## Risks Facing Farmland Markets

## Rising Farmland Values: Causes and Cautions

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## Farmland Markets

- Returns composition and patterns
- Changing control/return characteristics
- Rental values as proxies
- Changing rental characteristics
- Relative to alternatives - farmland as an investment
- Market issues: prices, government programs, supply and demand issues, cap rate influences
- Risks to Lenders, investors, owners, operators
- Concluding observations


## Farmland values



## Farmland Income - rental values



## Current Income rates (rent/value)



## Historic Views on Farmland..

"We have two great sources of profit in farming: first, rise in the value of the land; and second, profit on the production of farm crops. The first has been the chief source."
"Already it is difficult or impossible, over much of the country for young (farmers) to become landowners. The area of desirable farmland attainable ... is comparatively small.
The number and percentage of tenant farmers must certainly increase."

- George Morrow, 1886


## Comparison to Major Asset Classes

Table 1. Asset Return Characteristics

|  | Annual Ave. <br> Return | Standard <br> Deviation | Coefficient of Variation | Annual Ave Return | Standard <br> Deviation | Coefficient of Variation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Asset/Index | ------------- 1970-2010 ------------- |  |  |  | --------------- 1990-2010 -------------- |  |
| Illinois | 10.77\% | 9.96\% | 0.924 | 10.80\% | 4.97\% | 0.461 |
| DowJones | 6.52\% | 16.11\% | 2.473 | 6.84\% | 16.05\% | 2.347 |
| EUROPE | 6.56\% | 20.89\% | 3.185 | 4.98\% | 22.00\% | 4.417 |
| EAFE | 6.88\% | 21.35\% | 3.102 | 2.19\% | 21.78\% | 9.966 |
| Gold | 8.97\% | 22.24\% | 2.480 | 5.82\% | 13.45\% | 2.309 |
| AllREITS | 9.09\% | 21.56\% | 2.373 | 9.49\% | 20.74\% | 2.187 |
| TBSM3M | 5.53\% | 2.98\% | 0.540 | 3.60\% | 1.96\% | 0.545 |
| TCM10Y | 7.20\% | 2.59\% | 0.360 | 5.45\% | 1.45\% | 0.265 |
| BBALibor | 4.85\% | 2.32\% | 0.478 | 4.30\% | 2.08\% | 0.482 |
| AAA | 8.24\% | 2.27\% | 0.275 | 6.76\% | 1.21\% | 0.179 |
| BAA | 9.35\% | 2.50\% | 0.268 | 7.71\% | 1.12\% | 0.145 |
| CP3M | 3.30\% | 2.04\% | 0.618 | 3.30\% | 2.04\% | 0.62 |
| CPI | 4.29\% | 2.88\% | 0.671 | 2.63\% | 1.12\% | 0.425 |
| PPI | 4.03\% | 4.96\% | 1.229 | 2.47\% | 4.01\% | 1.624 |

