

# **Crop Economics: Continuing Need to Cut Costs**

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## **Topics**

- **Budgets for 2018**
  - Repeat of last year, with lower fertilizer costs
- **Soybeans more profitable than corn again?**
- **Cash rent farmland not profitable**
  - Cut non-land costs, and
  - Cut cash rents

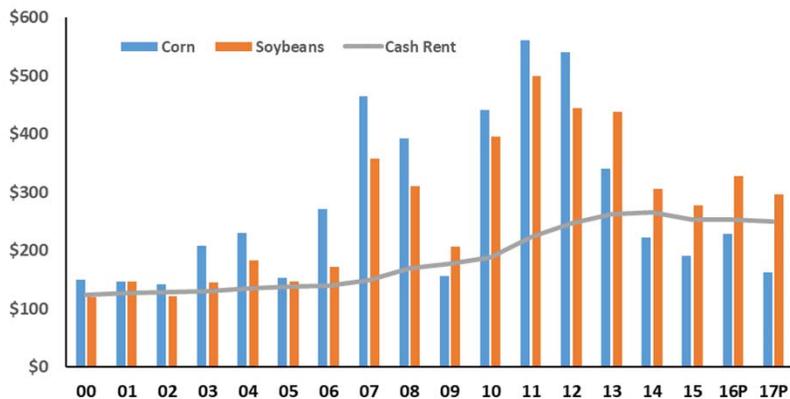
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## Results and Budgets for Northern Illinois (see Revenue and Costs, Management Section of farmdoc)

|                          | Corn    |         |         |         | Soybeans |         |         |
|--------------------------|---------|---------|---------|---------|----------|---------|---------|
|                          | 2013    | 2016    | 2017P   | 2018P   | 2016     | 2017P   | 2018P   |
| Yield per acre           | 204     | 223     | 215     | 202     | 66       | 65      | 64      |
| Price per bu             | \$4.61  | \$3.52  | \$3.25  | \$3.20  | \$9.66   | \$9.30  | \$8.80  |
|                          | \$/acre | \$/acre | \$/acre | \$/acre | \$/acre  | \$/acre | \$/acre |
| Crop revenue             | \$940   | \$785   | \$699   | \$646   | \$638    | \$605   | \$563   |
| ARC/PLC or ACRE          | 38      | 25      | 5       | 0       | 25       | 5       | 0       |
| Other gov't payments     | 0       | 0       | 0       | 0       | 0        | 0       | 0       |
| Crop insurance proceeds  | 46      | 5       | 20      | 0       | 4        | 7       | 0       |
| Gross revenue            | \$1,024 | \$815   | \$724   | \$646   | \$667    | \$617   | \$563   |
| Fertilizers              | \$199   | \$144   | \$124   | \$115   | \$30     | \$25    | \$22    |
| Pesticides               | 60      | 56      | 60      | 60      | 30       | 29      | 29      |
| Seed                     | 118     | 118     | 116     | 115     | 76       | 74      | 73      |
| Drying                   | 29      | 15      | 15      | 15      | 0        | 0       | 0       |
| Storage                  | 5       | 9       | 7       | 7       | 3        | 3       | 3       |
| Crop insurance           | 28      | 24      | 24      | 24      | 16       | 16      | 16      |
| Total direct costs       | \$439   | \$366   | \$346   | \$336   | \$155    | \$147   | \$143   |
| Total power costs        | \$150   | \$137   | \$133   | \$131   | \$119    | \$110   | \$108   |
| Total overhead costs     | \$81    | \$83    | \$83    | \$82    | \$65     | \$63    | \$64    |
| Total non-land costs     | \$670   | \$586   | \$562   | \$549   | \$339    | \$320   | \$315   |
| Operator and land return | \$354   | \$229   | \$162   | \$97    | \$328    | \$297   | \$248   |

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## Operator and Farmland Returns and Cash Rents, Northern Illinois



