2008 FARM BILL: FOCUS ON ACRE
(Average Crop Revenue Election)

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Seminar Outline

1. Provide Background on Policy Evolution of ACRE

2. Describe Key Features of ACRE's Revenue Program

3. Present Results from Analyses
    Historical and Forward Looking

4. Draw Initial Potential Implications

5. Identify Contemporary and Future Policy Research Questions

ACRE includes a new state revenue guarantee program, authorized by *Food, Conservation, & Energy Act of 2008*

Policy Innovations of ACRE's State Revenue Protection Program

ACRE targets revenue (state yield times U.S. price)	**Marketing Loan and Counter-Cyclical Programs target U.S. price**
ACRE's revenue guarantee changes with state yield and U.S. price	**Marketing loan rates and counter-cyclical target prices are fixed**
Farm must have a revenue loss for a crop relative to farm's ACRE benchmark revenue for the crop	**Counter-cyclical and marketing loan payments made if farm has sizeable loss or record income**
ACRE partially coordinated with crop insurance [premium added to farm's ACRE benchmark revenue for crop; ACRE state payment capped at 25% of state guarantee (most insurance is 75% coverage or less)]	**Counter-Cyclical and Marketing Loan programs not coordinated with crop insurance** [can be disincentive to purchase insurance]

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Evolution of ACRE: Policy Process

This slide focuses on the 2008 Farm Bill. Numerous proposals for a revenue farm support program have appeared over the years.

Integrated Farm Revenue Proposal (IFRP)
Carl Zulauf
Basic concepts in *Ohio's Country Journal, p. 12,* 12/2004
Congressional Testimony, 9/21/2006

County Revenue Counter-Cyclical Proposal
Bruce Babcock and Chad Hart
Iowa Ag Review, Spring 2005, Vol. 11, No. 2, pp. 1-3, 11
Congressional Testimony, (9/21/2006)

American Farmland Trust
American Farmland Trust adopts IFRP in its
*Agenda 2007: A New Framework and Direction
for U.S. Farm Policy*, 5/2006.

National Corn Growers Association
*Public Policy Action Team Proposes a county revenue
countercyclical program* and farm-level base revenue
protection program, 10/19/2006.

Average Crop Revenue (ACR) Program
(1) Senators Richard Durbin, Illinois, and Sherrod Brown, Ohio, propose state-level ACR in S. 1872, 7/25/07.
(2) ACR included in Chairman Senator Tom Harkins' mark of Senate's farm bill.
(3) Senate Committee on Agriculture, Nutrition, and Forestry adopts ACR with modifications (Senator Pat Roberts' amendment).
(4) ACR as amended remains in the Senate Farm Bill passed on 12/14/07.

Average Crop Revenue Election (ACRE) Program
(1) Conference Committee includes ACRE in *Food, Conservation, and Energy Act of 2008* (agreement 5/8/2008).
(2) Second veto override of H.R. 2419 occurs on 6/19/2008, completing action on 2008 Farm Bill.

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Evolution of ACRE: Comparison with Integrated Farm Revenue Policy Concepts

Policy Concept in Integrated Farm Revenue Proposal	**Policy Concept in ACRE**
Revenue instead of price support program	**Revenue** instead of price support program
Revenue target market oriented (not fixed) changes each year with product of (a) harvest futures price and (b) U.S. trend-line yield	**Revenue target market oriented (not fixed)** changes each year with product of (a) 2-year moving average of U.S. cash price and (b) 5-year Olympic moving average of state yield
Objective is to help farmers manage systemic revenue risk Specifically, planting-to-harvest declines in U.S. revenue associated with crop production	**Objective is to help farmers manage systemic revenue risk** Specifically, short-term declines in state revenue associated with crop production
Revenue support program integrated with crop insurance to remove systemic revenue risk from insurance products	**Integration removed** (Senator Roberts' amendment), but **elements of coordination with crop insurance** included in ACRE

Beginning with 2009 Crop Year, Choice of

(1) *Traditional Suite of Programs*	(2) *ACRE Suite of Programs*
Marketing Loan	Marketing Loan at 70%
Direct Payment	Direct Payment at 80%
Price Counter-Cyclical	ACRE State Revenue Program

ACRE's per acre state revenue guarantee for a crop

[(90%) times   (moving average of U.S. crop year cash price
                     for 2 most recent years)
          times   (Olympic moving average of state's yield
                     for 5 most recent years)]

Revenue guarantee cannot change more than 10% from prior year.

ACRE Farmer Decision

CENTRAL QUESTION: **Does ACRE's state revenue guarantee program improve management of revenue risk enough compared to the price counter-cyclical program to compensate for a 20% reduction in direct payments and 30% reduction in marketing loan rates?**