## Risk - it's all relative: Farmland

## buy (b.o.y) Sell (end of year)





 $\begin{array}{lllllllllllllllllllllllllllllllllllllll}28.7 \% & 32.7 \% & 26.7 \% & 24.4 \% & 22.2 \% & 20.3 \% & 16.7 \% & 13.9 \% & 13.0 \% & 8.8 \% & 7.5 \% & 6.8 \% & 7.4 \% & 8.0 \% & 7.9 \% & 8.0 \% & 8.1 \% & 8.0 \% & 8.3 \% & 8.5 \% & 8.5 \% & 8.5 \% & 8.6 \% & 8.6 \% & 8.5 \% & 8.4 \% & 8.4 \% & 8.3 \% & 8.4 \% & 8.9 \% & 9.1 \% & 9.2 \% & 9.4 \% & 9.2 \% & 9.3 \% & 9.5 \%\end{array}$ \begin{tabular}{lllllllllllllllllllllllllllllllllllll}
\& $25.8 \%$ \& $23.1 \%$ \& $20.7 \%$ \& $18.7 \%$ \& $14.8 \%$ \& $11.9 \%$ \& $11.1 \%$ \& $6.8 \%$ \& $5.6 \%$ \& $5.0 \%$ \& $5.8 \%$ \& $6.5 \%$ \& $6.5 \%$ \& $6.7 \%$ \& $7.0 \%$ \& $6.9 \%$ \& $7.2 \%$ \& $7.5 \%$ \& $7.6 \%$ \& $7.6 \%$ \& $7.8 \%$ \& $7.8 \%$ \& $7.8 \%$ \& $7.7 \%$ \& $7.6 \%$ \& $7.6 \%$ \& $7.7 \%$ \& $8.3 \%$ \& $8.5 \%$ \& $8.7 \%$ \& $8.9 \%$ \& $8.7 \%$ \& $8.7 \%$ \& $9.0 \%$ <br>
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 $\begin{array}{llllllllllllllllllllllllllllllllllllllllllllll}15.6 \% & 16.7 \% & 15.7 \% & 14.6 \% & 10.9 \% & 8.2 \% & 7.9 \% & 3.6 \% & 2.6 \% & 2.3 \% & 3.4 \% & 4.3 \% & 4.5 \% & 4.8 \% & 5.2 \% & 5.3 \% & 5.7 \% & 6.1 \% & 6.2 \% & 6.4 \% & 6.6 \% & 6.7 \% & 6.6 \% & 6.6 \% & 6.6 \% & 6.7 \% & 6.8 \% & 7.4 \% & 7.6 \% & 7.8 \% & 8.1 \% & 7.9 \% & 8.0 \% & 8.3 \%\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllllllllll}17.8 \% & 15.8 \% & 14.3 \% & 9.7 \% & 6.8 \% & 6.7 \% & 2.0 \% & 1.1 \% & 0.9 \% & 2.2 \% & 3.3 \% & 3.6 \% & 4.0 \% & 4.5 \% & 4.6 \% & 5.1 \% & 5.6 \% & 5.7 \% & 5.9 \% & 6.2 \% & 6.3 \% & 6.3 \% & 6.2 \% & 6.3 \% & 6.3 \% & 6.4 \% & 7.1 \% & 7.3 \% & 7.6 \% & 7.8 \% & 7.7 \% & 7.8 \% & 8.1 \%\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}13.8 \% & 12.5 \% & 7.2 \% & 4.2 \% & 4.6 \% & -0.5 \% & -1.1 \% & -1.1 \% & 0.6 \% & 2.0 \% & 2.4 \% & 3.0 \% & 3.5 \% & 3.7 \% & 4.3 \% & 4.8 \% & 5.1 \% & 5.3 \% & 5.6 \% & 5.7 \% & 5.7 \% & 5.7 \% & 5.8 \% & 5.9 \% & 6.0 \% & 6.7 \% & 7.0 \% & 7.2 \% & 7.5 \% & 7.3 \% & 7.5 \% & 7.8 \% & \end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}11.3 \% & 4.0 \% & 1.2 \% & 2.4 \% & -3.1 \% & -3.3 \% & -3.0 \% & -0.9 \% & 0.8 \% & 1.3 \% & 2.0 \% & 2.7 \% & 3.0 \% & 3.7 \% & 4.3 \% & 4.6 \% & 4.8 \% & 5.2 \% & 5.3 \% & 5.3 \% & 5.4 \% & 5.4 \% & 5.5 \% & 5.7 \% & 6.4 \% & 6.7 \% & 7.0 \% & 7.3 \% & 7.1 \% & 7.3 \% & 7.6 \%\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}-2.8 \% & -3.5 \% & -0.4 \% & -6.4 \% & -6.0 \% & -5.2 \% & -2.6 \% & -0.5 \% & 0.3 \% & 1.2 \% & 2.0 \% & 2.3 \% & 3.1 \% & 3.8 \% & 4.1 \% & 4.4 \% & 4.8 \% & 5.0 \% & 5.0 \% & 5.1 \% & 5.2 \% & 5.3 \% & 5.4 \% & 6.2 \% & 6.5 \% & 6.8 \% & 7.1 \% & 7.0 \% & 7.1 \% & 7.5 \%\end{array}$ 

