Is ACRE Program Participation During the 2012 Farm Bill Likely to Pay Off for Arkansas Producers? Preliminary Evidence from the Representative Panel Farms Framework

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Average Crop Revenue Election (ACRE) Program

- A novel “shallow loss” program in the 2008 Farm Bill
- An optional and voluntary revenue support counter-cyclical program available starting in 2009
- Once enrolled, producers:
  - [1.] Were ineligible for counter-cyclical payments (CCPs)
  - [2.] Had their direct payments (DPs) reduced by 20%
  - [3.] Had their loan rates reduced by 30%
  - [4.] Had to remain enrolled throughout the 2008 Farm Bill

ACRE Program Cont'd

- Two triggers had to be met for ACRE payments to be made:
  [1.] *Actual State revenue<ACRE State revenue guarantee*
  [2.] *Actual farm revenue<ACRE farm benchmark revenue*
- When both triggers were met, the total program payment for the crop of interest=

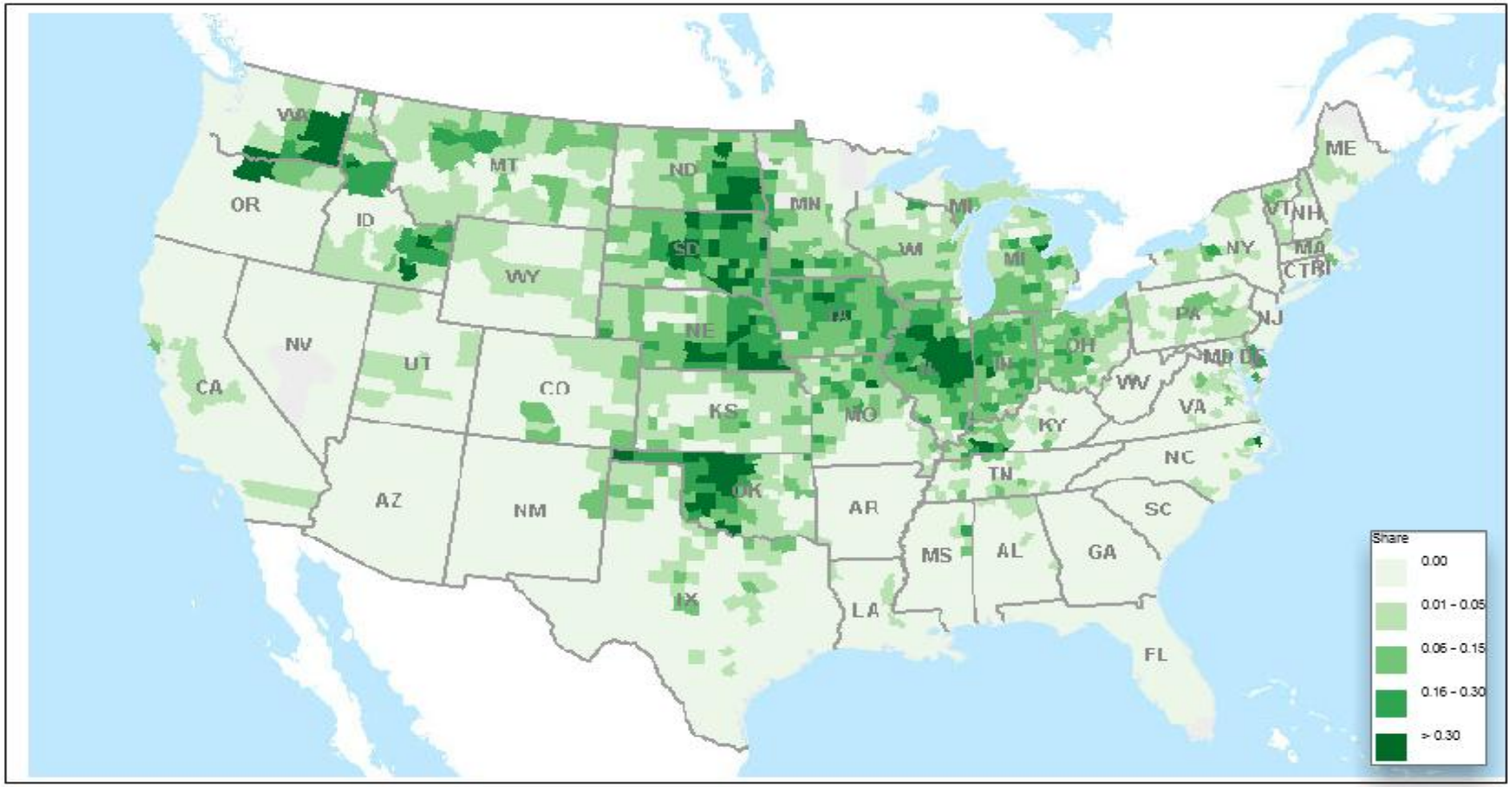
  ACRE payment rate/planted acre*83.3% of the farm-specific actual (or considered) planted acres for the years 2009-2011 (85% in 2012)**farm-specific productivity ratio*
- Hignight et al. (2008): ACRE participation is expected not to be profitable for Arkansas representative panel farms during 2008-2012

