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**Research Report**

## Method for calculation of counter cyclical payments using state and national trigger levels (major crops)

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**Method for Calculation of Counter Cyclical Payments Using  
State and National Trigger Levels (Major Crops)**

Briefing Paper 01-5

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## Counter Cyclical Trigger Level Calculation

### How to Calculate

- (1) National and state yields per planted acre (Table 1 & 2)
- (2) National season average price (Table 1 & 2)
- (3) Base period that gives highest level of protection
  - (1994-1998) Olympic average
  - (1995-1999) Olympic average
- (4) Calculate market returns for each year at state and national level (Table 3 & 4)
  - Market returns = U.S. price times state & national yield
- (5) Given market returns in tables 3 & 4 calculate the olympic average for each state and the nation for the appropriate Base period
- (6) Market returns per planted acre used to calculate CCP payments

	Texas	Arkansas	California	Louisiana	Mississippi	Missouri	U.S.
OA (1994-98)	\$511.70	\$518.10	\$680.60	\$421.40	\$520.10	\$468.50	\$525.60
OA (1995-99)	\$511.70	\$518.10	\$680.60	\$421.40	\$520.10	\$468.50	\$525.60

### Calculation Process for Simulating Total (Texas) Receipts per Planted Acre of Rice 2001. (Rounding may cause results to deviate: Table 5)

- (1) Expected market returns
 

5 year average yield 96-00	59.29	cwt./acre
FAPRI U.S. season average price	\$6.29	cwt.
Estimated market returns/acre	= \$372.93	per acre
  
- (2) Expected CCP payment
 

Counter cyclical payment	\$511.70
Estimated market returns	- \$372.93
	= \$138.73 acre

(3) Conversion to market receipts \$/cwt.			
Expected CCP payment		\$138.73	
Texas average yield	÷	<u>59.29</u>	cwt./acre
CCP rate per cwt.	=	<b>\$2.34</b>	cwt.
(4) LDP payment assuming mean prices			
FAPRI Adjusted world price 2001		\$3.99	cwt.
Rice loan rate		<u>\$6.50</u>	cwt.
LDP rate	=	<b>\$2.514</b>	cwt.
(5) Base AMTA calculation			
Base AMTA rate		2.10	cwt.
Texas 1996 farm program yield	x	49.42	cwt./acre
Payment fraction	x	.85	
AMTA payment per acre	=	\$88.22	per base acre
Adjustment per base AMTA acre	x	1.27	
AMTA per planted acre	=	\$112.14	per adjusted planted acre
FSA yield	÷	<u>59.29</u>	
AMTA dollars per cwt.	=	<b>\$1.89</b>	cwt.
(6) Total receipts per cwt. from all sources			
From (3)		\$2.34	CCP per cwt.
From (4)		\$2.51	LDP per cwt.
From (5)		\$1.89	AMTA per cwt.
From (1)		<u>\$6.29</u>	Market price per cwt.
		<b>\$13.04</b>	cwt.

The \$13.04/cwt. would be equivalent to a producer who received a \$2.30/cwt. premium over their \$6.50/cwt. loan rate plus the CCP and the AMTA payment.

- (7) If the formula for computing BASE acreage changes, the data in Table 6 shows state-by-state impacts relative to the current BASE.

