0099
AMTA 0.081	0.7092	0.719	0.0099
Corn (bu.)	**Base AMTA 0.27**	**Higher AMTA 0.321**	
Base	2.392	2.431	0.04
Avg 95-99	2.712	2.751	0.04
Avg 94-98	2.804	2.844	0.04
Olym Avg 95-99	2.709	2.749	0.04
Olym Avg 94-98	2.831	2.871	0.04
AMTA 0.295	2.620	2.659	0.04
AMTA 0.328	2.645	2.684	0.04
AMTA 0.361	2.670	2.710	0.04
Wheat (bu.)	**Base AMTA 0.472**	**Higher AMTA 0.562**	
Base	3.498	3.595	0.10
Avg 95-99	3.996	4.093	0.10
Avg 94-98	4.101	4.198	0.10
Olym Avg 95-99	3.983	4.080	0.10
Olym Avg 94-98	4.079	4.176	0.10
AMTA 0.565	4.108	4.205	0.10
AMTA 0.628	4.175	4.273	0.10
AMTA 0.69	4.243	4.341	0.10
Soybean (bu.)	**Base AMTA 0**	**Higher AMTA 0**	
Base	5.549	5.549	-
Avg 95-99	7.040	7.040	-
Avg 94-98	7.303	7.303	-
Olym Avg 95-99	7.055	7.055	-
Olym Avg 94-98	7.357	7.357	-
AMTA 0.061	5.643	5.642	-
AMTA 0.067	5.653	5.652	-
AMTA 0.074	5.663	5.663	-
Sorghum (bu.)	**Base AMTA 0.322**	**Higher AMTA 0.383**	
Base	2.343	2.417	0.07
Avg 95-99	2.698	2.772	0.07
Avg 94-98	2.819	2.893	0.07
Olym Avg 95-99	2.727	2.800	0.07
Olym Avg 94-98	2.936	3.010	0.07
AMTA 0.248	2.640	2.713	0.07
AMTA 0.275	2.673	2.746	0.07
AMTA 0.303	2.706	2.779	0.07

Total receipts includes: market receipts, LDPs, base AMTA for 2001 plus CCPs or Added AMTA. The Base AMTA rate is the rate announced in the 1996 farm program for year 2001 and the Higher AMTA rates represent a 19% increase for 2001. The full 19% increase is not observed in increased total receipts because AMTA is paid on 85% of farm program yield times base acres.

Table 10. Comparison of the Rankings of Alternative Counter Cyclical and Added AMTA Options Relative to the Base and Dollars per Yield Unit Required to Equate Alternative to Preferred Option, Higher Base AMTA

