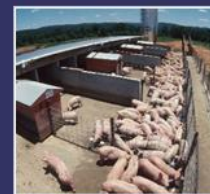




Stress Testing Agricultural Returns in 2012 and Beyond

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2011 Illinois Farm Economics Summit

The Profitability of Illinois Agriculture: Managing in a Turbulent World

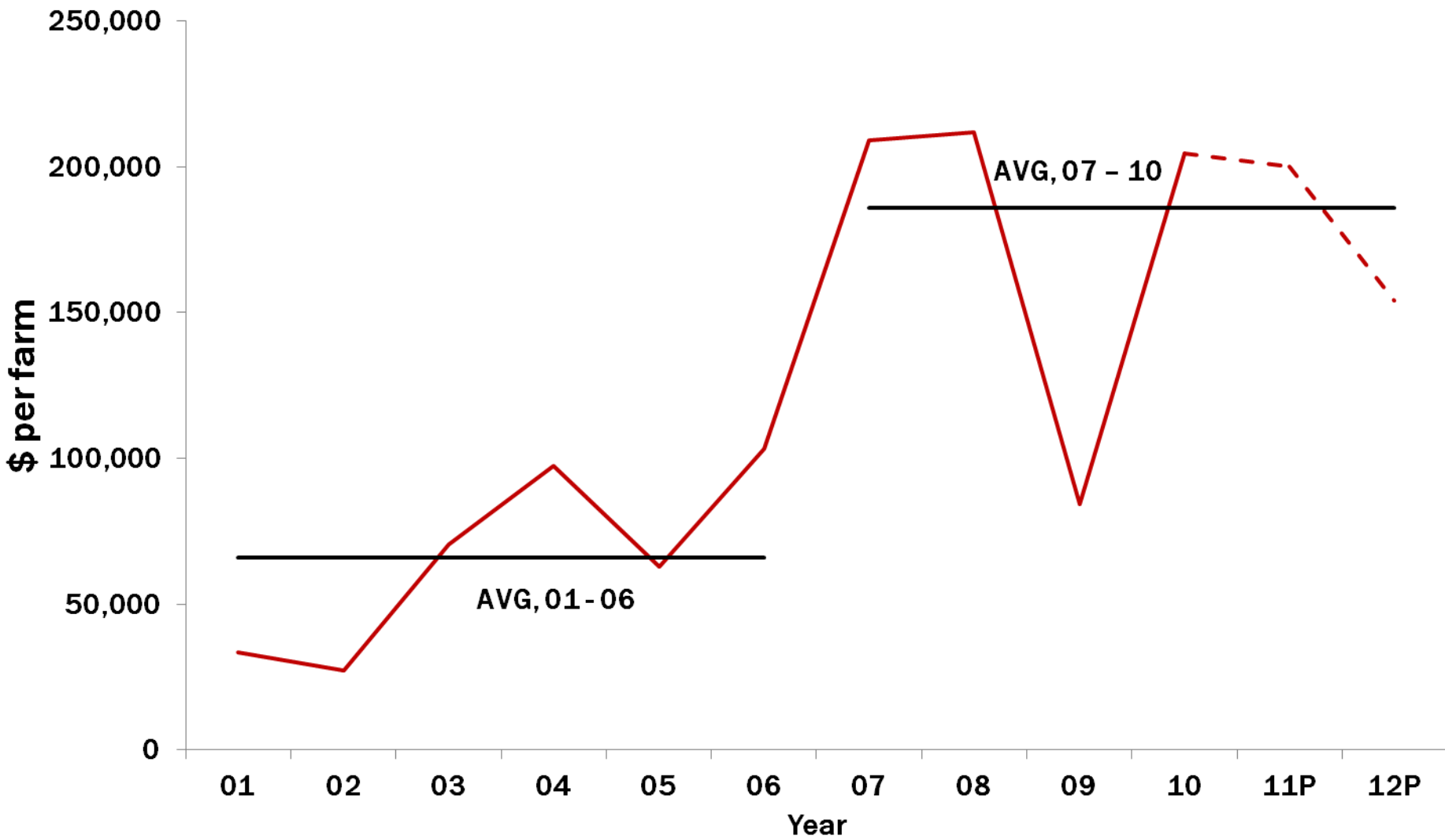
- **2011 and 2012 income projections**
 - 2012 looks like a “good” income year
- **Look at projected income under different:**
 - Price (long-run price near 01-06 income levels)
 - Insurance (Where they are set determines downside risk, will not protect against multi-year price declines)
 - Cash rent scenarios (High cash rent can do cash burns!)