**Table 1. State Level Yields and National Prices used for the 1994-1998 Olympic Average**

Year	Yld/Planted Texas	Yld/Planted Arkansas	Yld/Planted California	Yld/Planted Louisiana	Yld/Planted Mississippi	Yld/Planted Missouri	Yld/Planted US	US Price US Price
1980	42.0	40.5	63.9	33.8	36.9	41.8	43.2	12.80
1981	46.9	44.6	68.2	40.4	43.5	40.3	47.8	9.05
1982	46.8	42.3	66.4	41.5	40.4	44.8	46.6	7.91
1983	43.1	42.3	70.0	37.7	39.8	40.3	45.5	8.57
1984	49.2	45.6	70.0	41.3	42.4	45.4	49.0	8.04
1985	54.7	51.5	72.1	43.5	52.9	48.1	53.7	6.53
1986	62.3	52.5	76.4	45.1	53.5	50.4	56.0	3.75
1987	58.8	52.0	74.7	45.0	50.5	53.2	55.0	7.27
1988	59.7	53.1	69.4	44.2	52.0	50.4	54.5	6.83
1989	56.7	55.5	78.0	42.5	55.8	50.7	56.6	7.35
1990	59.7	48.4	76.0	47.7	55.9	40.9	53.9	6.70
1991	59.7	51.4	84.8	44.2	54.8	48.4	55.3	7.58
1992	57.7	54.2	84.6	45.8	56.0	45.9	56.6	5.89
1993	53.6	48.5	82.4	44.2	51.9	43.4	53.5	7.98
1994	59.8	56.2	84.7	47.1	58.6	49.2	59.0	6.78
1995	55.7	54.1	75.7	45.6	53.6	49.9	55.7	9.15
1996	61.6	61.0	74.6	48.5	59.4	54.4	60.8	9.96
1997	54.8	56.6	82.2	46.1	57.5	50.8	58.6	9.70
1998	55.6	57.4	68.2	44.9	57.6	51.3	56.1	8.89
1999	58.8	58.3	72.0	49.7	56.2	53.4	58.3	6.00
2000	65.7	60.6	78.7	48.5	58.5	53.7	62.4	5.78

**Table 2. State Level Yields and National Prices used for the 1995-1999 Olympic Average**

Year	Yld/Planted Texas	Yld/Planted Arkansas	Yld/Planted California	Yld/Planted Louisiana	Yld/Planted Mississippi	Yld/Planted Missouri	Yld/Planted US	US Price US Price
1980	42.0	40.5	63.9	33.8	36.9	41.8	43.2	12.80
1981	46.9	44.6	68.2	40.4	43.5	40.3	47.8	9.05
1982	46.8	42.3	66.4	41.5	40.4	44.8	46.6	7.91
1983	43.1	42.3	70.0	37.7	39.8	40.3	45.5	8.57
1984	49.2	45.6	70.0	41.3	42.4	45.4	49.0	8.04
1985	54.7	51.5	72.1	43.5	52.9	48.1	53.7	6.53
1986	62.3	52.5	76.4	45.1	53.5	50.4	56.0	3.75
1987	58.8	52.0	74.7	45.0	50.5	53.2	55.0	7.27
1988	59.7	53.1	69.4	44.2	52.0	50.4	54.5	6.83
1989	56.7	55.5	78.0	42.5	55.8	50.7	56.6	7.35
1990	59.7	48.4	76.0	47.7	55.9	40.9	53.9	6.70
1991	59.7	51.4	84.8	44.2	54.8	48.4	55.3	7.58
1992	57.7	54.2	84.6	45.8	56.0	45.9	56.6	5.89
1993	53.6	48.5	82.4	44.2	51.9	43.4	53.5	7.98
1994	59.8	56.2	84.7	47.1	58.6	49.2	59.0	6.78
1995	55.7	54.1	75.7	45.6	53.6	49.9	55.7	9.15
1996	61.6	61.0	74.6	48.5	59.4	54.4	60.8	9.96
1997	54.8	56.6	82.2	46.1	57.5	50.8	58.6	9.70
1998	55.6	57.4	68.2	44.9	57.6	51.3	56.1	8.89
1999	58.8	58.3	72.0	49.7	56.2	53.4	58.3	6.00
2000	65.7	60.6	78.7	48.5	58.5	53.7	62.4	5.78