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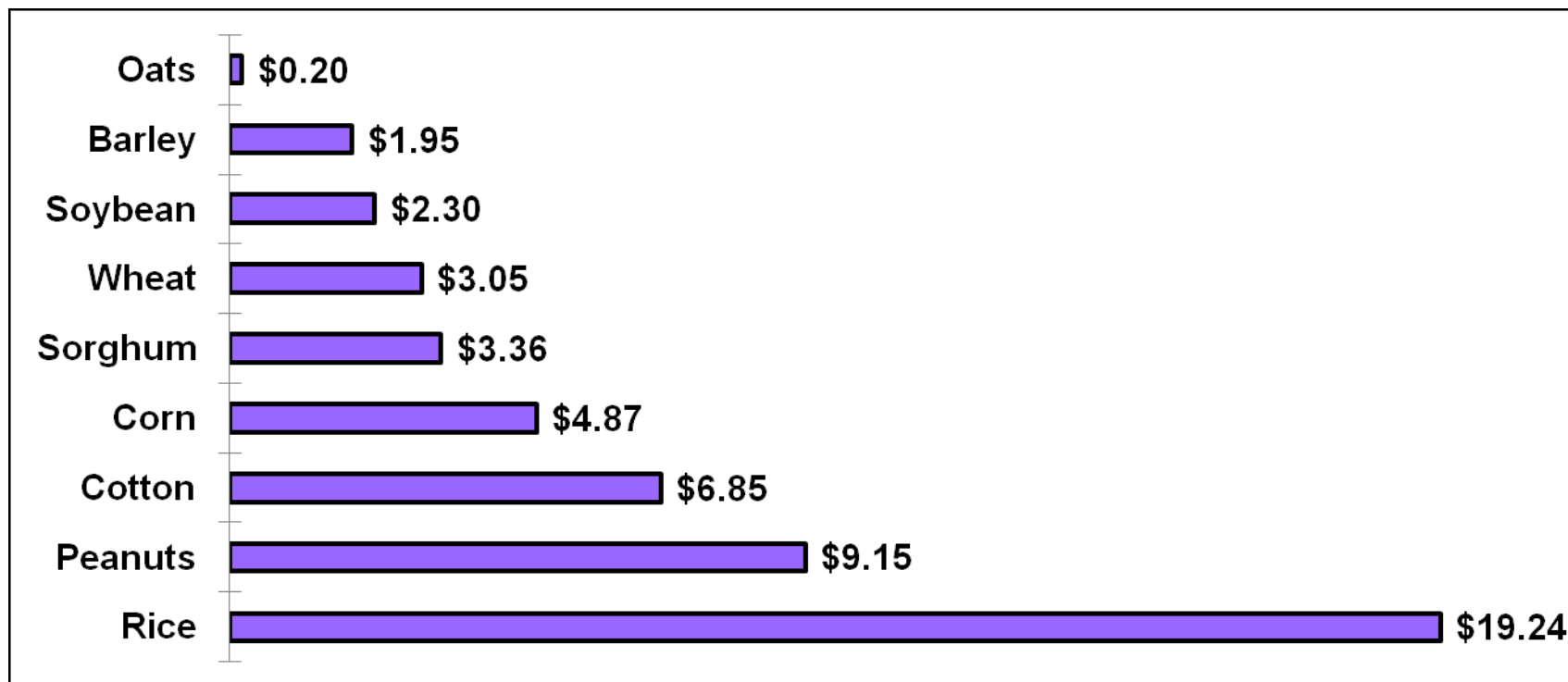### *Why ACRE State Revenue Improves Risk Management Relative to Counter-Cyclical*

Revenue vs. Price

Updated Price vs. Fixed Price

Updated State Yield vs. U.S. Fixed Historical Yield

Payment Based on Planted Acres (up to Farm's Total Base Acres) vs. Historical Base Acres by Crop

</div>

20% of Average U.S. Direct Payment Per Base Acre

**Direct payment reduction can be considered an ACRE risk management fee.**

Calculation is made using data from the U.S. Department of Agriculture.

Comparison of Market and Policy Parameters

Crop	Planted Acres U.S. 2006-08	Base Acres U.S. 2003		Average Olympic Yield U.S. 2004-08	Counter-Cyclical Yield U.S. 2003		Average Cash Price U.S. 2006-07	Effective Target Price U.S. 2010		Revenue Protection			Cash Cost Ex Land Ohio 2009
										ACRE	Counter-Cyclical		
Corn	86 million	88 million		150.8/ acre	114.3/ acre		$3.62/ bushel	$2.35/ bushel		$546/ acre	$269/ acre		$2.87/ bushel
Soy-beans	71 million	53 million		42.0/ acre	34.1/ acre		$8.29/ bushel	$5.56/ bushel		$348/ acre	$190/ acre		$5.13/ bushel
Wheat	60 million	76 million		41.9/ acre	36.1/ acre		$5.37/ bushel	$3.65/ bushel		$225/ acre	$132/ acre		$4.21/ bushel

NOTES: (1) An Olympic yield removes the highest and lowest value; ACRE's yield calculation is over 5 most recent years. (2) Determination of which 2 years to average to calculate ACRE's revenue guarantee is a subject of debate. I present the most conservative (lowest) price alternative. (3) Effective target price equals the target price minus the direct payment rate per bushel. (4) Revenue protection for ACRE equals [average cash price times average Olympic yield]. (5) Revenue protection for counter-cyclical program equals [counter-cyclical yield times effective target price].

