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The Relationship Between the ACRE Program and Crop Insurance

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ACRE Program

- Beginning in 2009, producers have choice between:
 - (1) Traditional option
 - Direct payments
 - Marketing loans
 - Countercyclical payments
 - (2) ACRE option
 - Direct payments with 20% cut
 - Marketing loans with 30% cut in loan rates
 - ACRE revenue plan



ACRE Program

- **ACRE based on a state-level revenue index**
- **Payments are crop specific**
- **Payments based on planted acres**
- **Revenue guarantee cannot change by more than 10% from previous year**

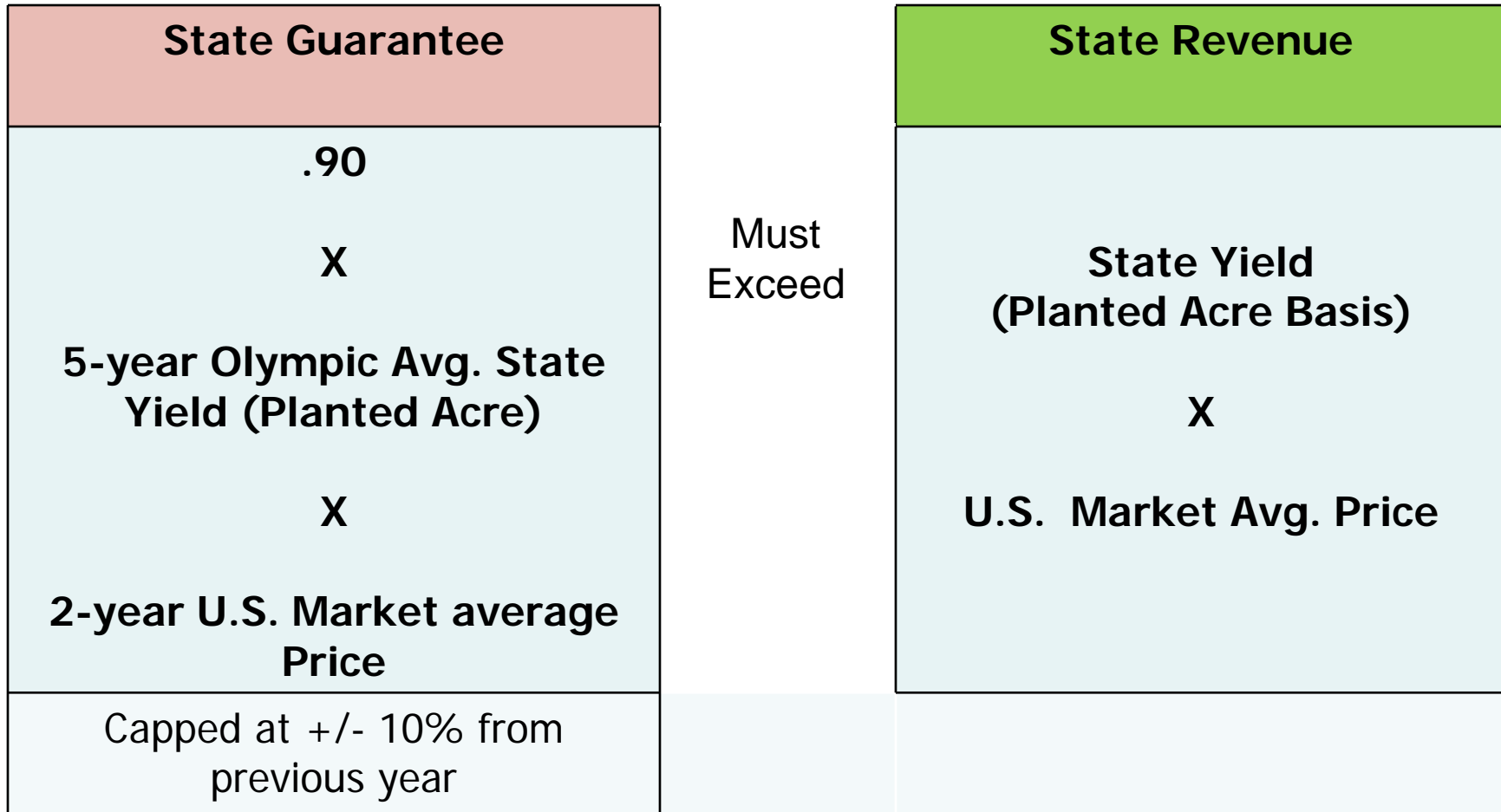


ACRE Program: Two Triggers

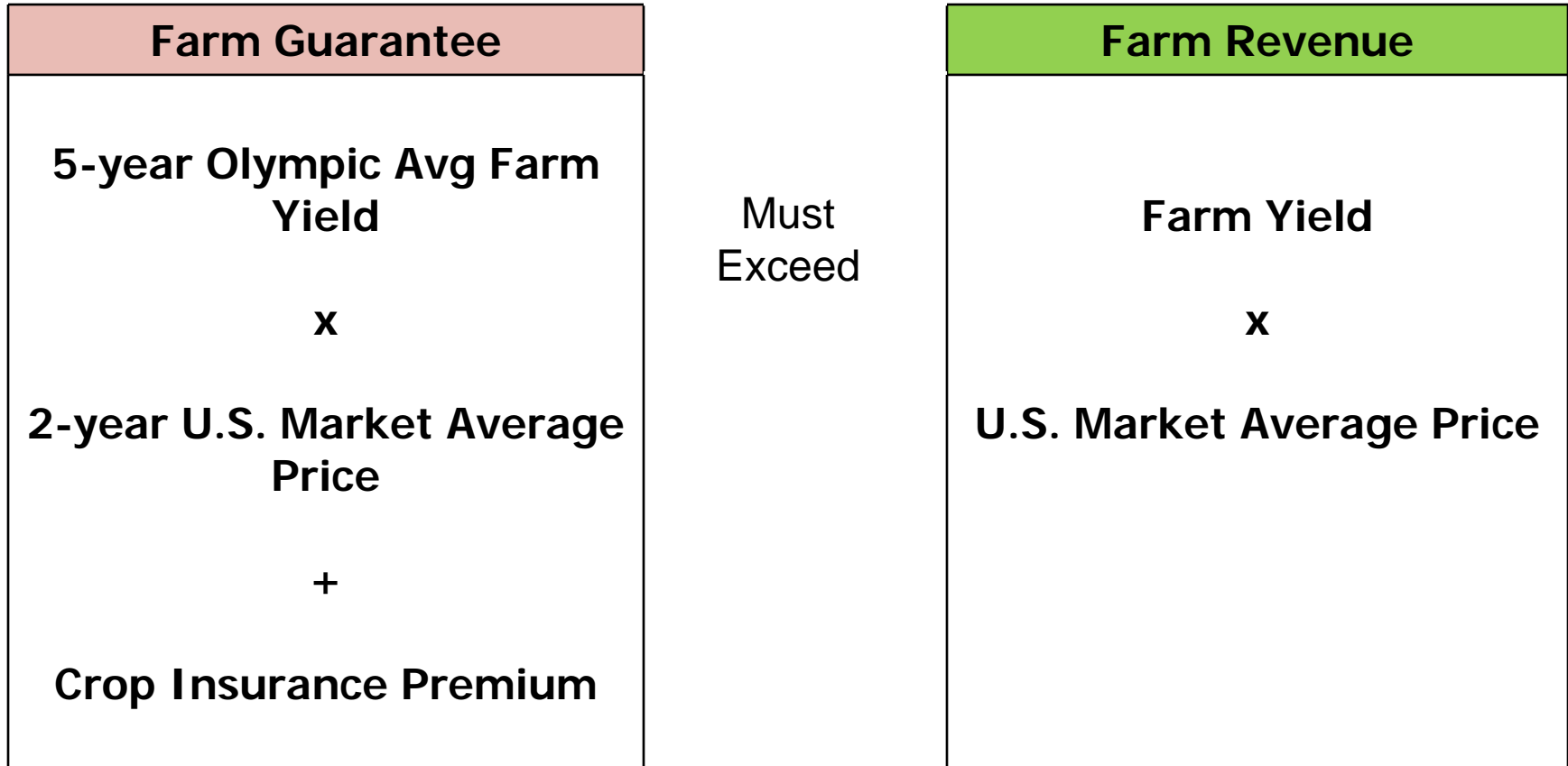
1. Actual *state* revenue must fall below state guarantee level
 2. Actual *farm* revenue must fall below farm guarantee level (farm benchmark)
- Implications
 - ACRE could pay at state level and some farms would not be eligible
 - Farm-level losses may not trigger ACRE payment



State Revenue Trigger



Farm Revenue Trigger



Implies that farm-level yields will have to be provided.

Rules and documentation requirements for proving yield histories have not yet been released.