- **Based on following commodity prices**
 - 2011 (Corn: \$6.00, Soybeans: \$11.40)**
 - 2012 (Corn: \$5.00, Soybeans: \$11.00)**
- **Yields:**
 - 2011 (Below average)**
 - 2012 (Trend-lines)**
- **Costs: Rising for 2012**

Net Farm Income, Grain Farms in FBFM, 2001 – 2012P



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- A great deal of yield variability:
 - Northern Illinois: Higher (some very good incomes)
 - Central and western: Lower
 - Southern: Variable
- Timing of grain sales will impact incomes

- 1. Current 2012 prices (\$5.00 corn, \$11.00 soybeans)**
- 2. Long-run prices (\$4.50 corn, \$10.50 soybeans)**
- 3. Below-average (\$4.00 corn, \$9.50 soybeans)**
- 4. Low (\$3.50 corn, \$8.20 soybeans)**
- 5. Poor (\$3.00 corn, \$7.00 soybeans)**

- Yields (187 bu corn yield, 54 bu soybean yield)
- 1,200 acres
- \$480,000 of debt
- Average costs
- **RP crop insurance purchased at 80% coverage level**
- **Projected prices (\$5.30 corn, \$11.30 soybeans)**
- **Land tenure:**
 - 10% owned**
 - 30% share-rented**
 - 60% cash-rented (\$275 cash rent)**

Net Income (Typical farm)

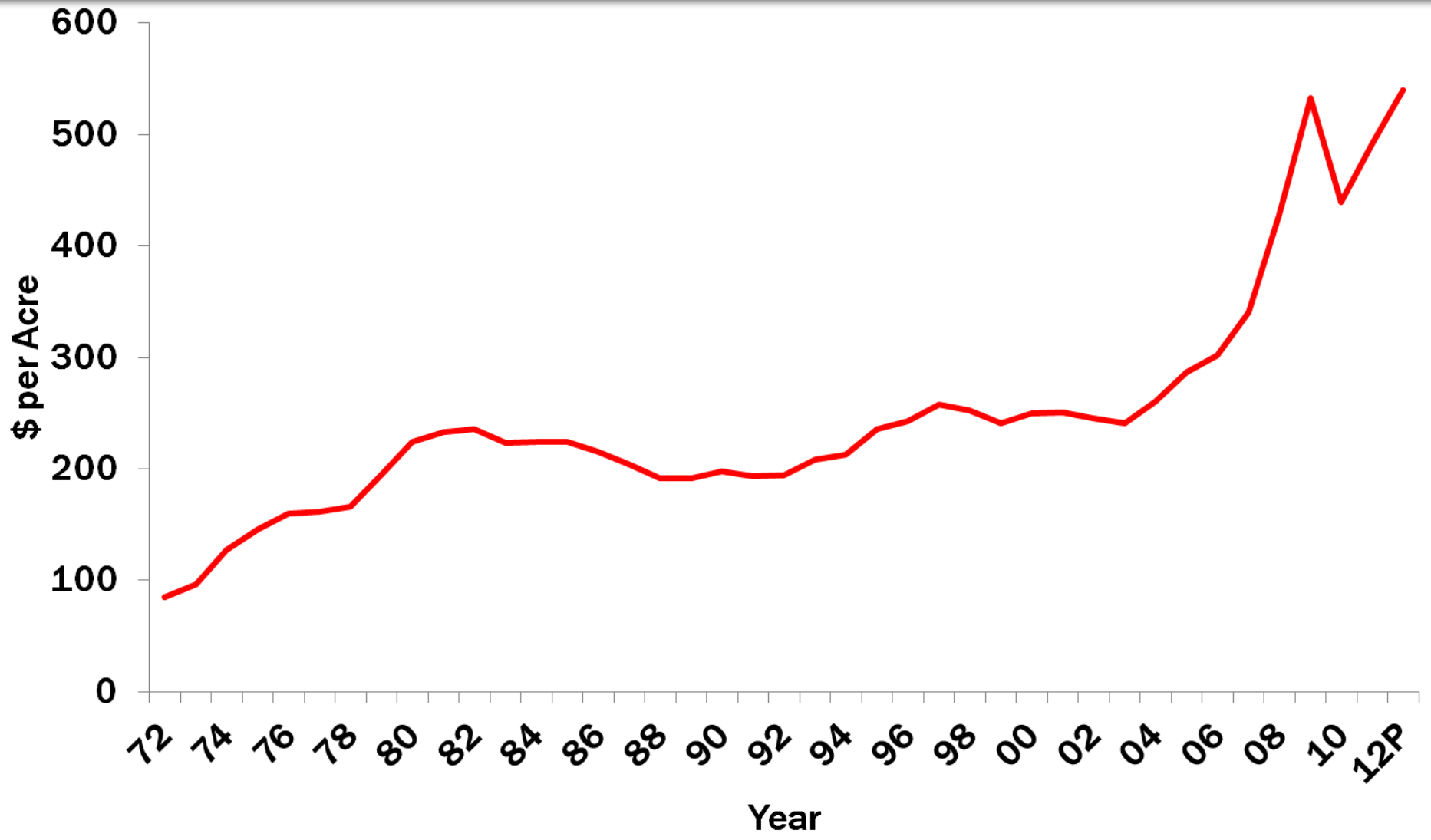
Price Scenario			Net Income
Name	Corn	Soybean	
Current	\$5.00	\$11.00	\$158,400
Long-run	\$4.50	\$10.50	\$86,500
Below average	\$4.00	\$9.50	\$4,400
Low	\$3.50	\$8.20	-\$26,000
Poor	\$3.00	\$7.00	-\$26,500