$-4.3 \%$ \& $0.7 \%$ \& $-7.6 \%$ \& $-6.8 \%$ \& $-5.7 \%$ \& $-2.5 \%$ \& $-0.2 \%$ \& $0.7 \%$ \& $1.6 \%$ \& $2.5 \%$ \& $2.8 \%$ \& $3.6 \%$ \& $4.3 \%$ \& $4.6 \%$ \& $4.9 \%$ \& $5.3 \%$ \& $5.5 \%$ \& $5.5 \%$ \& $5.5 \%$ \& $5.6 \%$ \& $5.7 \%$ \& $5.8 \%$ \& $6.6 \%$ \& $6.9 \%$ \& $7.2 \%$ \& $7.5 \%$ \& $7.4 \%$ \& $7.5 \%$ \& $7.8 \%$ <br>
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 $\begin{array}{lllllllllllllllllllllllllllll}6.0 \% & -9.2 \% & -7.7 \% & -6.1 \% & -2.2 \% & 0.5 \% & 1.4 \% & 2.4 \% & 3.3 \% & 3.6 \% & 4.4 \% & 5.1 \% & 5.4 \% & 5.6 \% & 6.0 \% & 6.1 \% & 6.1 \% & 6.1 \% & 6.1 \% & 6.2 \% & 6.3 \% & 7.2 \% & 7.5 \% & 7.7 \% & 8.0 \% & 7.8 \% & 7.9 \% & 8.3 \%\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}-13.8 \% & -9.8 \% & -4.1 \% & -0.5 \% & 0.7 \% & 1.9 \% & 2.9 \% & 3.3 \% & 4.2 \% & 5.0 \% & 5.3 \% & 5.5 \% & 6.0 \% & 6.1 \% & 6.1 \% & 6.1 \% & 6.1 \% & 6.2 \% & 6.4 \% & 7.2 \% & 7.5 \% & 7.8 \% & 8.1 \% & 7.9 \% & 8.0 \% & 8.4 \%\end{array}$ 

$-4.6 \%$ \& $-2.8 \%$ \& $2.8 \%$ \& $5.8 \%$ \& $6.0 \%$ \& $6.5 \%$ \& $7.1 \%$ \& $7.0 \%$ \& $7.6 \%$ \& $8.2 \%$ \& $8.2 \%$ \& $8.3 \%$ \& $8.5 \%$ \& $8.5 \%$ \& $8.3 \%$ \& $8.2 \%$ \& $8.1 \%$ \& $8.0 \%$ \& $8.1 \%$ \& $8.9 \%$ \& $9.2 \%$ \& $9.4 \%$ \& $9.7 \%$ \& $9.4 \%$ <br>
$9.4 \%$ \& $9.8 \%$ <br>
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$-1.1 \%$ \& $6.7 \%$ \& $9.5 \%$ \& $8.8 \%$ \& $8.9 \%$ \& $9.2 \%$ \& $8.8 \%$ \& $9.3 \%$ \& $9.7 \%$ \& $9.6 \%$ \& $9.5 \%$ \& $9.7 \%$ \& $9.6 \%$ \& $9.3 \%$ \& $9.1 \%$ \& $8.9 \%$ \& $8.8 \%$ \& $8.9 \%$ \& $9.7 \%$ \& $9.9 \%$ \& $10.1 \%$ \& $10.4 \%$ \& $10.0 \%$ <br>
\& $10.1 \%$ \& $10.4 \%$ <br>
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\end{tabular}