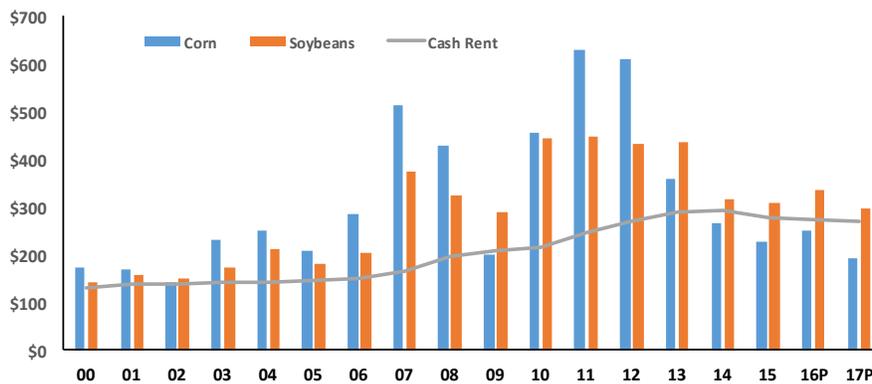
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## Results and Budgets for Central Illinois (High) (see Revenue and Costs, Management Section of farmdoc)

|                          | Corn    |         |         |         | Soybeans |         |         |
|--------------------------|---------|---------|---------|---------|----------|---------|---------|
|                          | 2013    | 2016    | 2017P   | 2018P   | 2016     | 2017P   | 2018P   |
| Yield per acre           | 197     | 228     | 215     | 210     | 69       | 67      | 63      |
| Price per bu             | \$4.52  | \$3.47  | \$3.30  | \$3.20  | \$9.65   | \$9.35  | \$8.80  |
|                          | \$/acre | \$/acre | \$/acre | \$/acre | \$/acre  | \$/acre | \$/acre |
| Crop revenue             | \$890   | \$791   | \$710   | \$672   | \$666    | \$626   | \$554   |
| ARC/PLC or ACRE          | 4       | 20      | 5       | 0       | 20       | 5       | 0       |
| Other gov't payments     | 0       | 0       | 0       | 0       | 0        | 0       | 0       |
| Crop insurance proceeds  | 10      | 5       | 20      | 0       | 4        | 7       | 0       |
| Gross revenue            | \$904   | \$816   | \$735   | \$672   | \$690    | \$638   | \$554   |
| Fertilizers              | \$193   | \$154   | \$134   | \$129   | \$49     | \$39    | \$36    |
| Pesticides               | 66      | 64      | 65      | 65      | 40       | 39      | 39      |
| Seed                     | 114     | 118     | 118     | 117     | 74       | 74      | 73      |
| Drying                   | 24      | 13      | 11      | 11      | 1        | 1       | 1       |
| Storage                  | 8       | 11      | 10      | 10      | 8        | 8       | 8       |
| Crop insurance           | 27      | 21      | 21      | 21      | 14       | 14      | 14      |
| Total direct costs       | \$432   | \$381   | \$359   | \$353   | \$186    | \$175   | \$171   |
| Total power costs        | \$127   | \$119   | \$116   | \$114   | \$106    | \$105   | \$102   |
| Total overhead costs     | \$56    | \$65    | \$66    | \$66    | \$61     | \$61    | \$62    |
| Total non-land costs     | \$615   | \$565   | \$541   | \$533   | \$353    | \$341   | \$335   |
| Operator and land return | \$289   | \$251   | \$194   | \$139   | \$337    | \$297   | \$219   |

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## Operator and Farmland Returns and Cash Rents, Central Illinois (High Productivity)