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Prices for U.S. Crop Production Inputs and Crops are Increasing … Just as in 1970s
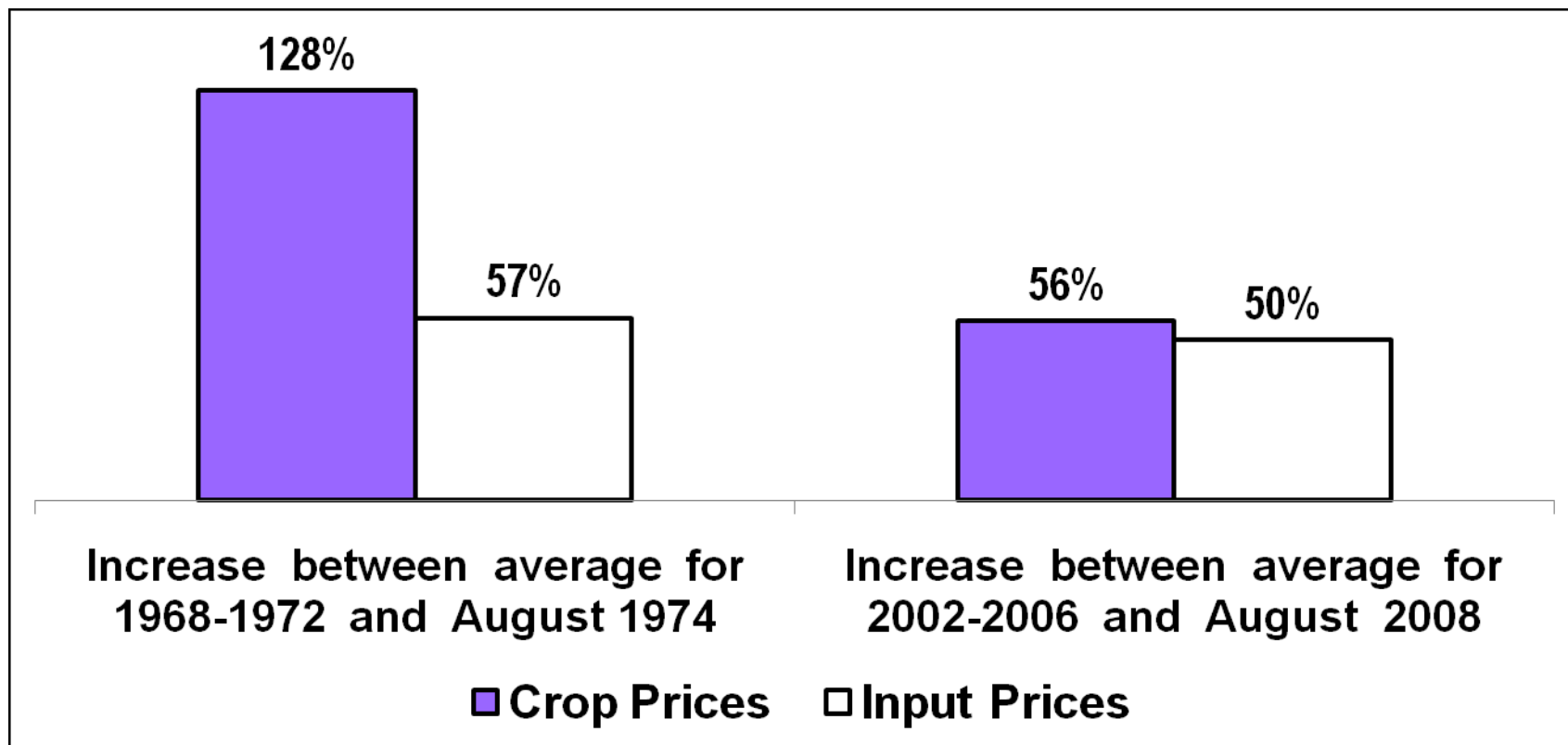
Notes: (1) Crop prices include all crops. (2) Crop production inputs include interest, taxes, and wages. (3) Source: U.S. Department of Agriculture, National Agricultural Statistics Service
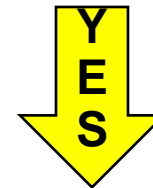
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ACRE Per Acre Revenue Payment Schematic

Is State's Revenue Less Than State's ACRE Revenue Guarantee?

Is Farm's Revenue Less Than Farm's ACRE Benchmark Revenue?

Y E S

Both must be YES

Y E S

Per Acre State Revenue Payment For Crop

83.3% [becomes 85% for 2012 crop]   times   smaller of
[ACRE state revenue guarantee minus state actual revenue]
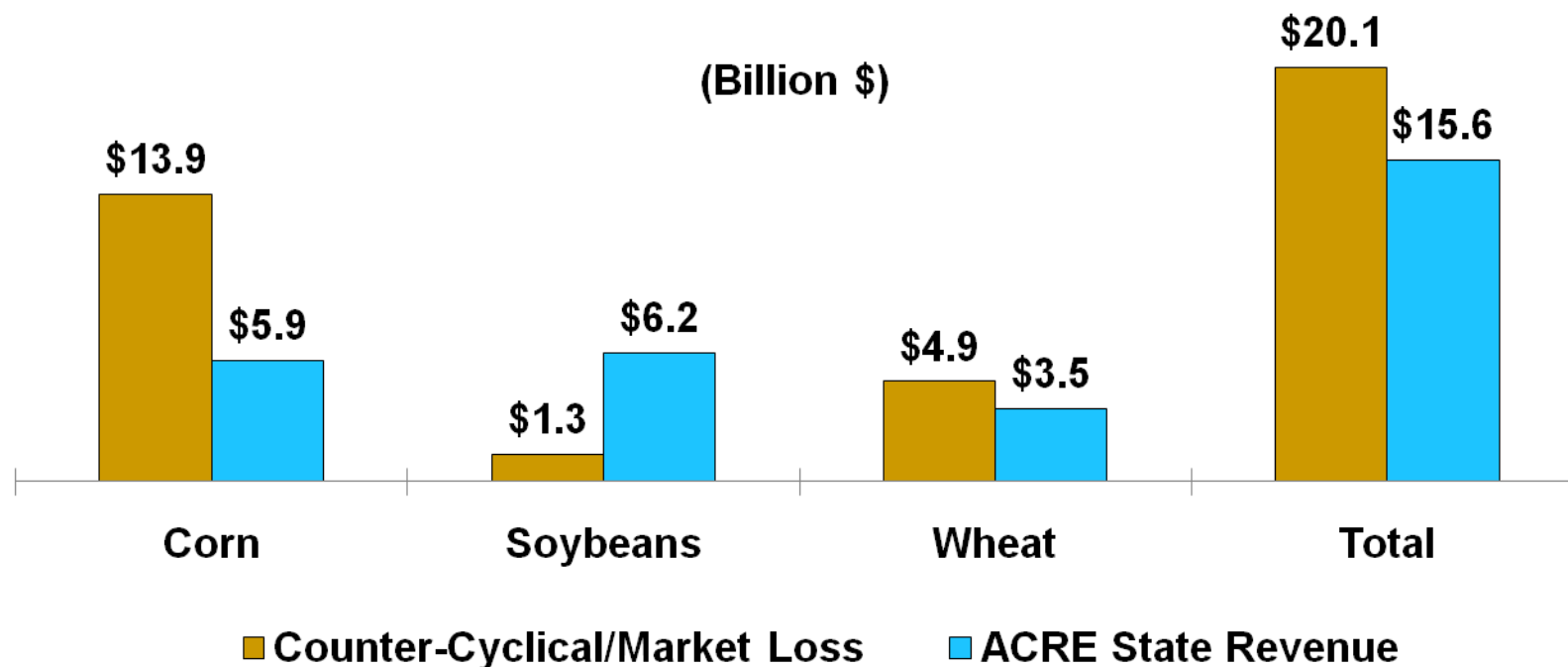or   [25% of ACRE state revenue guarantee]
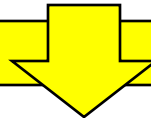
Adjustment to   **Farm Payment Rate**