 $\begin{array}{llllllllllllllllllll}15.2 \% & 10.9 \% & 10.4 \% & 10.5 \% & 9.6 \% & 10.1 \% & 10.6 \% & 10.3 \% & 10.1 \% & 10.3 \% & 10.1 \% & 9.7 \% & 9.4 \% & 9.2 \% & 9.1 \% & 9.1 \% & 10.1 \% & 10.3 \% & 10.5 \% & 10.7 \% \\ 10.4 \% & 10.4 \% & 10.7 \%\end{array}$ $\begin{array}{llllllllllllllllllllll} & 6.7 \% & 8.1 \% & 8.9 \% & 8.3 \% & 9.2 \% & 9.8 \% & 9.7 \% & 9.5 \% & 9.7 \% & 9.6 \% & 9.3 \% & 9.0 \% & 8.8 \% & 8.7 \% & 8.7 \% & 9.8 \% & 10.0 \% & 10.3 \% & 10.5 \% & 10.1 \% & 10.2 \% \\ & 10.5 \%\end{array}$ $\begin{array}{lllllllllllllllllllllll}9.4 \% & 10.1 \% & 8.8 \% & 9.8 \% & 10.4 \% & 10.2 \% & 9.9 \% & 10.1 \% & 9.9 \% & 9.5 \% & 9.2 \% & 9.0 \% & 8.9 \% & 8.9 \% & 10.0 \% & 10.2 \% & 10.5 \% & 10.7 \% & 10.3 \% & 10.3 \% & 10.7 \%\end{array}$ $\begin{array}{llllllllllllllllll}10.7 \% & 8.4 \% & 9.9 \% & 10.7 \% & 10.3 \% & 10.0 \% & 10.2 \% & 10.0 \% & 9.5 \% & 9.1 \% & 8.9 \% & 8.8 \% & 8.9 \% & 10.0 \% & 10.3 \% & 10.5 \% & 10.8 \% & 10.4 \% \\ 10.4 \% & 10.8 \%\end{array}$ $\begin{array}{llllllllllllllllll}6.2 \% & 9.5 \% & 10.7 \% & 10.2 \% & 9.9 \% & 10.1 \% & 9.9 \% & 9.4 \% & 9.0 \% & 8.8 \% & 8.6 \% & 8.7 \% & 9.9 \% & 10.3 \% & 10.5 \% & 10.8 \% & 10.3 \% & 10.4 \% \\ 10.8 \%\end{array}$ $\begin{array}{llllllllllllllll}12.8 \% & 12.9 \% & 11.6 \% & 10.8 \% & 10.9 \% & 10.5 \% & 9.8 \% & 9.3 \% & 9.0 \% & 8.9 \% & 8.9 \% & 10.3 \% & 10.6 \% & 10.8 \% & 11.1 \% & 10.6 \% \\ 10.6 \% & 11.0 \%\end{array}$ $\begin{array}{lllllllllllllll}13.0 \% & 10.9 \% & 10.1 \% & 10.5 \% & 10.0 \% & 9.4 \% & 8.8 \% & 8.6 \% & 8.5 \% & 8.5 \% & 10.0 \% & 10.4 \% & 10.7 \% & 11.0 \% & 10.4 \% \\ 10.5 \% & 10.9 \%\end{array}$ $\begin{array}{llllllllllllllll}8.8 \% & 8.7 \% & 9.6 \% & 9.3 \% & 8.6 \% & 8.1 \% & 7.9 \% & 7.9 \% & 8.1 \% & 9.7 \% & 10.1 \% & 10.5 \% & 10.9 \% & 10.3 \% & 10.3 \% & 10.8 \%\end{array}$ $\begin{array}{lllllllllllllll}8.6 \% & 10.0 \% & 9.4 \% & 8.6 \% & 8.0 \% & 7.8 \% & 7.8 \% & 8.0 \% & 9.8 \% & 10.3 \% & 10.6 \% & 11.0 \% & 10.4 \% & 10.4 \% & 10.9 \%\end{array}$ $\begin{array}{llllllllllllll}11.5 \% & 9.8 \% & 8.6 \% & 7.8 \% & 7.6 \% & 7.6 \% & 7.9 \% & 10.0 \% & 10.5 \% & 10.8 \% & 11.2 \% & 10.5 \% & 10.6 \% & 11.1 \%\end{array}$ $\begin{array}{llllllllllllll}8.2 \% & 7.1 \% & 6.6 \% & 6.7 \% & 6.9 \% & 7.3 \% & 9.8 \% & 10.3 \% & 10.8 \% & 11.2 \% & 10.4 \% & 10.5 \% & 11.0 \%\end{array}$ $\begin{array}{lllllllllllll}6.1 \% & 5.9 \% & 6.2 \% & 6.5 \% & 7.1 \% & 10.0 \% & 10.6 \% & 11.1 \% & 11.6 \% & 10.7 \% & 10.7 \% & 11.3 \%\end{array}$ $\begin{array}{llllllllllllll}5.6 \% & 6.2 \% & 6.7 \% & 7.3 \% & 10.9 \% & 11.4 \% & 11.8 \% & 12.3 \% & 11.2 \% & 11.2 \% & 11.8 \%\end{array}$ $\begin{array}{llllllllll}6.9 \% & 7.2 \% & 7.9 \% & 12.2 \% & 12.6 \% & 12.9 \% & 13.2 \% & 11.9 \% & 11.8 \% & 12.4 \%\end{array}$ $\begin{array}{lllllllllll} & 7.5 \% & 8.4 \% & 14.0 \% & 14.1 \% & 14.1 \% & 14.3 \% & 12.6 \% & 12.4 \% & 13.0 \%\end{array}$ $\begin{array}{lllllllllllll} & 9.4 \% & 17.4 \% & 16.4 \% & 15.9 \% & 15.8 \% & 13.5 \% & 13.1 \% & 13.7 \%\end{array}$ $\square 30.0 \%-40.0 \%$ - 20.0\%-30.0\% $-10.0 \%-20.0 \%$ - $0.0 \%-10.0 \%$