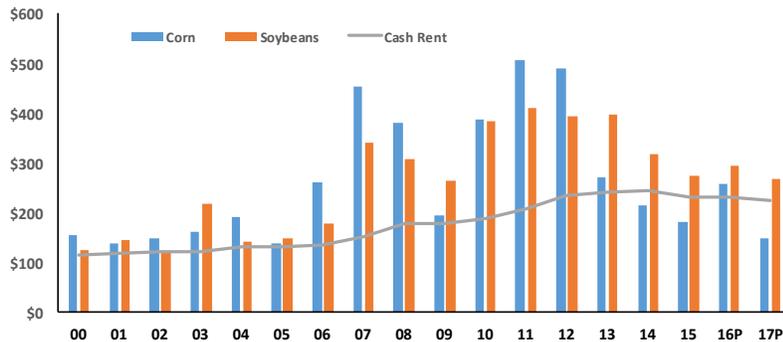
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## Results and Budgets for Central Illinois (Low) (see Revenue and Costs, Management Section of farmdoc)

|                          | Corn    |         |         |         | Soybeans |         |         |
|--------------------------|---------|---------|---------|---------|----------|---------|---------|
|                          | 2013    | 2016    | 2017P   | 2018P   | 2016     | 2017P   | 2018P   |
| Yield per acre           | 183     | 218     | 205     | 195     | 63       | 62      | 59      |
| Price per bu             | \$4.51  | \$3.69  | \$3.30  | \$3.20  | \$9.61   | \$9.35  | \$8.80  |
|                          | \$/acre | \$/acre | \$/acre | \$/acre | \$/acre  | \$/acre | \$/acre |
| Crop revenue             | \$825   | \$804   | \$677   | \$624   | \$605    | \$580   | \$519   |
| ARC/PLC or ACRE          | 4       | 25      | 5       | 0       | 25       | 5       | 0       |
| Other gov't payments     | 0       | 0       | 0       | 0       | 0        | 0       | 0       |
| Crop insurance proceeds  | 10      | 5       | 20      | 0       | 4        | 7       | 0       |
| Gross revenue            | \$839   | \$834   | \$702   | \$624   | \$634    | \$592   | \$519   |
| Fertilizers              | \$202   | \$154   | \$134   | \$129   | \$44     | \$34    | \$31    |
| Pesticides               | 66      | 64      | 68      | 68      | 41       | 42      | 42      |
| Seed                     | 120     | 118     | 118     | 117     | 62       | 63      | 62      |
| Drying                   | 19      | 13      | 11      | 11      | 1        | 1       | 1       |
| Storage                  | 7       | 11      | 10      | 10      | 4        | 4       | 4       |
| Crop insurance           | 26      | 22      | 22      | 22      | 15       | 16      | 16      |
| Total direct costs       | \$440   | \$382   | \$363   | \$357   | \$167    | \$160   | \$156   |
| Total power costs        | \$131   | \$127   | \$123   | \$121   | \$112    | \$103   | \$101   |
| Total overhead costs     | \$67    | \$66    | \$67    | \$66    | \$62     | \$61    | \$62    |
| Total non-land costs     | \$638   | \$575   | \$553   | \$544   | \$341    | \$324   | \$319   |
| Operator and land return | \$201   | \$259   | \$149   | \$80    | \$293    | \$268   | \$200   |

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## Operator and Farmland Returns and Cash Rents, Central Illinois (Low Productivity)



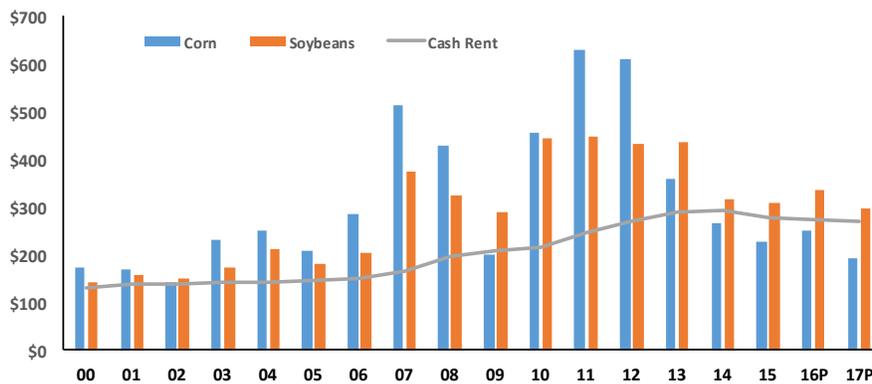
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## Results and Budgets for Southern Illinois (see Revenue and Costs, Management Section of farmdoc)