Per Acre Individual Farm Payment For Crop

State's per acre payment rate   times
Ratio: {[farm's 5-year Olympic average yield (high and low yield removed)]
divided by   [state's 5-Year Olympic average yield]}

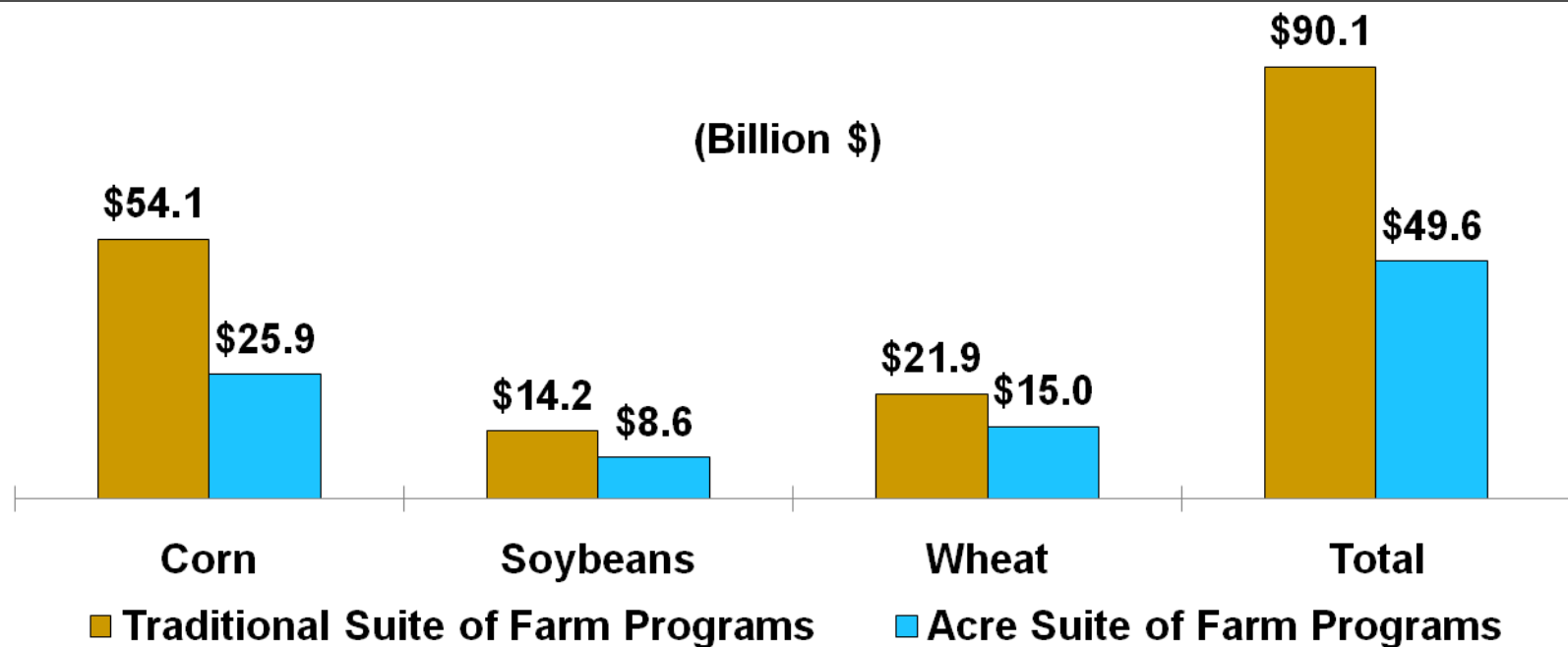THE OHIO STATE UNIVERSITY
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Expenditures on Market Loss and Counter-Cyclical Programs vs. ACRE State Revenue Guarantee Program, 1996-2006 Crop Years
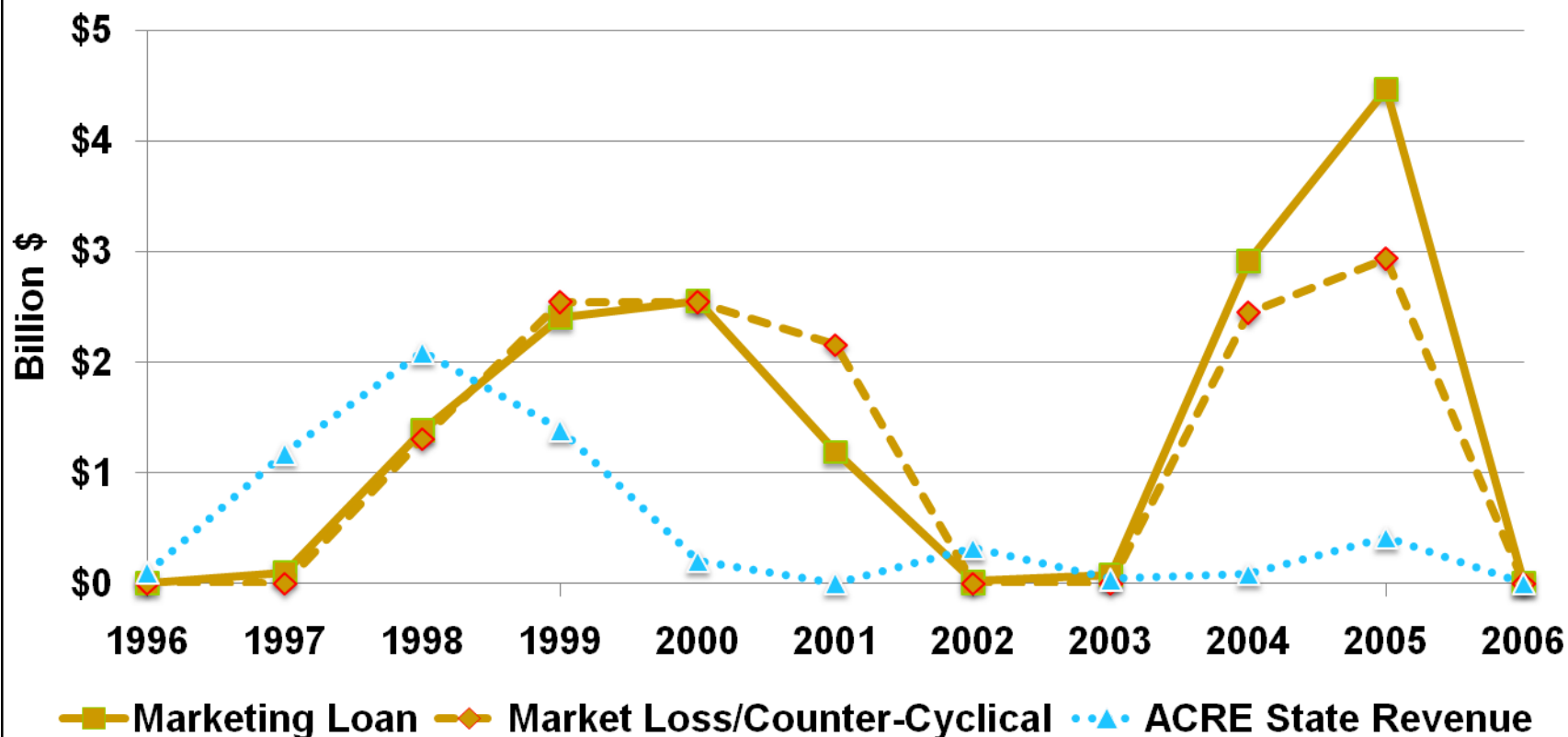[ACRE payments calculated using moving averages with immediate past crop year.]