Rankings of Options for the Initial AMTA Rate		Rankings of Options for a Higher Base AMTA Rate	
Rice ($/cwt.)	**Base AMTA 2.1**	**Rice ($/cwt.)**	**Higher AMTA 2.5**
Rice Olym Avg 95-99	Preferred Option	Rice Olym Avg 95-99	Preferred Option
Rice Olym Avg 94-98	0.000	Rice Olym Avg 94-98	0.000
Rice Avg 94-98	0.156	Rice Avg 94-98	0.156
Rice AMTA 2.75	0.185	Rice AMTA 2.75	0.185
Rice Avg 95-99	0.324	Rice Avg 95-99	0.324
Rice AMTA 2.5	0.405	Rice AMTA 2.5	0.405
Rice AMTA 2.25	0.624	Rice AMTA 2.25	0.624
Rice Base	2.601	Rice Base	2.601
Cotton (cents/lb.)	**Base AMTA 0.057**	**Cotton (cents/lb.)**	**Higher AMTA 0.068**
Cott Olym Avg 94-98	Preferred Option	Cott Olym Avg 94-98	Preferred Option
Cott Avg 94-98	0.8208	Cott Avg 94-98	0.8208
Cott Olym Avg 95-99	6.4995	Cott Olym Avg 95-99	6.4995
Cott Avg 95-99	8.2741	Cott Avg 95-99	8.2741
Cott AMTA 0.081	10.2082	Cott AMTA 0.081	10.2119
Cott AMTA 0.074	10.8850	Cott AMTA 0.074	10.8884
Cott AMTA 0.067	11.5618	Cott AMTA 0.067	11.5648
Cott Base	17.6529	Cott Base	17.6529
Corn ($/bu.)	**Base AMTA 0.27**	**Corn ($/bu.)**	**Higher AMTA 0.321**
Corn Olym Avg 94-98	Preferred Option	Corn Olym Avg 94-98	Preferred Option
Corn Avg 94-98	0.027	Corn Avg 94-98	0.027
Corn Avg 95-99	0.120	Corn Avg 95-99	0.120
Corn Olym Avg 95-99	0.122	Corn Olym Avg 95-99	0.122
Corn AMTA 0.361	0.162	Corn AMTA 0.361	0.162
Corn AMTA 0.328	0.187	Corn AMTA 0.328	0.188
Corn AMTA 0.295	0.213	Corn AMTA 0.295	0.213
Corn Base	0.440	Corn Base	0.440
Wheat ($/bu.)	**Base AMTA 0.472**	**Wheat ($/bu.)**	**Higher AMTA 0.562**
Wht AMTA 0.69	Preferred Option	Wht AMTA 0.69	Preferred Option
Wht AMTA 0.628	0.068	Wht AMTA 0.628	0.068
Wht AMTA 0.565	0.136	Wht AMTA 0.565	0.136
Wht Avg 94-98	0.142	Wht Avg 94-98	0.142
Wht Olym Avg 94-98	0.164	Wht Olym Avg 94-98	0.164
Wht Avg 95-99	0.246	Wht Avg 95-99	0.247
Wht Olym Avg 95-99	0.259	Wht Olym Avg 95-99	0.260
Wht Base	0.746	Wht Base	0.746
Soybean ($/bu.)	**Base AMTA 0**	**Soybean ($/bu.)**	**Higher AMTA 0**
Soy Olym Avg 94-98	Preferred Option	Soy Olym Avg 94-98	Preferred Option
Soy Avg 94-98	0.054	Soy Avg 94-98	0.054
Soy Olym Avg 95-99	0.300	Soy Olym Avg 95-99	0.300
Soy Avg 95-99	0.316	Soy Avg 95-99	0.316
Soy AMTA 0.074	1.675	Soy AMTA 0.074	1.676
Soy AMTA 0.067	1.685	Soy AMTA 0.067	1.686
Soy AMTA 0.061	1.696	Soy AMTA 0.061	1.696
Soy Base	1.789	Soy Base	1.789
Sorghum ($/bu.)	**Base AMTA 0.322**	**Sorghum ($/bu.)**	**Higher AMTA 0.383**
GS Olym Avg 94-98	Preferred Option	GS Olym Avg 94-98	Preferred Option
GS Avg 94-98	0.117	GS Avg 94-98	0.117
GS Olym Avg 95-99	0.210	GS Olym Avg 95-99	0.210
GS AMTA 0.303	0.231	GS AMTA 0.303	0.231
GS Avg 95-99	0.238	GS Avg 95-99	0.238
GS AMTA 0.275	0.264	GS AMTA 0.275	0.264
GS AMTA 0.248	0.297	GS AMTA 0.248	0.297
GS Base	0.594	GS Base	0.594

The Base AMTA rate is the rate announced in the 1996 farm program for year 2001 and the Higher AMTA rates represent a 19% increase for 2001.

Table 11. Comparison of Average Counter Cyclical Payments per Yield Unit for Alternative Base Periods or Added AMTA Payments at 100% Trigger, Across Alternative Base AMTA Rates