|                          | Corn    |         |         |         | Soybeans |         |         |
|--------------------------|---------|---------|---------|---------|----------|---------|---------|
|                          | 2013    | 2016    | 2017P   | 2018P   | 2016     | 2017P   | 2018P   |
| Yield per acre           | 183     | 163     | 160     | 165     | 56       | 54      | 50      |
| Price per bu             | \$4.69  | \$3.54  | \$3.35  | \$3.20  | \$9.65   | \$9.40  | \$8.80  |
|                          | \$/acre | \$/acre | \$/acre | \$/acre | \$/acre  | \$/acre | \$/acre |
| Crop revenue             | \$858   | \$577   | \$536   | \$528   | \$540    | \$508   | \$440   |
| ARC/PLC or ACRE          | 2       | 25      | 5       | 0       | 25       | 5       | 0       |
| Other gov't payments     | 0       | 0       | 0       | 0       | 0        | 0       | 0       |
| Crop insurance proceeds  | 7       | 5       | 20      | 0       | 4        | 16      | 0       |
| Gross revenue            | \$867   | \$607   | \$561   | \$528   | \$569    | \$529   | \$440   |
| Fertilizers              | \$198   | \$138   | \$118   | \$113   | \$44     | \$34    | \$31    |
| Pesticides               | 66      | 68      | 66      | 66      | 48       | 46      | 46      |
| Seed                     | 111     | 112     | 114     | 113     | 64       | 65      | 64      |
| Drying                   | 17      | 6       | 6       | 6       | 0        | 0       | 0       |
| Storage                  | 3       | 9       | 7       | 7       | 7        | 6       | 6       |
| Crop insurance           | 24      | 20      | 18      | 18      | 13       | 13      | 13      |
| Total direct costs       | \$419   | \$353   | \$329   | \$323   | \$176    | \$164   | \$160   |
| Total power costs        | \$144   | \$130   | \$131   | \$129   | \$123    | \$124   | \$122   |
| Total overhead costs     | \$83    | \$93    | \$93    | \$98    | \$75     | \$76    | \$77    |
| Total non-land Costs     | \$646   | \$576   | \$553   | \$550   | \$374    | \$364   | \$359   |
| Operator and land return | \$221   | \$31    | \$8     | -\$22   | \$195    | \$165   | \$81    |

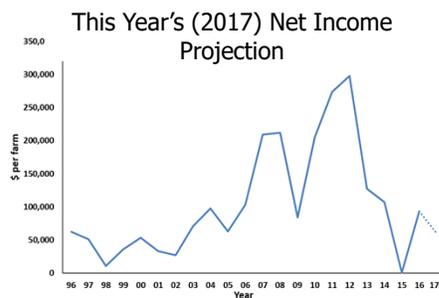
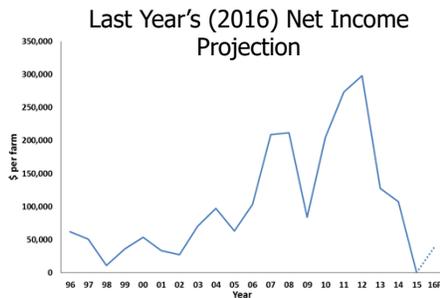
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## Operator and Farmland Returns and Cash Rents, Southern Illinois



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# Net Income on Illinois Grain Farms