Sources: ACRE state revenue guarantee payments are original estimates. Payments for other programs are actual payments reported by the U.S. Department of Agriculture, Farm Service Agency (available at http://aede.osu.edu/resources/docs/display.php?cat=21)

Expenditures on Traditional Suite of Farm Programs vs. ACRE Suite of Farm Programs, 1996-2006 Crop Years

(Billion $)

Corn — Traditional Suite of Farm Programs: $54.1, Acre Suite of Farm Programs: $25.9
Soybeans — Traditional Suite of Farm Programs: $14.2, Acre Suite of Farm Programs: $8.6
Wheat — Traditional Suite of Farm Programs: $21.9, Acre Suite of Farm Programs: $15.0
Total — Traditional Suite of Farm Programs: $90.1, Acre Suite of Farm Programs: $49.6

■ Traditional Suite of Farm Programs   ■ Acre Suite of Farm Programs

Notes: (1) Traditional suite of farm programs is direct payments, marketing loan, and price counter-cyclical program. (2) ACRE suite of farm programs is 80% of direct payments, marketing loan at 70% of the loan rate, and state revenue guarantee program. (3) Sources: ACRE state revenue guarantee payments are original estimates. Payments for other programs are actual payments reported by the U.S. Department of Agriculture, Farm Service Agency (available at http://aede.osu.edu/resources/docs/display.php?cat=21)

Expenditures on Marketing Loan, Market Loss/Counter-Cyclical, and ACRE State Revenue Programs by Crop Year, Corn, 1996-2006

Sources: ACRE state revenue guarantee payments are original estimates. Payments for other programs are actual payments reported by the U.S. Department of Agriculture, Farm Service Agency (available at http://aede.osu.edu/resources/docs/display.php?cat=21)

Breakeven Price Between ACRE and Traditional Suites of Farm Programs, Average for 26 States

Includes direct, marketing loan, price counter-cyclical, and ACRE revenue payments