	Base AMTA Rates	19% Higher AMTA Rates	Difference
		($/Yield Unit)	
Rice (Cwt.)	**Base AMTA 2.1**	**Higher AMTA 2.5**	
Base	0.000	0.000	0.000
Avg 95-99	2.289	2.289	0.000
Avg 94-98	2.457	2.457	0.000
Olym Avg 95-99	2.613	2.613	0.000
Olym Avg 94-98	2.613	2.613	0.000
AMTA 2.25	1.977	1.977	0.000
AMTA 2.5	2.197	2.197	0.000
AMTA 2.75	2.416	2.416	0.000
Cotton (lb.)	**Base AMTA 0.057**	**Higher AMTA 0.068**	
Base	0.000	0.000	0.000
Avg 95-99	0.093	0.093	0.000
Avg 94-98	0.168	0.168	0.000
Olym Avg 95-99	0.111	0.111	0.000
Olym Avg 94-98	0.176	0.176	0.000
AMTA 2.25	0.061	0.061	0.000
AMTA 2.5	0.068	0.068	0.000
AMTA 2.75	0.074	0.074	0.000
Corn (bu.)	**Base AMTA 0.27**	**Higher AMTA 0.321**	
Base	0.000	0.000	0.000
Avg 95-99	0.320	0.320	0.000
Avg 94-98	0.413	0.413	0.000
Olym Avg 95-99	0.318	0.318	0.000
Olym Avg 94-98	0.440	0.440	0.000
AMTA 2.25	0.228	0.228	0.000
AMTA 2.5	0.253	0.253	0.000
AMTA 2.75	0.278	0.278	0.000
Wheat (bu.)	**Base AMTA 0.472**	**Higher AMTA 0.562**	
Base	0.000	0.000	0.000
Avg 95-99	0.499	0.499	0.000
Avg 94-98	0.603	0.603	0.000
Olym Avg 95-99	0.486	0.486	0.000
Olym Avg 94-98	0.581	0.581	0.000
AMTA 2.25	0.610	0.611	0.000
AMTA 2.5	0.678	0.678	0.001
AMTA 2.75	0.746	0.746	0.000
Soybean (bu.)	**Base AMTA 0**	**0.000 Higher AMTA 0**	
Base	0.000	0.000	0.000
Avg 95-99	1.491	1.491	0.000
Avg 94-98	1.754	1.754	0.000
Olym Avg 95-99	1.506	1.506	0.000
Olym Avg 94-98	1.808	1.808	0.000
AMTA 2.25	0.093	0.093	0.000
AMTA 2.5	0.104	0.103	0.000
AMTA 2.75	0.114	0.114	0.000
Sorghum (bu.)	**Base AMTA 0.322**	**Higher AMTA 0.383**	
Base	0.000	0.000	0.000
Avg 95-99	0.355	0.355	0.000
Avg 94-98	0.476	0.476	0.000
Olym Avg 95-99	0.384	0.384	0.000
Olym Avg 94-98	0.593	0.593	0.000
AMTA 2.25	0.297	0.297	0.000
AMTA 2.5	0.330	0.330	0.000
AMTA 2.75	0.363	0.363	0.000

The Base AMTA rate is the rate announced in the 1996 farm program for year 2001 and the Higher AMTA rates represent a 19% increase for 2001.

Table 12. Comparison of Average Total Government Costs for Base AMTA, LDP, and Counter Cyclical Payments or Added AMTA in 2001 for a 100% Trigger and Alternative Base AMTA Rates

	Base AMTA Rates	19% Higher AMTA Rates	Difference
		(Billions $)	
Rice	**Base AMTA 2.1**	**Higher AMTA 2.5**	
Base	0.80	0.87	0.06
Avg 95-99	1.24	1.31	0.07
Avg 94-98	1.27	1.34	0.07
Olym Avg 95-99	1.30	1.37	0.07
Olym Avg 94-98	1.30	1.37	0.07
AMTA 2.25	1.18	1.25	0.07
AMTA 2.5	1.23	1.29	0.07
AMTA 2.75	1.27	1.33	0.07
Cotton	**Base AMTA 0.057**	**Higher AMTA 0.068**	
Base	0.68	0.76	0.09
Avg 95-99	1.48	1.57	0.09
Avg 94-98	2.13	2.21	0.09
Olym Avg 95-99	1.64	1.72	0.09
Olym Avg 94-98	2.20	2.28	0.09
AMTA 2.25	1.20	1.29	0.09
AMTA 2.5	1.26	1.35	0.09
AMTA 2.75	1.32	1.40	0.09
Corn	**Base AMTA 0.27**	**Higher AMTA 0.321**	
Base	3.26	3.62	0.37
Avg 95-99	6.21	6.57	0.37
Avg 94-98	7.06	7.43	0.37
Olym Avg 95-99	6.19	6.55	0.37
Olym Avg 94-98	7.31	7.68	0.37
AMTA 2.25	5.36	5.72	0.36
AMTA 2.5	5.59	5.95	0.36
AMTA 2.75	5.82	6.19	0.36
Wheat	**Base AMTA 0.472**	**Higher AMTA 0.562**	
Base	1.36	1.57	0.21
Avg 95-99	2.42	2.63	0.21
Avg 94-98	2.65	2.85	0.21
Olym Avg 95-99	2.40	2.60	0.21
Olym Avg 94-98	2.60	2.80	0.21
AMTA 2.25	2.66	2.87	0.21
AMTA 2.5	2.80	3.01	0.21
AMTA 2.75	2.95	3.16	0.21
Soybean	**Base AMTA 0**	**Higher AMTA 0**	
Base	3.00	3.00	0.00
Avg 95-99	7.27	7.27	0.00
Avg 94-98	8.02	8.02	0.00
Olym Avg 95-99	7.31	7.31	0.00
Olym Avg 94-98	8.17	8.17	0.00
AMTA 2.25	3.27	3.26	0.00
AMTA 2.5	3.29	3.29	0.00
AMTA 2.75	3.32	3.32	0.00
Sorghum	**Base AMTA 0.322**	**Higher AMTA 0.383**	
Base	0.29	0.33	0.04
Avg 95-99	0.48	0.52	0.04
Avg 94-98	0.55	0.59	0.04
Olym Avg 95-99	0.50	0.54	0.04
Olym Avg 94-98	0.61	0.65	0.04
AMTA 2.25	0.45	0.49	0.04
AMTA 2.5	0.47	0.51	0.04
AMTA 2.75	0.49	0.53	0.04