Budgets would suggest incomes will be down in 2017, compared to 2016

Above trend yields in 2016 and 2017 have resulted in incomes above 2015

Can we have below trend yields? **Yes**

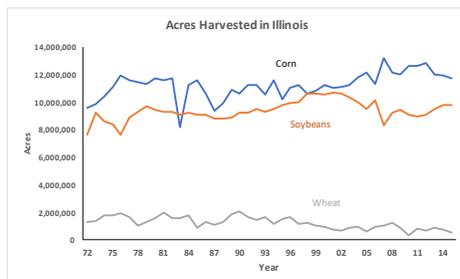


# Corn Versus Soybeans

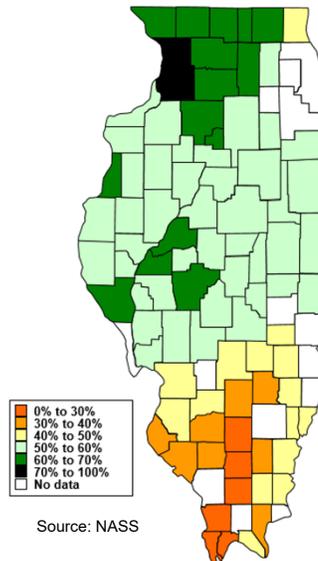
Budgets show:

**Soybean-after-corn more profitable than corn**

**Soybeans-after-soybean more profitable than corn (3 bushel yield drag on soybeans-after-soybeans, no cyst problem)**

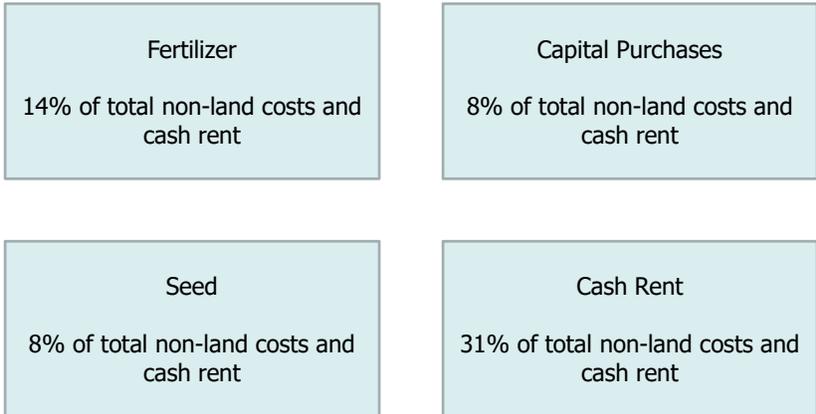


Corn Acres as a Percent of Corn and Soybean Acres, 2016



Source: NASS

# Largest Cost Items



These items total 61% of non-land costs and cash rent



# Fertilizer

**Fertilizer costs have declined**

**Can we lower rates?**

**P and K replacement levels have been lowered**



Source: Illinois FBFM



**Recommended N applications  
(at \$3.50 corn price, \$400 ammonia price)**

- Northern – 169 pounds**
- Central – 186 pounds**
- Southern – 200 pounds**

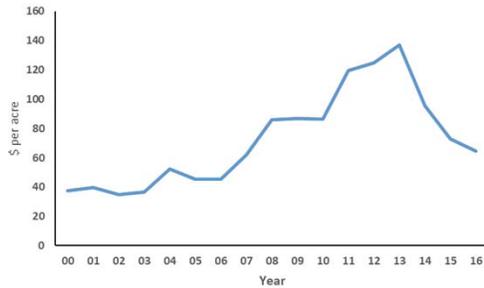
**FarmdocDaily, Nov 14, 2017**



# Capital Purchases

## Can we go lower?

Per Acre Capital Purchases on Illinois Farms



Source: Illinois Farm Business Farm Management

**Caveat: Without purchases, low tax depreciation**

**FBFM grain farms who did not make capital purchases in 2016 had:**

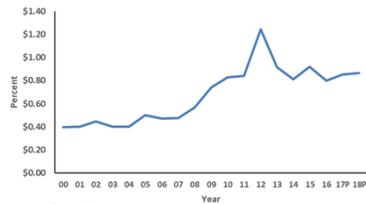
**\$25/acre tax depreciation**  
**\$67/acre economic depreciation**