Crop insurance making payments at low and poor price levels

Represents projections given crop insurance purchase

Note that long-run prices result in incomes close to 01-06 average,
Costs have caught up

Non-land Corn Cost (per acre)



2012 Central Illinois, Non-land Costs

	Corn	Soybean
Fertilizer	165	\$58
Other direct costs	201	115
Power costs	92	80
Overhead costs	<u>55</u>	<u>48</u>
Non-land costs	\$513	\$301

Potential for decrease in fertilizer in future years

Power costs would come down if less capital purchases

Wild card is interest costs

World Nitrogen Supply/Demand Balance (million metric tonnes N)

	2011	2012	2013	2014	2015
Supply					
Capacity	163.2	171.5	175.9	182.7	188.8
Total Supply*	134.5	140.2	143.7	149.9	156.3
Demand					
Fertilizer Demand	105.2	107.0	108.8	110.6	112.4
Non-fertilizer Demand	23.2	24.3	25.2	26.0	26.3
Distribution Losses	2.2	2.3	2.3	2.4	2.4
Total Demand	130.7	133.6	136.4	139.0	141.2
Potential Balance	<u>3.8</u>	<u>6.6</u>	<u>7.3</u>	<u>10.9</u>	<u>15.1</u>
% of Supply	2.8	4.7	5.1	7.2	9.7

* Supply is capability, equating to the maximum achievable production. It is derived by multiplying capacity by the highest achievable operating rate.

- 58 new plants, 41 outside of China:
- East Asia, Africa, West Asia, Latin America
- Most growth in urea

Major capacity expansions for DAP through 2015

Over the next five years, close to 40 new MAP, DAP and TSP units are planned to come on stream in eleven countries. New facilities are planned in Africa (Algeria, Morocco and Tunisia), West Asia (Saudi Arabia), Asia (Bangladesh, China, Indonesia and Viet Nam), Latin America (Brazil and Venezuela) and EECA (Kazakhstan).