**Summary of Comparing a State Triggered CCP Program to a
Nationally Triggered Program**

- The analyses presented thus far assumed the CCP program was triggered by national receipts. One alternative would be for the payments to be triggered at the state level. In such a case one state could receive a CCP while other states did not receive a payment or they received a different payment rate. A state triggered program would depend on state average price and yield to calculate receipts. A state triggered CCP program was analyzed for rice and the results were reported in Table 13.

- The results of a state triggered CCP were compared to the national program by reporting the average change in the CCP rates by option and the probability that the state CCP rate would exceed the national CCP rate.

- On average Texas producers would receive a $0.10 to 0.20/cwt. lower CCP rate if the program was triggered at the state level. A state triggered program provided Texas growers a higher CCP rate 20 to 36% of the time. Missouri and Arkansas producers experienced about the same type of results as the Texas farmers if the program was state oriented.

- California, Louisiana, and Mississippi growers received higher or about the same average CCP rates if the program was state triggered. Growers in these states received higher CCP rates 51 to 76% of the time if the program was state oriented.

Table 13. Comparison of State Triggered Counter Cyclical Payment Program to a National Triggered Counter Cyclical Payment Program for Rice, Assuming 100% Trigger and Base AMTA Rates

	State CCP Minus National CCP	P(State CCP> National CCP)
Texas	($/cwt.)	(percent)
Avg 95-99	-0.10	0.36
Avg 94-98	-0.09	0.36
Olym Avg 95-99	-0.23	0.20
Olym Avg 94-98	-0.23	0.20
Arkansas		
Avg 95-99	-0.001	0.404
Avg 94-98	-0.063	0.272
Olym Avg 95-99	-0.056	0.284
Olym Avg 94-98	-0.056	0.284
California		
Avg 95-99	0.131	0.661
Avg 94-98	0.334	0.767
Olym Avg 95-99	0.152	0.695
Olym Avg 94-98	0.152	0.695
Louisiana		
Avg 95-99	0.048	0.599
Avg 94-98	-0.030	0.503
Olym Avg 95-99	-0.017	0.510
Olym Avg 94-98	-0.017	0.510
Mississippi		
Avg 95-99	0.040	0.579
Avg 94-98	0.082	0.678
Olym Avg 95-99	0.102	0.716
Olym Avg 94-98	0.102	0.716
Missouri		
Avg 95-99	0.058	0.493
Avg 94-98	-0.061	0.323
Olym Avg 95-99	0.018	0.434
Olym Avg 94-98	0.018	0.434

A Counter Cyclical Program that is triggered when state level market receipts per planted acre is less than the historical base receipts per planted acre in that state is compared to a nationally triggered program using four alternative base periods.

Summary of Comparing Trigger Fractions

- The analyses presented thus far have assumed a 100% trigger for determining CCPs.

- The impacts of reducing the CCP trigger fraction to 90 or 95% are summarized in Figures 9 and 10. The CCP rates and the total receipts per cwt. of rice decline considerably if the trigger rate falls to 90%.