- $-10.0 \%-0.0 \%$

■ - $20.0 \%-10.0 \%$

- $-30.0 \%-20.0 \%$
$\begin{array}{llllllll} & 26.1 \% & 20.1 \% & 18.1 \% & 17.4 \% & 14.3 \% & 13.8 \% & 14.4 \%\end{array}$
$14.3 \% \quad 14.3 \% \quad 14.6 \% \quad 11.6 \% \quad 11.5 \% \quad 12.5 \%$
$14.3 \% \quad 14.8 \% \quad 10.7 \% \quad 10.8 \% \quad 12.2 \%$
15.4\% $\quad 8.9 \% \quad 9.6 \% \quad 11.7 \%$
2.8\% $\quad 6.8 \% \quad 10.4 \%$
11.0\% $14.5 \%$


## Risk - it's all relative: Gold

## uy (b.o.y) Sell (end of year)



 1974 1975 1976
1977 1978 1979
1980 1980 1981
1982 1982 1984 1985 1986 1987 1988
1989 1990





## Risk - it's all relative: REITS

## uy (b.o.y) Sell (end of year)






 97 $\begin{array}{lllllllllllllllllllllllllllllllllllllllllllllll}17.5 \% & 7.5 \% & 13.5 \% & 16.2 \% & 14.6 \% & 16.6 \% & 17.5 \% & 17.0 \% & 15.7 \% & 15.9 \% & 13.1 \% & 12.9 \% & 11.7 \% & 9.2 \% & 10.5 \% & 10.5 \% & 10.9 \% & 10.3 \% & 10.6 \% & 11.6 \% & 11.8 \% & 10.1 \% & 9.3 \% & 9.8 \% & 10.0 \% & 9.8 \% & 10.6 \% & 11.1 \% & 11.0 \% & 11.6 \% & 10.4 \% & 7.9 \% & 8.3 \% & 8.8 \%\end{array}$
 $\begin{array}{lllllllllllllllllllllllllllllllllllll} & 26.6 \% & 25.7 \% & 19.6 \% & 21.5 \% & 21.7 \% & 20.4 \% & 18.2 \% & 18.1 \% & 14.4 \% & 14.0 \% & 12.5 \% & 9.4 \% & 10.9 \% & 11.0 \% & 11.4 \% & 10.7 \% & 11.0 \% & 12.0 \% & 12.3 \% & 10.4 \% & 9.5 \% & 10.1 \% & 10.2 \% & 10.0 \% & 10.8 \% & 11.4 \% & 11.3 \% & 11.9 \% & 10.6 \% & 7.9 \% & 8.4 \% & 8.9 \%\end{array}$