ACRE Payment

If both triggers are met, then the payment will be:

Planted acres

X State-level payment (state guarantee minus state revenue)

X .833 (.85 in 2012)

X Avg Historic Farm Yield / Avg Historic State Yield

Maximum state level payment is 25% of state guarantee



ACRE vs. Traditional

- **Traditional:**
 - \$4 to \$5 higher per acre direct payment
 - Very small chance of LDP or counter-cyclical payments
- **ACRE:**
 - \$4 to \$5 lower direct payment
 - Much higher chance of ACRE payments. In some years, payments could be large
- **Tradeoff:**
 - Give up certain dollars (Direct) for uncertain dollars (ACRE)



ACRE and Crop Insurance

- **ACRE covers systemic revenue risk**
- **Individual insurance plans cover risk at the farm level**
 - **APH yield**
 - **CRC**
 - **Both value losses using futures prices**
 - **Cover price movements from fall/spring to harvest**



ACRE and Crop Insurance

- **ACRE not a complete substitute for crop insurance**
 - Historical revenue index vs. “expected” yield/revenue in a given crop year
 - U.S. season average price vs. futures
- **Coverage will overlap**
 - Affect policy type or coverage level choices?



Historical Evaluation

State Trigger

- **Corn**

- State trigger met in 10 out of 31 years (32%)
- Avg. payment over all years = \$17 per planted acre
- Avg. payment when ACRE occurs = \$53 per planted acre

- **Soybeans**

- State trigger is met in 5 out of 31 years (16%)
- Avg. payment over all years = \$6 per planted acre
- Avg. payment when ACRE occurs = \$37 per planted acre



Historical Evaluation Farm Triggers

- **Corn**
 - Between 78% and 86% of farms meet farm trigger with no farmer-paid premium
 - Between 87% and 91% of farms meet farm trigger with \$20 farmer-paid premium
- **Soybeans**
 - Between 81% and 93% of farms meet farm trigger with no farmer-paid premium
 - Between 90% and 98% of farms meet farm trigger with \$20 farmer-paid premium



Historical Evaluation - Corn

Percent of IL FBFM farms receiving payments

Year	ACRE	85% CRC	85% APH
1977	90%	73%	25%
1983	83%	83%	83%
1984	83%	18%	15%
1986	100%	24%	2%
1988	72%	81%	81%
1991	77%	42%	38%
1997	99%	23%	23%
1998	98%	62%	5%
1999	96%	38%	7%
2005	97%	67%	34%



Historical Evaluation - Corn

Percent of IL FBFM farms receiving payment

Year	ACRE	85% CRC	85% APH
1980	0%	50%	50%
1981	0%	30%	3%
1982	0%	48%	2%
1995	0%	49%	49%
2002	0%	25%	25%
2004	0%	57%	1%



Monte Carlo Model

- **IL state-level yields** (Weibull, ML parameters)
- **US MYA prices** (Lognormal)
- **Insurance/Futures prices** (Lognormal)
- **Farm-level yields** (Weibull, iFarm 09)
 - **Low/high risk**
 - **Low/high correlation with state yield**
- **Historical correlation structure imposed**
(Iman and Conover)
- **Various insurance coverage levels**



Results Summary - Corn

- **2009 ACRE price component ~ \$4**
- **Scenario 1: 2009 crop year**
 - \$4/4.04 insurance price
 - \$3.74 expected US MYA price (FAPRI 2009)
- **Scenario 2**
 - \$4/4.04 insurance price
 - \$4 expected US MYA price
- **Scenario 3**
 - \$4.50 insurance price
 - \$4 expected US MYA price



Results Summary - Corn

- **Can assume producer markets at HP (less basis) or at MYA price**
 - **If HP is used, revenue insurance dominates yield insurance**
 - **If MYA is used, revenue insurance still dominates without ACRE**
 - **With ACRE and using MYA price, yield insurance performs slightly better in most cases**



Results Summary

85% (70%) Coverage	Scenario 1		Scenario 3	
	5% cVaR	Min Revenue	5% cVaR	Min Revenue
Low Risk High Corr	APH	APH	APH	APH
Low Risk Low Corr	APH (CRC)	APH	CRC	APH
High Risk High Corr	APH	APH	APH	APH
High Risk Low Corr	APH (CRC)	APH (CRC)	APH (CRC)	APH



Conclusions

- **Coupling ACRE with yield insurance may offer better risk reduction at a lower cost than with CRC**
- **Considerations:**
 - **Farm-state yield correlation**
 - **Assumptions on timing of marketing**
- **Magnitude of effect proportional to:**
 - **Farm yield risk**
 - **Coverage level**



Conclusions

- **Robust across corn/soybean/wheat and correlation/farm risk/price scenarios**
- **Other:**
 - **If ACRE is elected, may be able to reduce coverage level within insurance plans to achieve similar levels of risk reduction**
 - **i.e. 85% CRC + Traditional → 70% CRC + ACRE**
 - **Premium savings will, in general, offset reduction in direct payments**
 - **Depends on level of correlation between farm and state yields**