Figure 9. Cumulative Distributions of Counter Cyclical or Added AMTA Payments per Cwt of Rice in 2001, Assuming 90%, 95%, or 100% Trigger Levels
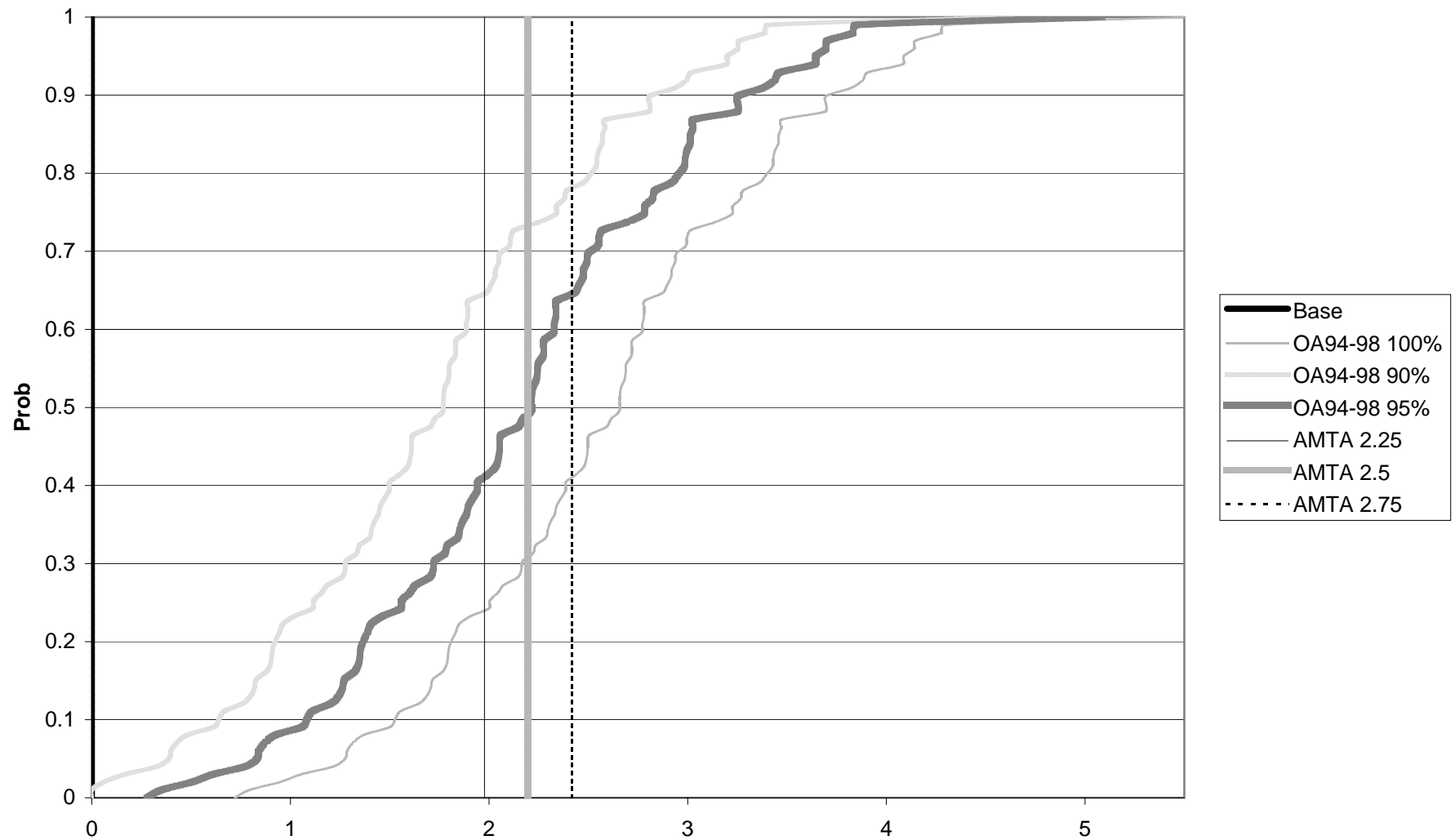
Figure 10. Cumulative Distributions of Total Receipts in 2001 for Rice, Assuming Alternative Trigger Levels for Counter Cyclical or Added AMTA Payments

Prob

Base
OA 94-98 100%
OA 94-98 90%
OA 94-98 95%
AMTA 2.25
AMTA 2.5
AMTA 2.75