$\begin{array}{lllllllllllllllllllllllllllllllll} & 24.7 \% & 16.2 \% & 19.8 \% & 20.5 \% & 19.2 \% & 16.8 \% & 16.9 \% & 13.0 \% & 12.7 \% & 11.2 \% & 8.0 \% & 9.7 \% & 9.9 \% & 10.4 \% & 9.7 \% & 10.1 \% & 11.2 \% & 11.6 \% & 9.6 \% & 8.7 \% & 9.3 \% & 9.6 \% & 9.4 \% & 10.2 \% & 10.8 \% & 10.7 \% & 11.4 \% & 10.1 \% & 7.3 \% & 7.8 \% & 8.3 \%\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}8.2 \% & 17.5 \% & 19.2 \% & 17.8 \% & 15.3 \% & 15.7 \% & 11.4 \% & 11.3 \% & 9.8 \% & 6.5 \% & 8.5 \% & 8.7 \% & 9.3 \% & 8.7 \% & 9.2 \% & 10.4 \% & 10.8 \% & 8.8 \% & 7.9 \% & 8.6 \% & 8.9 \% & 8.7 \% & 9.6 \% & 10.3 \% & 10.2 \% & 10.9 \% & 9.6 \% & 6.7 \% & 7.3 \% & 7.8 \%\end{array}$ | $27.5 \%$ | $25.1 \%$ | $21.2 \%$ | $17.1 \%$ | $17.2 \%$ | $11.9 \%$ | $11.7 \%$ | $9.9 \%$ | $6.3 \%$ | $8.5 \%$ | $8.7 \%$ | $9.4 \%$ | $8.7 \%$ | $9.3 \%$ | $10.6 \%$ | $11.0 \%$ | $8.8 \%$ | $7.9 \%$ | $8.6 \%$ | $8.9 \%$ | $8.7 \%$ | $9.7 \%$ | $10.4 \%$ | $10.3 \%$ | $11.0 \%$ | $9.6 \%$ | $6.7 \%$ | $7.3 \%$ | $7.8 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllllllllllll}22.7 \% & 18.2 \% & 13.9 \% & 14.8 \% & 9.0 \% & 9.3 \% & 7.6 \% & 3.9 \% & 6.5 \% & 7.0 \% & 7.9 \% & 7.3 \% & 8.0 \% & 9.5 \% & 10.0 \% & 7.7 \% & 6.8 \% & 7.7 \% & 8.0 \% & 7.9 \% & 8.9 \% & 9.7 \% & 9.6 \% & 10.4 \% & 9.0 \% & 5.9 \% & 6.6 \% \\ 7.2 \%\end{array}$ | $13.8 \%$ | $9.7 \%$ | $12.3 \%$ | $5.8 \%$ | $6.8 \%$ | $5.3 \%$ | $1.4 \%$ | $4.7 \%$ | $5.4 \%$ | $6.5 \%$ | $6.0 \%$ | $6.9 \%$ | $8.5 \%$ | $9.1 \%$ | $6.8 \%$ | $5.9 \%$ | $6.8 \%$ | $7.3 \%$ | $7.1 \%$ | $8.3 \%$ | $9.1 \%$ | $9.0 \%$ | $9.8 \%$ | $8.4 \%$ | $5.3 \%$ | $6.0 \%$ | $6.6 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllllllllllll}5.8 \% & 11.5 \% & 3.3 \% & 5.1 \% & 3.7 \% & -0.5 \% & 3.4 \% & 4.4 \% & 5.7 \% & 5.2 \% & 6.2 \% & 8.1 \% & 8.8 \% & 6.3 \% & 5.4 \% & 6.4 \% & 6.9 \% & 6.8 \% & 8.0 \% & 8.9 \% & 8.8 \% & 9.7 \% & 8.2 \% & 5.0 \% & 5.7 \% & 6.4 \%\end{array}$ | $17.5 \%$ | $2.1 \%$ | $4.9 \%$ | $3.2 \%$ | $-1.7 \%$ | $3.1 \%$ | $4.2 \%$ | $5.7 \%$ | $5.2 \%$ | $6.3 \%$ | $8.3 \%$ | $9.0 \%$ | $6.4 \%$ | $5.4 \%$ | $6.5 \%$ | $6.9 \%$ | $6.8 \%$ | $8.1 \%$ | $9.0 \%$ | $9.0 \%$ | $9.9 \%$ | $8.3 \%$ | $4.9 \%$ | $5.7 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6.4 \%$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{array}{lllllllllllllllllllllll}-11.3 \% & -0.9 \% & -1.2 \% & -6.0 \% & 0.4 \% & 2.2 \% & 4.2 \% & 3.7 \% & 5.1 \% & 7.4 \% & 8.3 \% & 5.5 \% & 4.5 \% & 5.7 \% & 6.3 \% & 6.2 \% & 7.6 \% & 8.6 \% & 8.5 \% & 9.5 \% & 7.9 \% & 4.4 \% & 5.2 \% \\ 5.9 \%\end{array}$ | $10.8 \%$ | $4.3 \%$ | $-4.2 \%$ | $3.5 \%$ | $5.1 \%$ | $7.0 \%$ | $6.1 \%$ | $7.4 \%$ | $9.7 \%$ | $10.5 \%$ | $7.2 \%$ | $5.9 \%$ | $7.2 \%$ | $7.7 \%$ | $7.5 \%$ | $8.9 \%$ | $9.9 \%$ | $9.8 \%$ | $10.7 \%$ | $8.9 \%$ | $5.2 \%$ | $6.0 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $.8 \%$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{array}{lllllllllllllllllllll}-1.8 \% & -10.9 \% & 1.2 \% & 3.7 \% & 6.2 \% & 5.3 \% & 6.9 \% & 9.6 \% & 10.4 \% & 6.8 \% & 5.5 \% & 6.9 \% & 7.4 \% & 7.3 \% & 8.8 \% & 9.8 \% & 9.7 \% & 10.7 \% & 8.9 \% & 5.0 \% & 5.8 \% \\ & 6.6 \%\end{array}$