**Table 3. Years and Data used to calculate the Base for a CCP paid on Total Market Receipts per Planted Acre**

Year	Texas	Arkansas	California (\$/Planted Acre)	Louisiana	Mississippi	Missouri	US
1994	<b>405.7</b>	<b>381.1</b>	<b>573.9</b>	<b>319.5</b>	<b>397.5</b>	<b>333.7</b>	<b>399.9</b>
1995	509.2	495.0	692.4	417.2	490.7	456.4	509.7
1996	<b>613.4</b>	<b>607.3</b>	743.0	<b>483.2</b>	<b>591.9</b>	<b>541.4</b>	<b>605.2</b>
1997	531.4	549.0	<b>797.2</b>	447.6	557.9	493.0	568.0
1998	494.3	510.5	606.3	399.5	511.8	455.9	499.1
1999	352.6	349.9	431.9	298.1	336.9	320.5	350.1
2000	379.7	350.1	455.0	280.3	337.9	310.3	360.4
Sum 94-98	2554.0	2542.8	3412.9	2067.0	2549.8	2280.5	2582.0
Min 94-98	405.7	381.1	573.9	319.5	397.5	333.7	399.9
Max 94-98	613.4	607.3	797.2	483.2	591.9	541.4	605.2
Olympic Average 94-98	511.7	518.1	680.6	421.4	520.1	468.5	525.6

**Table 4. Olympic Average 95-99**

Year	Texas	Arkansas	California (\$/Planted Acre)	Louisiana	Mississippi	Missouri	US
1995	509.2	495.0	692.4	417.2	490.7	456.4	509.7
1996	<b>613.4</b>	<b>607.3</b>	743.0	<b>483.2</b>	<b>591.9</b>	<b>541.4</b>	<b>605.2</b>
1997	531.4	549.0	<b>797.2</b>	447.6	557.9	493.0	568.0
1998	494.3	510.5	606.3	399.5	511.8	455.9	499.1
1999	<b>352.6</b>	349.9	<b>431.9</b>	<b>298.1</b>	<b>336.9</b>	<b>320.5</b>	<b>350.1</b>
2000	379.7	350.1	455.0	280.3	337.9	310.3	360.4
Sum 95-99	2501.0	2511.7	3270.9	2045.6	2489.2	2267.3	2532.2
Min 95-99	352.6	349.9	431.9	298.1	336.9	320.5	350.1
Max 95-99	613.4	607.3	797.2	483.2	591.9	541.4	605.2
Olympic Average 95-99	511.7	518.1	680.6	421.4	520.1	468.5	525.6