- From IFSA outlook
- Tight till 2014
- Note not in US

World Potash Supply/Demand Balance (million metric tonnes K_2O)

	2011	2012	2013	2014	2015
Supply					
Capacity	43.7	48.0	51.2	56.0	59.7
Total Supply*	39.8	42.5	45.0	48.3	52.3
Demand					
Fertilizer Demand	28.7	29.9	30.8	31.7	32.6
Non-fertilizer Demand	2.6	2.7	2.8	2.9	2.9
Distribution Losses	0.9	0.9	1.0	1.0	1.0
Total Demand	32.2	33.5	34.6	35.6	36.5
Potential Balance	<u>7.6</u>	<u>9.0</u>	<u>10.4</u>	<u>12.7</u>	<u>15.8</u>
<i>% of Supply</i>	19	21	23	26	30

Source: Prud'homme, IFA, May 2011

- 30 potash-related projected underway
- Less tight supplies

- 1. 2012 given differing projected prices**
- 2. Land tenure**
- 3. Land tenure and no crop insurance**

Net Income (Typical farm)



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Importance of crop insurance prices

Price Scenario			Net Income Given Differing Projected Prices RP Insurance , Corn/Soybeans		
Name	Corn	Soybean	\$5.80/11.80	5.30/11.30	5.00/11.00
Current	\$5.00	\$11.00	\$158,400	\$158,400	\$158,400
Long-run	\$4.50	\$10.50	\$86,500	\$86,500	\$86,500
Below avg.	\$4.00	\$9.50	\$44,100	\$4,400	\$4,400
Low	\$3.50	\$8.20	\$31,200	-\$26,000	-\$59,900
Poor	\$3.00	\$7.00	\$30,800	-\$26,500	-\$60,800

Importance of projected price period in determining downside risk

What happens in February will determine down-side risks

Net Income (Typical farm)



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Different cash rent scenarios

Price Scenario			Typical (10/30/60)	100% Cash Rent	
Name	Corn	Soybean		\$275 rent	\$350 Rent
Current	\$5.00	\$11.00	\$158,400	\$125,600	\$35,000
Long-run	\$4.50	\$10.50	\$86,500	\$86,500	-\$49,000
Below avg	\$4.00	\$9.50	\$4,400	-\$55,600	-\$145,000
Low	\$3.50	\$8.20	-\$26,000	-\$91,472	-\$181,400
Poor	\$3.00	\$7.00	-\$26,500	-\$91,900	-\$181,900

Cash rent farms more at risk in the face of price declines

- **Following insurance shows one panel without crop insurance**
- **Without insurance represents case where crop insurance prices have adjusted downward before February such that price protection is not provided by crop insurance**

With RP Insurance (Projected prices of \$5.30 for corn, \$11.30 for soybeans)

Price Scenario			Typical (10/30/60)	100% Cash Rent	
Name	Corn	Soybean		\$275 rent	\$350 Rent
Current	\$5.00	\$11.00	\$158,400	\$125,600	\$35,000
Long-run	\$4.50	\$10.50	\$86,500	\$86,500	-\$49,000
Below avg.	\$4.00	\$9.50	\$4,400	-\$55,600	-\$145,000
Low	\$3.50	\$8.20	-\$26,000	-\$91,472	-181,400
Poor	\$3.00	\$7.00	-\$26,500	-\$91,900	-\$181,900

No RP Insurance Payment

Price Scenario			Typical (10/30/60)	100% Cash Rent	
Name	Corn	Soybean		\$275 rent	\$350 Rent
Current	\$5.00	\$11.00	\$158,400	\$125,600	\$35,000
Long-run	\$4.50	\$10.50	\$86,500	\$86,500	-\$49,000
Below avg.	\$4.00	\$9.50	\$4,400	-55,600	-\$145,000
Low	\$3.50	\$8.20	-\$82,400	-\$157,800	-\$247,800
Poor	\$3.00	\$7.00	-\$168,200	-\$258,700	-\$348,800