Program Impacts

- Low participation rates nationally (8% of eligible farms in the 2009 crop year)
- Low participation rates in Arkansas as well due to:
  - [1.] DPs being of a critical importance to the subsistence of Arkansas farms
  - [2.] The fact that both triggers had to be met
  - [3.] Adverse selection being an issue
  - [4.] Complicated program structure/rules
  - [5.] The fact that payments were made late after harvest
  - [6.] The decision to participate was irrevocable

Program Participation

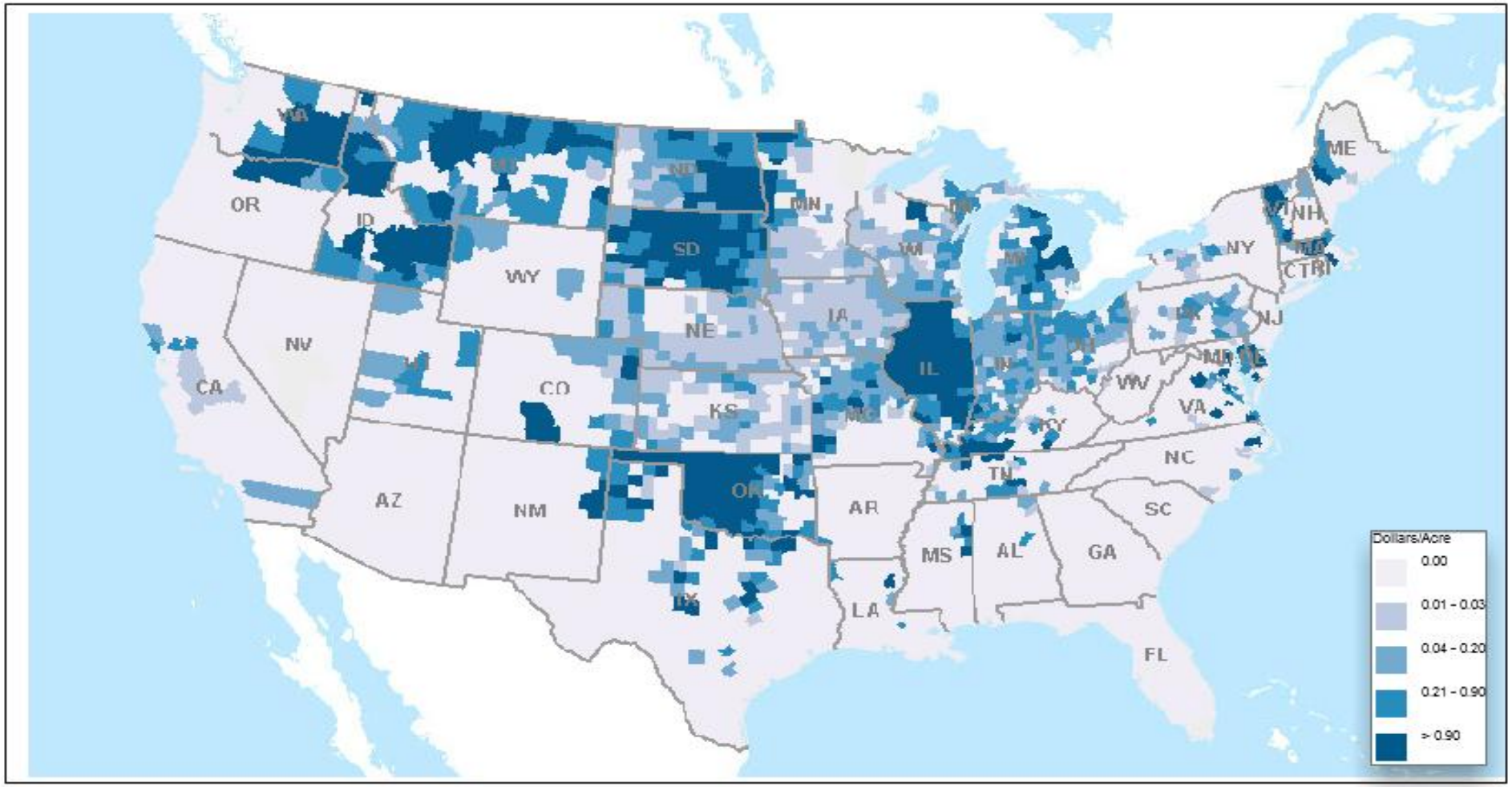
Figure 1: Total ACRE Enrolled Base per Cropland Acre (2009), by County