**At most, save \$.40 in taxes per \$1 of capital purchases**

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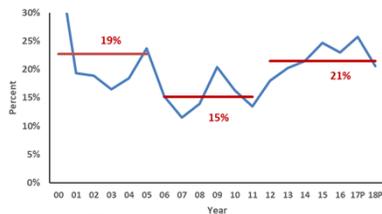
# Seed

Seed and Pesticide Costs, Per Bushel Produced, Central Illinois, Corn



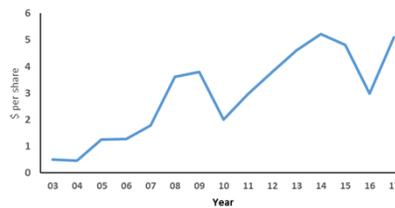
Source: Illinois FBFM

Seed and Pesticide Costs, Percent of Crop Revenue, Central Illinois, Corn



Source: Illinois FBFM

Diluted Earnings Per Share, Monsanto Stock



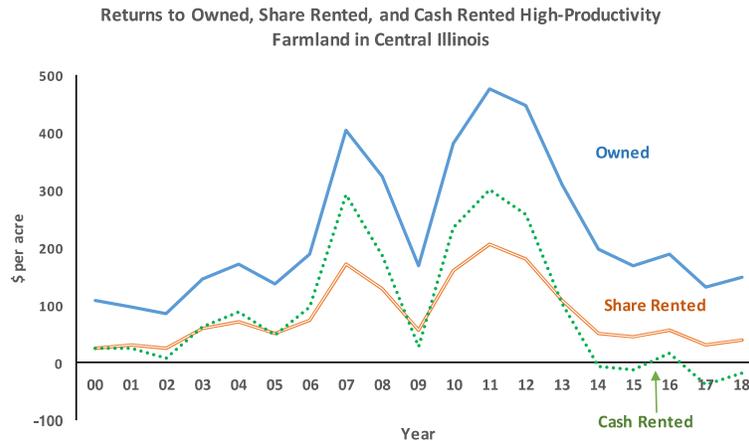
Source: Monsanto Financial Statements

### Considerations:

1. Can we lower seed costs?
2. Look at innovations in the input supply industry

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# Cash Rent Decisions



Source: Illinois Farm Business Farm Management

See farmdocDaily, August 22, 2017

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## Why are Farmers Willing to Lose Money on Cash Rented Farmland?

- Reasonably optimistic (except about yields in July through August)
- Farmland given up likely will not be farmed in the future
- Have the ability to continue farming high cash rent farmland (most farmers are here)
  - Other farmland at reasonable cost
  - Working capital
- Hope for better returns in the future (over \$4 corn price)
- Need for growth sometime in the future

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## Cash Rent Decisions, Northern Illinois

### Operator and Land Return = \$173/acre

Cash Rent in 2017p = \$250/acre  
\$3.20 corn price, \$8.80 soybean price  
202 corn yield, 64 soybean yield  
\$549 corn non-land, \$315 soybean non-land  
(budgets in presentation)

What prices result in break-even at  
\$250 cash rent

**\$3.58 corn, \$10.01 soybeans**

\$250 rent + \$50 return

**\$3.83 corn, \$10.79 soybeans**

\$300 cash rent + \$50 return

**\$4.08 corn, \$11.57 soybeans**

What yields result in break-even at  
\$250 cash rent

**226 bu corn, 72 bu soybeans**

\$250 cash rent + \$50 return

**241 bu corn, 78 bu soybeans**

\$300 cash rent + \$50 return

**257 bu corn, 84 bu soybeans**

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## Cash Rent Decisions, Central Illinois (High Productivity)