 $\begin{array}{rrrrrrrrrrrrrrrrrrrrr}-19.0 \% & 2.8 \% & 5.6 \% & 8.4 \% & 6.8 \% & 8.4 \% & 11.3 \% & 12.1 \% & 7.8 \% & 6.3 \% & 7.7 \% & 8.2 \% & 8.0 \% & 9.6 \% & 10.6 \% & 10.5 \% & 11.5 \% & 9.5 \% & 5.3 \% & 6.2 \% & 7.0 \% \\ & 30.5 \% & 20.6 \% & 19.4 \% & 14.5 \% & 14.9 \% & 17.4 \% & 17.4 \% & 11.7 \% & 9.5 \% & 10.8 \% & 11.1 \% & 10.6 \% & 12.2 \% & 13.1 \% & 12.8 \% & 13.7 \% & 11.4 \% & 6.9 \% & 7.7 \% & 8.5 \%\end{array}$ $\begin{array}{llllllllllllllllll}11.5 \% & 14.2 \% & 9.6 \% & 11.3 \% & 14.9 \% & 15.3 \% & 9.3 \% & 7.1 \% & 8.8 \% & 9.4 \% & 9.0 \% & 10.8 \% & 11.9 \% & 11.6 \% & 12.7 \% & 10.3 \% & 5.6 \% & 5.6 \%\end{array}$ $\begin{array}{llllllllllllllll}17.0 \% & 8.6 \% & 11.3 \% & 15.8 \% & 16.1 \% & 8.9 \% & 6.5 \% & 8.5 \% & 9.1 \% & 8.7 \% & 10.7 \% & 11.9 \% & 11.6 \% & 12.8 \% & 10.3 \% & 5.3 \% \\ 6.3 \% & 7.2 \%\end{array}$ $\begin{array}{lllllllllllllllll}0.8 \% & 8.5 \% & 15.4 \% & 15.9 \% & 7.4 \% & 4.9 \% & 7.3 \% & 8.2 \% & 7.8 \% & 10.1 \% & 11.5 \% & 11.2 \% & 12.5 \% & 9.8 \% & 4.5 \% & 5.7 \% & 6.7 \%\end{array}$ \begin{tabular}{lllllllllllllll|}
$16.8 \%$ \& $23.5 \%$ \& $21.4 \%$ \& $9.1 \%$ \& $5.7 \%$ \& $8.4 \%$ \& $9.3 \%$ \& $8.7 \%$ \& $11.2 \%$ \& $12.6 \%$ \& $12.2 \%$ \& $13.5 \%$ \& $10.5 \%$ \& $4.8 \%$ \& $6.0 \%$ <br>
$7.1 \%$