Source: ERS/USDA Farm Program Atlas, 2012

Program Payments

Figure 2: Total ACRE Payments per Cropland Acre (2009), by County



Source: ERS/USDA Farm Program Atlas, 2012

Goal and Objective

- **Goal**: *to assist Arkansas producers in making better informed decisions regarding participation in Federal agricultural programs during the 2012 Farm Bill*
- **Objective**: *to assess the impact on Arkansas producers of participation in the ACRE program during the 2012 Farm Bill (assuming a full program continuation)*

Scenarios

- [1.]: *What is the probability of receiving an ACRE payment during 2012-2016 on a by farm, crop and year basis?*
- [2.]: *Does it pay off for Arkansas farmers to participate in the ACRE program during 2012-2016?*

Methods

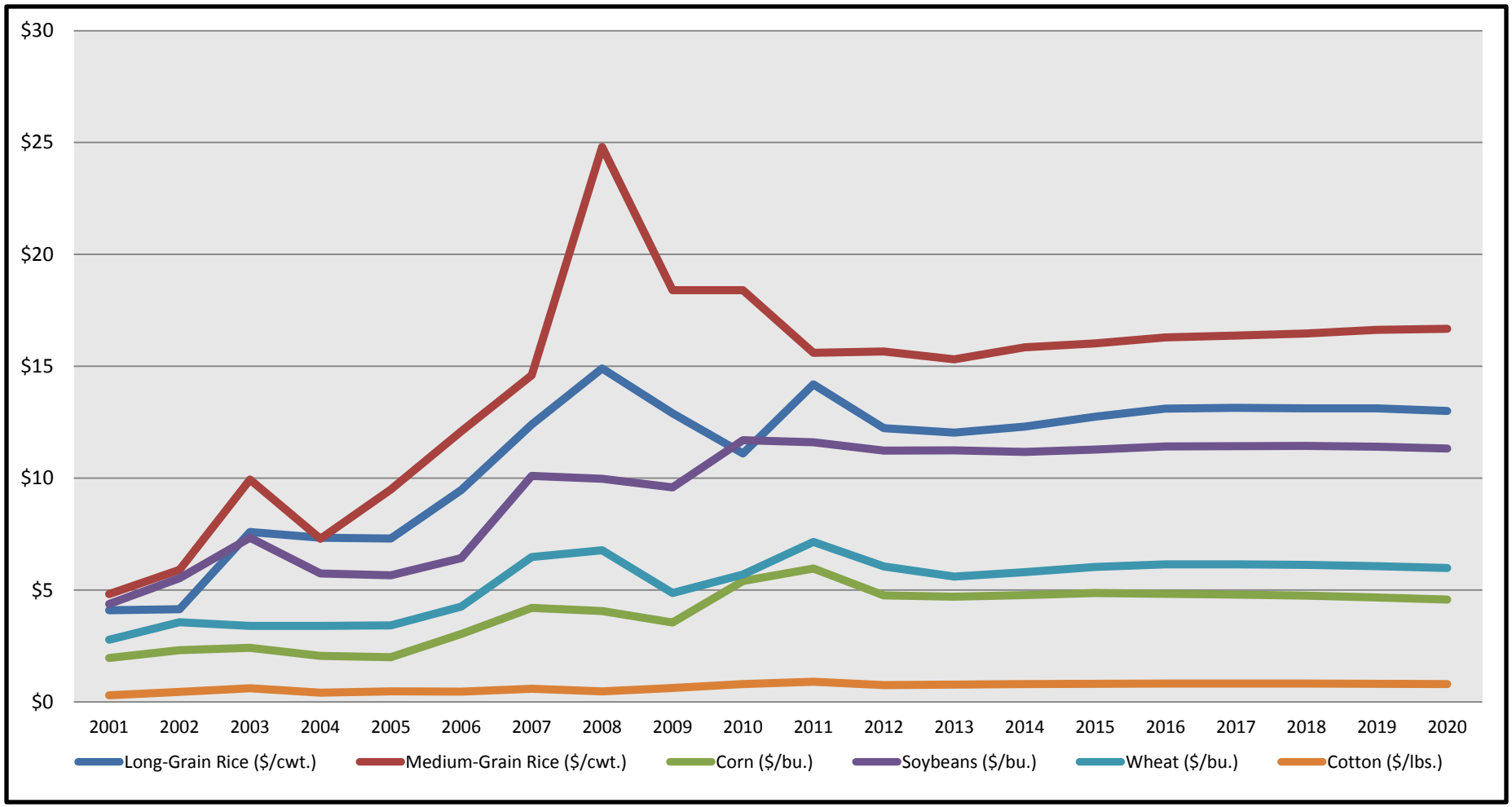
- Arkansas Representative Panel Farms Framework
- Following Richardson, Klose and Gray (2000), an empirical procedure for developing multivariate empirical probability distributions is employed
- Simetar is used to simulate stochastic baseline five-year projections for the period 2012-2016 with 500 iterations/variable/year for:
  a) national and world crop prices
  b) farm-specific yields
  c) state-specific yields
  d) farm expenses (diesel fuel, fertilizer and electricity)

Data

- Representative farms are developed by the Arkansas Cooperative Extension Service and the Agricultural Food and Policy Center (Texas A&M University)
- Every two-three years, economists work with panels of farmers to update and/or construct new representative farms sharing common features with farms of a certain geographical location
- Information such as planted acreage, crop mix, land tenure arrangements, participation in Federal programs, base acreage, historical yields, assets and expenses is collected
- Other data sources: FAPRI-MU; USDA/ERS; USDA/NASS

Price Environment

Figure 3: Historical (2001-2010) and Projected (2011-2020) Average National Crop Prices, in $ U.S.