### Operator and Land Return = \$179/acre

Cash Rent in 2017p = \$270/acre  
\$3.20 corn price, \$8.80 soybean price  
210 corn yield, 63 soybean yield  
\$533 corn non-land, \$335 soybean non-land  
(budgets in presentation)

What prices result in break-even at  
\$270 cash rent

**\$3.63 corn, \$10.24 soybeans**

\$270 rent + \$50 return

**\$3.87 corn, \$11.04 soybeans**

\$300 cash rent + \$50 return

**\$4.01 corn, \$11.51 soybeans**

What yields result in break-even at  
\$270 cash rent

**238 bu corn, 73 bu soybeans**

\$270 cash rent + \$50 return

**254 bu corn, 79 bu soybeans**

\$300 cash rent + \$50 return

**263 bu corn, 82 bu soybeans**

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## Cash Rent Decisions, Central Illinois (Low Productivity)

### Operator and Land Return = \$140/acre

Cash Rent in 2017p = \$225/acre  
\$3.20 corn price, \$8.80 soybean price  
210 corn yield, 63 soybean yield  
\$544 corn non-land, \$319 soybean non-land  
(budgets in presentation)

What prices result in break-even at  
\$225 cash rent

**\$3.64 corn, \$10.24 soybeans**

\$225 rent + \$50 return

**\$3.89 corn, \$11.09 soybeans**

\$250 cash rent + \$50 return

**\$4.02 corn, \$11.51 soybeans**

What yields result in break-even at  
\$225 cash rent

**221 bu corn, 69 bu soybeans**

\$225 cash rent + \$50 return

**237 bu corn, 74 bu soybeans**

\$250 cash rent + \$50 return

**245 bu corn, 77 bu soybeans**

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## Cash Rent Decisions, Southern Illinois

### Operator and Land Return = \$30/acre

Cash Rent in 2017p = \$160/acre  
\$3.20 corn price, \$8.80 soybean price  
165 corn yield, 50 soybean yield  
\$550 corn non-land, \$339 soybean non-land  
(budgets in presentation)

What prices result in break-even at  
\$160 cash rent

**\$3.99 corn, \$11.41 soybeans**

\$160 rent + \$50 return

**\$4.29 corn, \$12.41 soybeans**

\$200 cash rent + \$50 return

**\$4.54 corn, \$13.21 soybeans**

What yields result in break-even at  
\$160 cash rent

**205 bu corn, 64 bu soybeans**

\$160 cash rent + \$50 return

**221 bu corn, 70 bu soybeans**

\$200 cash rent + \$50 return

**233 bu corn, 75 bu soybeans**

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## High Cash Rent Decisions

For profitability at high cash rents need:

1) Above \$4 corn / \$11 soybean prices

or

2) High yields



Recommended steps:

1. Calculate returns from different land ownership
2. Realize that the lender will limit credit availability at some point (might be a conversation worth having with the lender).
3. Determine how long it will be before credit is limited if prices continue in mid-\$3.00's for corn and low \$9.00s for soybeans

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## Decisions for Two Farm Types with High Cash Rent Farmland

High levels of cash rent (90% of acres) at high cash rents (\$50 above average), landowner will not lower cash rents

- Drop some of the high cash rent farmland
- Evaluate how long there is a desire to farm
- Evaluate exit strategies
- Ask: What happens if exit farming now?
- Ask: What happens afterwards if reach the credit limit?

Most of the land base is not high cash rent, maybe other sources of income, but have one or two farms that are high cash rent

- Financially strong, no one is going to prevent the continuing renting of high cash rent farmland
- Likely better off from a financial standpoint without the high cash rent farmland
- Ask: Will the cash rent stay the same when we get to "good" times?
- Ask: Why is the farm being rented?

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## **Summary**

- **Merry Christmas and a Happy New Year**
- **Still in time of low returns and reductions in working capital**
- **Still facing tough decisions**