Bar chart showing breakeven prices:
- Corn: $2.87
- Soybeans: $6.35
- Wheat: $4.39
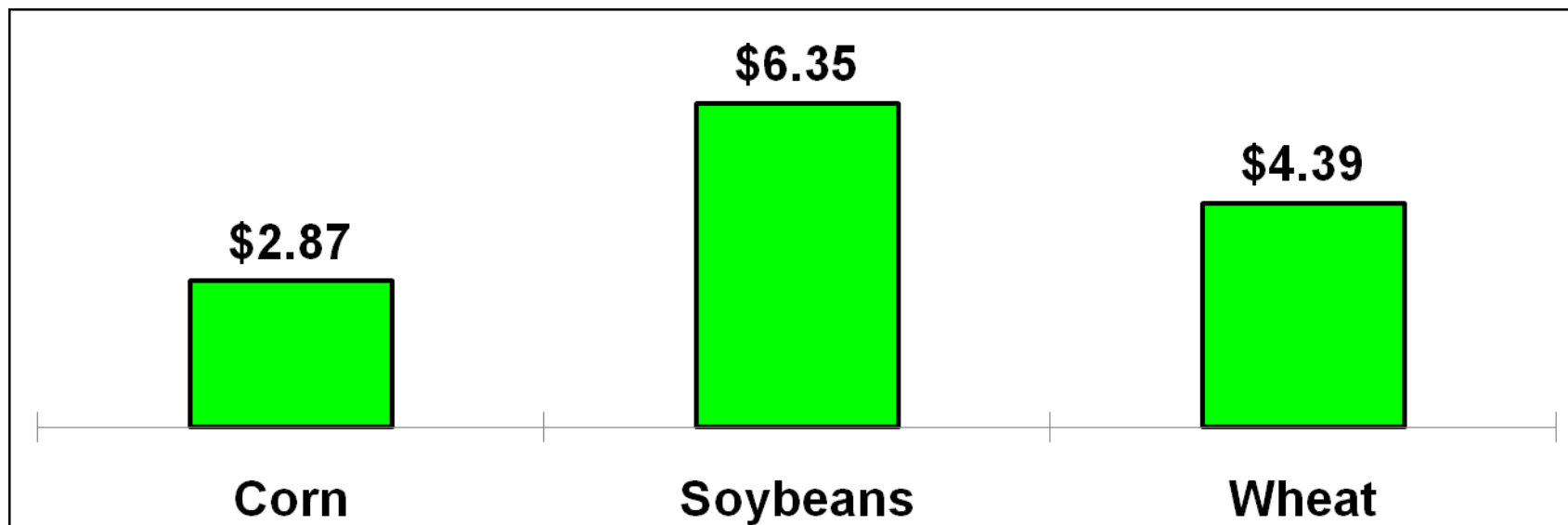
If U.S. cash price is expected to average above breakeven price through 2012 crop, <u>expected payments</u> from ACRE are higher despite its lower direct payments.

Actual payments from ACRE revenue program may be zero even if market price is above the breakeven price.

For details on this analysis see Carl Zulauf, "Understanding ACRE: Breakeven Price With Traditional Programs, Corn, Soybeans, Wheat," (AEDE-RP—0109-08), June 2008, available at http://aede.osu.edu/resources/docs/display.php?cat=21

A Reason for Consecutive Year ACRE Payments is 10% Limit on Year-to-Year Change in Guarantee

Share of Years ACRE Cup/Cap Effective, 26 State Average

| Corn	Soybeans	Wheat
48%	49%	58%
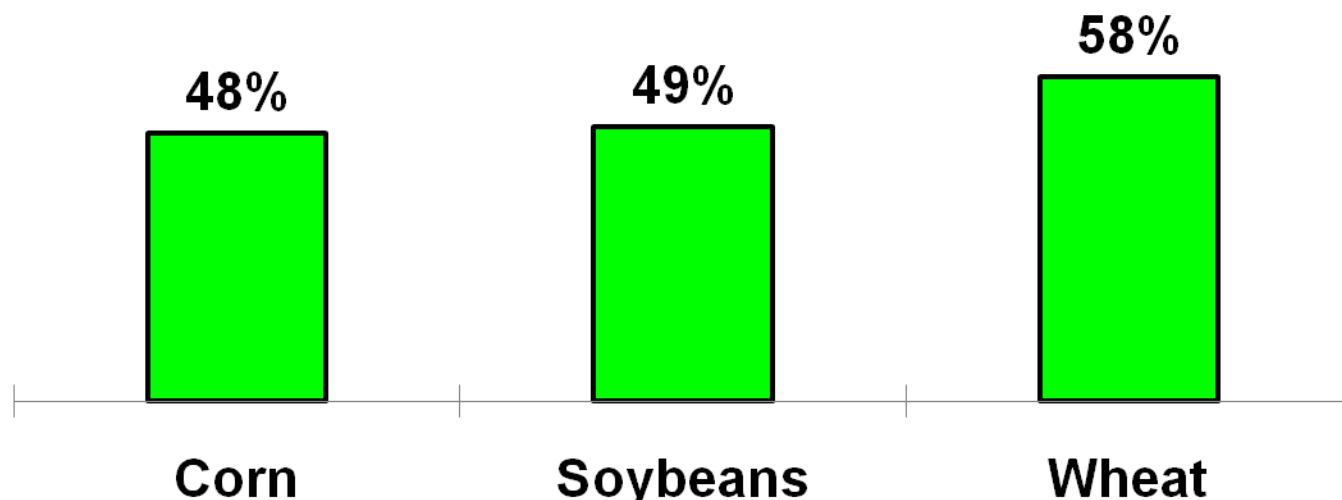
Cup is the name for a 10% limit on declines in ACRE revenue guarantee from prior year's guarantee. Cap is the name for a 10% limit on increases in ACRE revenue guarantee from prior year's guarantee.