**Table 5. Calculations for Simulating Total Receipts per Planted Acre of Rice in 2001**

	Texas	Arkansas	California (cwt/planted acre)	Louisiana	Mississippi	Missouri	US	
<b>5 Year Average Yield 96-00</b>	59.29	58.78	75.14	47.55	57.83	52.72	59.23	
<b>FAPRI Mean Price for 2001 Jan 2001 Baseline</b>			US Price 6.29					
<b>Expected Value for the Value of Market Receipts for 2001</b>								
(\$/planted Acre)	372.93	369.70	472.61	299.11	363.73	331.58	372.58	
<b>Expected Value of CCP per Planted Acre for two Olympic Average Bases (\$/planted Acre)</b>								
Olympic Average 94-98 or 95-99	138.73	148.43	207.98	122.32	156.41	136.87	153.05	
<b>Convert the CCP \$/planted acre to a \$/Cwt.</b>								
Expected CCP per planted acre	138.73	148.43	207.98	122.32	156.41	136.87	153.05	
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	
CCP per Cwt.	<b>2.34</b>	<b>2.53</b>	<b>2.77</b>	<b>2.57</b>	<b>2.70</b>	<b>2.60</b>	<b>2.58</b>	
<b>Calculate the Market Receipts at the Means as \$/cwt.</b>								
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	
FAPRI Average Price 2001	6.29	6.29	6.29	6.29	6.29	6.29	6.29	
Receipts per planted acre	372.93	369.70	472.61	299.11	363.73	331.58	372.58	
Receipts per cwt.	<b>6.29</b>	<b>6.29</b>	<b>6.29</b>	<b>6.29</b>	<b>6.29</b>	<b>6.29</b>	<b>6.29</b>	
<b>LDP Assuming Mean Prices</b>								
FAPRI Average Price 2001								6.29
Factor for AWP								0.6316
Adjusted World Price 2001								3.99
Rice Loan Rate								6.5
LDP Rate	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>	<b>2.514</b>
<b>Base AMTA Calculation by State</b>								
Base AMTA Rate	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
Farm Program Yield	49.42	45.47	68.10	40.81	41.53	45.95	48.17	
Program Fraction	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
AMTA Payment per Base Acre	88.22	81.17	121.56	72.84	74.13	82.01	85.98	
Base Acres (1,000)	597.66	1671.00	597.18	770.65	375.95	140.04	4182.01	
Planting Intentions for 2001 (1,000)	220.00	1400.00	520.00	540.00	225.00	185.00	3290.00	
Base to Planted Acre Fraction	<b>2.717</b>	<b>1.194</b>	<b>1.148</b>	<b>1.427</b>	<b>1.671</b>	<b>0.757</b>	<b>1.271</b>	
<b>Assume each planted acre carries an additional 1.27112674772036 base acres</b>								
Base AMTA per planted acre	112.14	103.17	154.52	92.59	94.22	104.25	109.30	
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	Mkt Rec
Convert Base AMTA to \$/cwt	<b>1.89</b>	<b>1.76</b>	<b>2.06</b>	<b>1.95</b>	<b>1.63</b>	<b>1.98</b>	<b>1.85</b>	+LDP
<b>Summarize the Total Revenue</b>								+Base AMTA
Total Revenue per cwt.	<b>13.04</b>	<b>13.08</b>	<b>13.63</b>	<b>13.32</b>	<b>13.14</b>	<b>13.38</b>	<b>13.23</b>	<b>13.23</b>
<b>Added AMTA of \$2.25/cwt</b>	2.25							
Added AMTA per Base Yield	2.25	2.25	2.25	2.25	2.25	2.25	2.25	
Farm Program Yield	49.42	45.47	68.10	40.81	41.53	45.95	48.17	
Program Fraction	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Added AMTA per Base Acre	94.52	86.96	130.24	78.05	79.42	87.87	92.13	
Base to Planted Acre Fraction	1.27	1.27	1.27	1.27	1.27	1.27	1.27	Mkt Rec
Gross Added AMTA per Plnted Ac	120.15	110.54	165.55	99.21	100.95	111.70	117.10	+Added AMTA
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	+LDP
Added AMTA per Planted Acre	<b>2.03</b>	<b>1.88</b>	<b>2.20</b>	<b>2.09</b>	<b>1.75</b>	<b>2.12</b>	<b>1.98</b>	+Base AMTA
Total Revenue per cwt.	12.722	12.440	13.064	12.837	12.179	12.900	12.626	<b>12.63</b>
<b>Added AMTA of \$2.5/cwt</b>	2.5							
Added AMTA per Base Yield	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Farm Program Yield	49.42	45.47	68.10	40.81	41.53	45.95	48.17	
Program Fraction	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Added AMTA per Base Acre	105.03	96.63	144.71	86.72	88.25	97.64	102.36	
Base to Planted Acre Fraction	1.27	1.27	1.27	1.27	1.27	1.27	1.27	Mkt Rec
Gross Added AMTA per Plnted Ac	133.50	122.83	183.95	110.23	112.17	124.11	130.11	+Added AMTA
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	+LDP
Added AMTA per Planted Acre	<b>2.25</b>	<b>2.09</b>	<b>2.45</b>	<b>2.32</b>	<b>1.94</b>	<b>2.35</b>	<b>2.20</b>	+Base AMTA
Total Revenue per cwt.	12.947	12.649	13.309	13.069	12.373	13.136	12.846	<b>12.85</b>
<b>Added AMTA of \$2.75/cwt</b>	2.75							
Added AMTA per Base Yield	2.75	2.75	2.75	2.75	2.75	2.75	2.75	
Farm Program Yield	49.42	45.47	68.10	40.81	41.53	45.95	48.17	
Program Fraction	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Added AMTA per Base Acre	115.53	106.29	159.18	95.39	97.07	107.40	112.60	
Base to Planted Acre Fraction	1.27	1.27	1.27	1.27	1.27	1.27	1.27	Mkt Rec
Gross Added AMTA per Plnted Ac	146.85	135.11	202.34	121.25	123.39	136.52	143.13	+Added AMTA
Average Yield 1996-00	59.29	58.78	75.14	47.55	57.83	52.72	59.23	+LDP
Added AMTA per Planted Acre	<b>2.48</b>	<b>2.30</b>	<b>2.69</b>	<b>2.55</b>	<b>2.13</b>	<b>2.59</b>	<b>2.42</b>	+Base AMTA
Total Revenue per cwt.	13.172	12.858	13.553	13.301	12.567	13.371	13.065	<b>13.07</b>