Sources: USDA; FAPRI-MU (February, 2012)

Arkansas Representative Panel Farms

Table 1: Arkansas Representative Panel Farms Characteristics

Location	**Wynne**	**Hoxie**	**Stuttgart**	**Leachville**	**McGehee**
County	Cross	Lawrence	Arkansas	Mississippi	Desha
	----------*Planted Acres*----------				
Rice	700	1,450	1,620	0	1,875
Soybeans	700	1,250	1,296	0	1,625
Cotton	0	0	0	5,000	1,500
Corn	0	300	0	0	1,500
Wheat	0	0	324	0	1,000
Total	**1,400**	**3,000**	**3,240**	**5,000**	**7,500**

Stochastic Results: Scenario [1.]

Table 2: Average Annual Percentage Probabilities of Receiving an ACRE Payment (2012-2016), by Farm and Crop

Crop	Stuttgart	Wynne	Leachville	Hoxie	McGehee
Long-Grain Rice	32	31	_____	28	30
Irrigated Soybeans	31	25	_____	21	_____
Wheat	28	_____	_____	_____	28
Dryland Soybeans	_____	26	_____	25	_____
Irrigated Cotton	_____	_____	32	_____	28
Dryland Cotton	_____	_____	32	_____	_____
Medium-Grain Rice	_____	_____	_____	35	_____
Corn	_____	_____	_____	40	40
Full-Season Soybeans	_____	_____	_____	_____	28
Double-Crop Soybeans	_____	_____	_____	_____	30

Stochastic Results: Scenario [2.]

Table 3: Average Annual ACRE Payments/Acre (2012-2016), by Farm and Crop (in $ U.S.)

Crop	Stuttgart	Wynne	Leachville	Hoxie	McGehee
Long-Grain Rice	28	29	_____	26	29
Irrigated Soybeans	15	15	_____	12	_____
Wheat	12	_____	_____	_____	12
Dryland Soybeans	_____	9	_____	7	_____
Irrigated Cotton	_____	_____	33	_____	34
Dryland Cotton	_____	_____	25	_____	_____
Medium-Grain Rice	_____	_____	_____	43	_____
Corn	_____	_____	_____	48	53
Full-Season Soybeans	_____	_____	_____	_____	17
Double-Crop Soybeans	_____	_____	_____	_____	14

Stochastic Results: Scenario [2.] Cont'd

Table 4: 2012-2016 Annual Average Net Farm Income, in $/Acre (by Farm)*

Farm Location	Wynne	Hoxie	Stuttgart	Leachville	McGehee
	Annual Average (2012-2016), in $/acre				
Market Receipts	**660**	**675**	**551**	**929**	**743**
DPs (ACRE)	42	41	38	16	28
LDPs (ACRE)	0	0	0	0	0
Weighted ACRE Payments (ACRE), by Planted Acres	21	23	21	33	28
Total Government Payments (ACRE)	**64**	**64**	**59**	**49**	**56**
Total Receipts (ACRE)	**724**	**739**	**610**	**978**	**799**
DPs (BASE)	53	51	47	20	35
LDPs (BASE)	0	0	0	0	0
CCPs (BASE)	0	0	0	0	0
Total Government Payments (BASE)	**53**	**51**	**47**	**20**	**35**
Total Receipts (BASE)	**713**	**726**	**598**	**949**	**778**
Total Cash Expenses	672	649	469	737	642
Depreciation	167	49	61	60	61
Net Farm Income (ACRE)	**-115**	**41**	**80**	**181**	**96**
Net Farm Income (BASE)	**-126**	**28**	**68**	**152**	**75**
Expected Difference (ACRE-BASE)	*11*	*13*	*12*	*29*	*21*

*note: Under BASE participation, farmers receive DPs, CCPs and LDPs, and do not participate in the ACRE program.