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State Yield Declines Were an Important Trigger for ACRE Payments

Share of Years with ACRE Revenue Payment That Also had a State Yield Decline of 10% or More, Average for 26 States
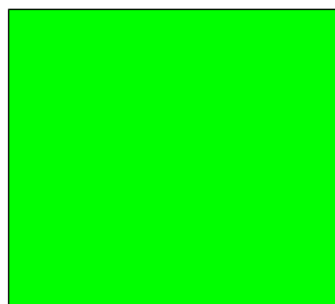
	Corn	Soybeans	Wheat
	49%	50%	61%
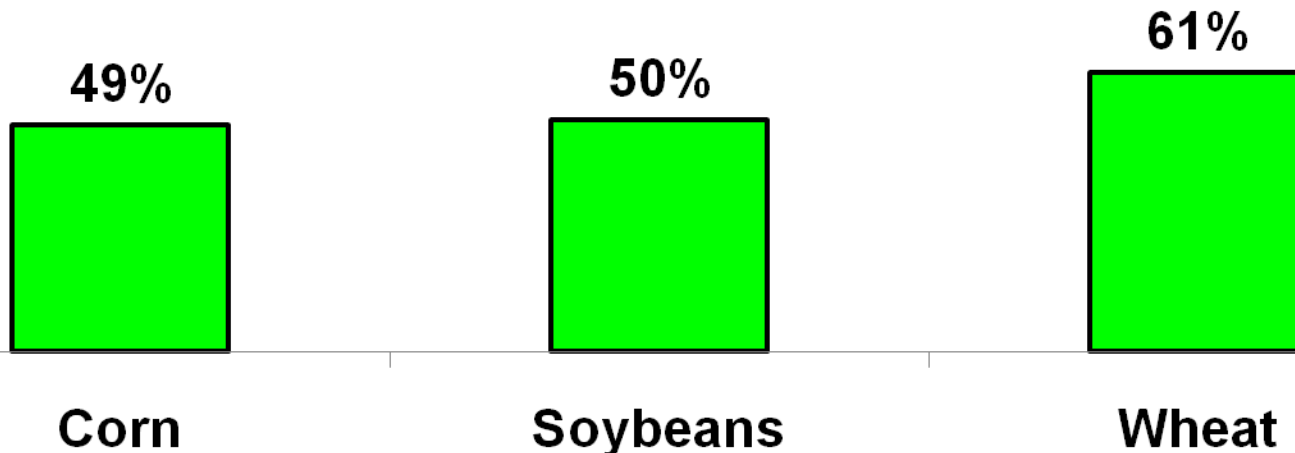
An ACRE payment was made in approximately two-thirds of the years in which state yield declined by 10%.

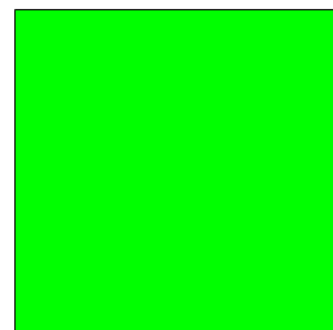# Indicator of Overlap of ACRE Double Triggers

Share of Years in which Individual Illinois Farm Yield Declined and in which Illinois Average Yield Declined by 10%, 1996-2006

- Corn: 81%
- Soybeans: 88%

ACRE has a double trigger that must be met before a payment is made:
(1) State realized revenue for crop is less than 90% of state's ACRE revenue guarantee
(2) Farm realized revenue for crop is less than farm's ACRE expected revenue

Source for farm data is Illinois Farm Business Farm Management project. Data set is 552 farms with corn and soybean acres each year from 1996 through 2006. Year-to-year change is measured as (In change).

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Change in State Yield Explained a Small Share of Change in Yield on Individual Illinois Farms

Average Share of Year-to-Year Change in Farm Yield Explained by Year-to-Year Change in State Yield, Illinois, 1996-2006
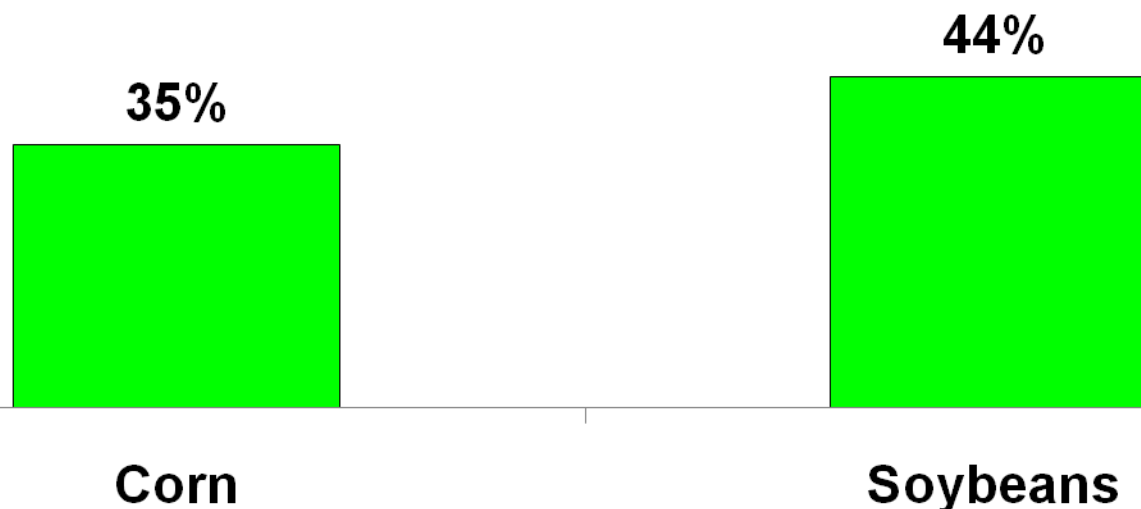
Corn: 35%

Soybeans: 44%

Source for farm data is Illinois Farm Business Farm Management project. Data set is 552 farms with corn and soybean acres each year from 1996 through 2006. Year-to-year change is measured as (ln change).