**Table 6. Alternative Formulas for Calculating Rice Base Acres by State.**

**Assumes Planted and Considered Planted (Base Acres) 1990-1995 and Actual Plantings 1996-2000**

	Ark	Cal	La	Ms	Mo	Tx	US
1990	1664	625	749	371	114	610	4154
1991	1659	619	752	369	122	612	4155
1992	1655	610	751	370	125	608	4139
1993	1657	605	756	371	130	600	4143
1994	1666	598	759	372	134	603	4158
1995	1671	597	771	376	140	598	4182
1996	1180	502	535	210	97	300	2824
1997	1400	518	585	240	122	260	3125
1998	1500	460	625	270	145	285	3285
1999	1630	510	620	325	186	260	3531
2000	1420	550	485	220	175	215	3065

**Base Acres Assuming Planted and Considered Planted Over Alternative Periods**

	Arkansas		California		Louisiana		Mississippi		Missouri		Texas		United States	
	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base
1991-95	1661.6	99%	605.8	101%	757.8	98%	371.6	99%	130.2	93%	604.2	101%	4155.4	99%
1992-96	1565.8	94%	582.4	98%	714.4	93%	339.8	90%	125.2	89%	541.8	91%	3889.2	93%
1993-97	1514.8	91%	564.0	94%	681.2	88%	313.8	83%	124.6	89%	472.2	79%	3686.4	88%
1994-98	1483.4	89%	535.0	90%	655.0	85%	293.6	78%	127.6	91%	409.2	68%	3514.8	84%
1995-99	1476.2	88%	517.4	87%	627.2	81%	284.2	76%	138.0	99%	340.6	57%	3389.4	81%
1996-00	1426.0	85%	508.0	85%	570.0	74%	253.0	67%	145.0	104%	264.0	44%	3166.0	76%

**Planted Acres for Rice Assuming No Credit for Considered Plantings 1991-1995**

	Ark	Cal	La	Ms	Mo	Tx	US
1990	1240	400	555	255	92	355	2897
1991	1300	357	560	225	97	345	2884
1992	1400	396	630	280	117	353	3176
1993	1280	440	545	250	105	300	2920
1994	1440	487	625	315	131	355	3353
1995	1350	467	575	290	119	320	3121
1996	1180	502	535	210	97	300	2824
1997	1400	518	585	240	122	260	3125
1998	1500	460	625	270	145	285	3285
1999	1630	510	620	325	186	260	3531
2000	1420	550	485	220	175	215	3065

**Base Acres Calculated from Planted Acres Only for Alternative Periods**

	Arkansas		California		Louisiana		Mississippi		Missouri		Texas		United States	
	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base	Base	% 96 Base
1991-95	1354.0	81%	429.4	72%	587.0	76%	272.0	72%	113.8	81%	334.6	56%	3090.8	74%
1992-96	1330.0	80%	458.4	77%	582.0	75%	269.0	72%	113.8	81%	325.6	54%	3078.8	74%
1993-97	1330.0	80%	482.8	81%	573.0	74%	261.0	69%	114.8	82%	307.0	51%	3068.6	73%
1994-98	1374.0	82%	486.8	82%	589.0	76%	265.0	70%	122.8	88%	304.0	51%	3141.6	75%
1995-99	1412.0	85%	491.4	82%	588.0	76%	267.0	71%	133.8	96%	285.0	48%	3177.2	76%
1996-00	1426.0	85%	508.0	85%	570.0	74%	253.0	67%	145.0	104%	264.0	44%	3166.0	76%