Conclusions and Expectations

1) The probabilities of receiving an ACRE payment during 2012-2016 are low.
2) Across all crops, the highest ACRE payments/acre on average during 2012-2016 are received for corn and medium-grain rice.
3) Among all farms, as an annual average, the Leachville farm receives the highest ACRE payments/acre during 2012-2016.
4) Overall, ACRE participation pays off across all farms during the 2012 Farm Bill.
5) It remains unclear whether a producer should participate in ACRE, and the decision to do so should be examined carefully by each producer individually. The main reason for this is that a certain level of uncertainty exists in terms of yield and price variation at the farm and State level.
6) Due to the strong projected price environment by FAPRI-MU, it is likely that farmers would have a greater incentive to participate during 2012-2016.
7) ACRE is likely to be replaced in the 2012 Farm Bill with a program that addresses “shallow revenue losses” on a county-wide basis and complements crop insurance products (e.g., STAX).

The End

- Questions?
- Comments?
- Suggestions?

ACRE Program Term Definitions

- *Actual State revenue*=actual State yield/planted acre*the greater of the national average market price and 70% of the loan rate
- *ACRE State revenue guarantee*=90% of the five-year Olympic average of actual State yields (drops the lowest and highest value)*the average of the national price for the past two years. For 2010-2012, the *ACRE State revenue guarantee* cannot change (increase or decrease) for more than 10% from its previous year's value
- *Actual farm revenue*=actual farm yield/planted acre*the greater of the national average market price and 70% of the loan rate
- *ACRE farm benchmark revenue*=[five-year Olympic average of actual farm yields (drops the lowest and highest value)*the average national price for the past two years]+the per acre crop insurance premium
- *ACRE payment rate*/planted acre=the lower of the difference between the *ACRE State revenue guarantee* and the *actual State revenue* and 25% of the *ACRE State revenue guarantee*
- *Farm-specific productivity ratio*=5-year Olympic average farm crop yield per planted acre/ACRE benchmark State yield

Arkansas Representative Panel Farms Characteristics

Farm Name	**ARHR3000**	**ARNC5000**	**ARC7500**	**ARHR3240**	**ARWR1400**
Location	Hoxie	Leachville	McGehee	Stuttgart	Wynne
County	Lawrence	Mississippi	Desha	Arkansas	Cross
Acres Owned	1,000	1,000	1,200	648	420
Acres Under Crop Share Lease	1,500	3,200	5,985	1,552	490
Acres Under Cash Lease	500	800	315	1,040	490
Cash Rent for Land ($/acre)	100	125	130	100	100
Planted Acres	**3,000**	**5,000**	**7,500**	**3,240**	**1,400**
Medium Grain Rice	150	0	0	0	0
Long Grain Rice	1,300	0	1,875	1,620	700
Irrigated Soybeans	1,125	0	1,625	1,296	650
Full-Season Irrigated Soybeans	*0*	*0*	*1,625*	*0*	*0*
Double-Crop Irrigated Soybeans	*0*	*0*	*750*	*0*	*0*
Dryland Soybeans	125	0	0	0	50
Corn	300	0	1,500	0	0
Irrigated Cotton	0	4,750	1,500	0	0
Dryland Cotton	0	250	0	0	0
Wheat	0	0	1,000	324	0
Base Acres					
Medium Grain Rice	175	0	0	0	0
Long Grain Rice	1,575	0	2,375	1,620	700
Irrigated Soybeans	1,125	0	2,585	1,296	650
Full Season Irrigated Soybeans	*0*	*0*	*2,585*	*0*	*0*
Double Crop Irrigated Soybeans	*0*	*0*	*0*	*0*	*0*
Dryland Soybeans	125	0	0	0	50
Corn	0	0	0	0	0
Irrigated Cotton	0	4,250	2,375	0	0
Dryland Cotton	0	225	0	0	0
Wheat	0	0	0	235	0
Operator's Share of Acres - Rice	88%	0%	80%	76%	91%
Operator's Share of Acres - Soybeans	88%	0%	80%	84%	91%
Operator's Share of Acres - Cotton	0%	84%	83%	0%	0%
Operator's Share of Acres - Corn	88%	0%	80%	0%	0%
Operator's Share of Acres - Wheat	0%	0%	80%	84%	0%