ACRE: Some Initial Thoughts on Implications

1. ACRE provides risk protection against revenue declines that extend beyond crop insurance's planting-harvest period.
   (a) Should encourage short-term, multiple year investments, such as potassium and phosphorus application.

2. ACRE is most likely to benefit:

   (a) Farmers whose planted and base acres differ substantively
   (b) States with higher yield variation
       (includes southeast & mid-Atlantic states)
   (c) Crops with prices well above loan rates
       (cotton and peanuts closest to loan rate)
   (d) States with lower negative correlations between changes in state yield and U.S. price (revenue variability is higher)
   (e) States and crops, notably corn, with larger increases in yields

ACRE: Some Initial Thoughts on Implications

3. ACRE is a poor substitute for crop insurance. A farmer who elects ACRE should carefully consider purchasing crop insurance to help manage the production risks associated with his/her farm.

4. ACRE's expected payment (not maximum or actual payments) should be capitalized into the value of land.

5. Because ACRE does not provide a floor, farmers will have to adjust to lower market revenues although their adjustment time is lengthened.

6. While ACRE likely will be classified as amber box under World Trade Organization guidelines, its distortion of trade is limited by the fact that its payments approaches zero within a few years.

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Contemporary and Future Policy Research Questions

1. What are price correlations across years (time path tendencies)?
   * What are the short and intermediate term elasticities of supply in a freedom-to-plant world?
   * What are the short and intermediate term elasticities of demand when food is not the only use of farm crops?

2. What is the interface between crop insurance, farm support programs, and the supplemental revenue assistance program?
   * What type of integration between insurance and support programs is optimal?

3. What is the share of farm risk that is systemic and idiosyncratic?
   * What are the correlations between yields and revenue at the farm and higher aggregation levels: county, state, U.S.?

4. What are the World Trade Organization implications of ACRE?

5. What are farmers' risk and policy tool preferences?

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ACRE Mechanics: Thumbnail Sketch

ACRE is a crop specific, state revenue risk management program.

To receive an ACRE payment, 2 triggers must be met:

(1) **State's realized revenue (state yield times U.S. market year cash price for crop year) is less than state's revenue guarantee for crop.**
  (a) ACRE's per acre state revenue guarantee for a crop is: [(90%) <u>times</u> (moving average of U.S. crop year cash price for 2 most recent years) <u>times</u> (Olympic moving average of state's yields for 5 most recent years)].
   * Revenue guarantee cannot change more than 10% from prior year's guarantee
   * ACRE's payment is capped at 25% of state revenue guarantee
  (b) State revenue payment is adjusted to individual farm by yield ratio

(2) **Individual farm's revenue for crop less than its ACRE benchmark revenue.**
  (a) Farm's actual revenue for crop is: farm's actual yield <u>times</u> U.S crop year price
  (b) Farm's ACRE benchmark revenue for crop is: [(Olympic average of farm's yields for 5 most recent years) <u>times</u> (moving average of U.S. crop year cash price for 2 most recent years)] <u>plus</u> (per acre insurance premium paid by farmer for crop)

Payment based on acres planted to crop, but ACRE payments cannot be received on more than farm's total base acres.

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Appendix: Brief Outline of Analytical Parameters of the Breakeven Price Analysis

(1) Breakeven price is an average of the weighted average breakeven price derived from two analyses, both involving 26 states and using data for 1974-2006 crop years. One analysis used (a) percent deviation for a state's yield for a year from its trend-line yield estimated using linear regression and (b) percent deviation of U.S. price for a year from the average price for 1974-2006. The second analysis used (a) percent ratio of a state's yield for a year relative to the state's average yield for 1974-2006 and (b) percent deviation of U.S. price for a year from the average price for 1974-2006. A weighted average breakeven price was calculated for both analyses. The weight was the state's share of acres planted to the crop in the 26 states in 2006-08. The 26 states accounted for 94%, 96%, and 83% of U.S. acres planted to corn, soybeans, and wheat, respectively, in 2006-08. The yield distribution was centered on the average yield used by the Congressional Budget Office for 2009–12.

(2) The data for historical prices, yields, and acres are from the U.S. Department of Agriculture.

(3) Program parameters are from 2008 Farm Bill. Marketing loan and price counter-cyclical prices are for 2010-12. The 83.3% payment factor is used. Planted acres are assumed to sum to base acres.

(4) The calculation for ACRE does not include separate programs for irrigated and dryland acres when at least 25% of a state's acres are irrigated and at least 25% are in dryland production.

(5) No adjustment was made for the change in calculating loan deficiency payments: a 30-day moving average of cash prices replaces a single day's cash price.

SOURCE: Carl Zulauf., "Understanding ACRE: Breakeven Price With Traditional Programs, Corn, Soybeans, Wheat," AEDE-RP—0109-08, June 2008, **available at http://aede.osu.edu/resources/docs/display.php?cat=21**

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