- **Capital purchases would go down (\$90 per acre)**

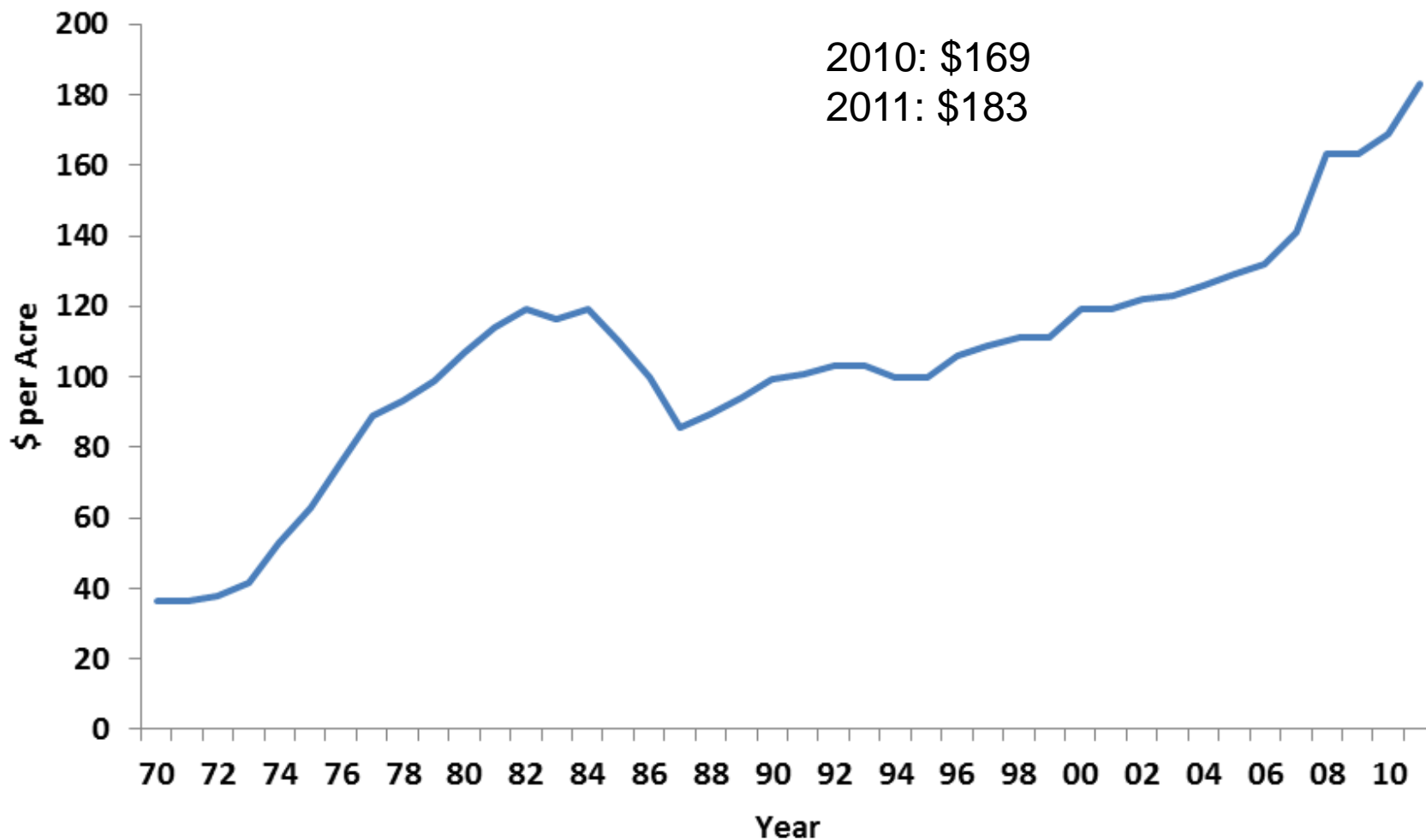
- **Will cash rents decrease?**

Cash Rents in Illinois

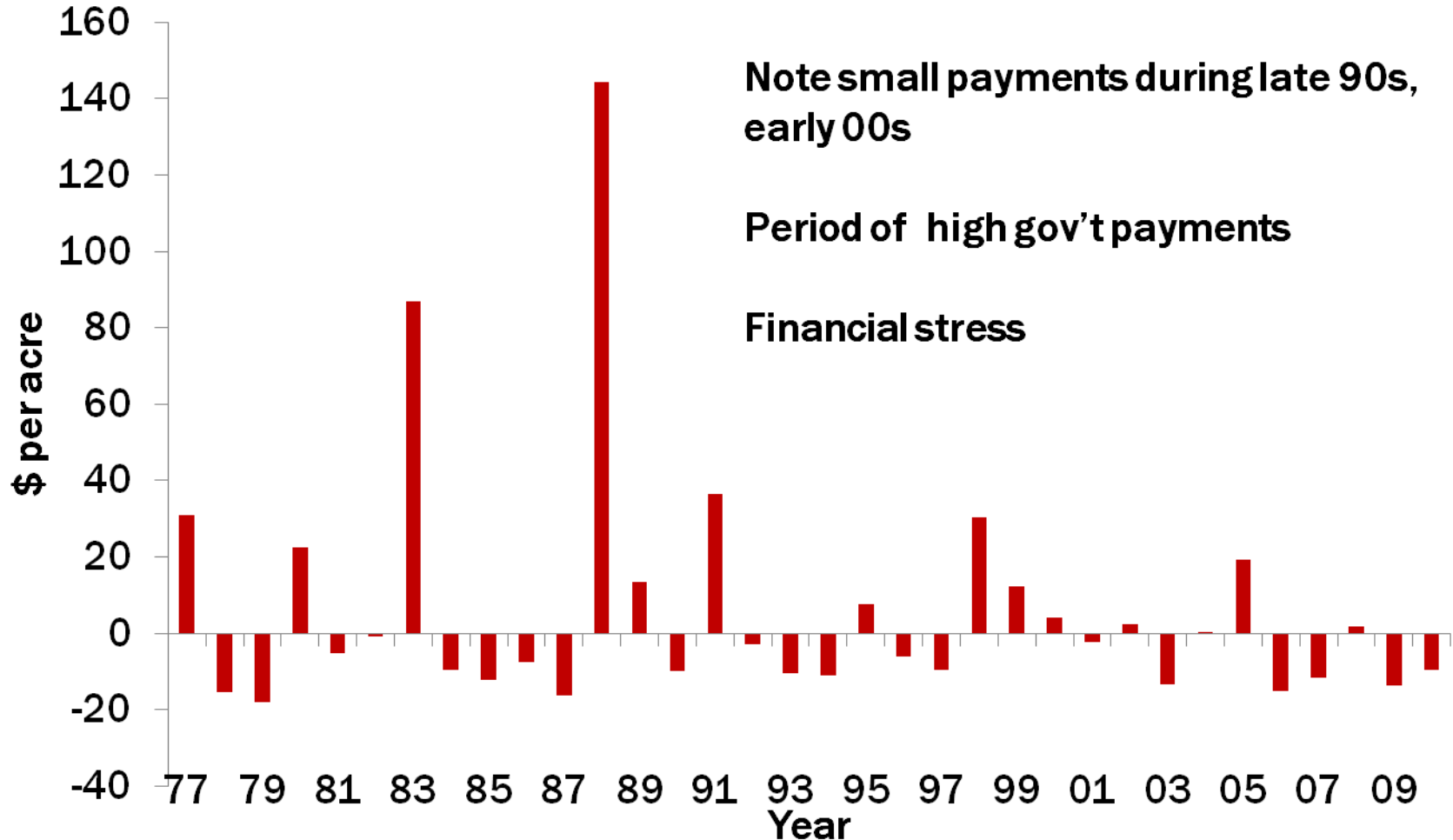
(Source USDA)



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RP Payments had they existed



- Given current prices, incomes will be relatively good in 2012
- Long-run prices (\$4.50 corn / \$10.50 soybeans) causes incomes to be near early 2000 levels, costs have caught up
- Key period is February and crop insurance price setting

- Farms with a high amount of acres cash rented are at risk when prices decline
- Commodity programs that fill the gap of multi-year price declines would fill an existing gap