 $\begin{array}{lllllllllllllll}30.6 \% & 23.7 \% & 6.6 \% & 3.1 \% & 6.8 \% & 8.1 \% & 7.6 \% & 10.5 \% & 12.1 \% & 11.7 \% & 13.2 \% & 10.0 \% & 3.9 \% & 5.3 \% & 6.5 \%\end{array}$ $\begin{array}{llllllllllllll}17.3 \% & -3.7 \% & -4.7 \% & 1.6 \% & 4.0 \% & 4.2 \% & 7.9 \% & 10.0 \% & 9.8 \% & 11.6 \% & 8.3 \% & 2.0 \% & 3.6 \% & 4.9 \%\end{array}$ $\begin{array}{lllllllllllll}-20.9 \% & -14.1 \% & -3.1 \% & 1.0 \% & 1.8 \% & 6.4 \% & 9.0 \% & 8.9 \% & 11.0 \% & 7.5 \% & 0.7 \% & 2.5 \% & 4.0 \%\end{array}$ $\begin{array}{llllllllllll}-6.7 \% & 7.1 \% & 9.5 \% & 8.4 \% & 12.8 \% & 15.0 \% & 14.0 \% & 15.8 \% & 11.2 \% & 3.1 \% & 4.9 \% & 6.4 \%\end{array}$ 

\hline $23.0 \%$ \& $18.6 \%$ \& $13.9 \%$ \& $18.3 \%$ \& $19.9 \%$ \& $17.8 \%$ \& $19.4 \%$ \& $13.6 \%$ <br>
$4.3 \%$ \& $6.2 \%$ \& $7.7 \%$ <br>
\hline

 

$14.4 \%$ \& $9.6 \%$ \& $16.8 \%$ \& $19.2 \%$ \& $16.8 \%$ \& $18.8 \%$ \& $12.4 \%$ \& $2.2 \%$ \& $4.4 \%$ <br>
$6.3 \%$
\end{tabular}

$\begin{array}{lllllllll}5.1 \% & 18.0 \% & 20.8 \% & 17.5 \% & 19.7 \% & 12.0 \% & 0.5 \% & 3.2 \% & 5.4 \%\end{array}$ $\begin{array}{llllllll}32.5 \% & 29.5 \% & 21.9 \% & 23.7 \% & 13.5 \% & -0.2 \% & 3.0 \% & 5.4 \%\end{array}$
$\begin{array}{llllllll} & 26.6 \% & 16.9 \% & 20.9 \% & 9.2 \% & -5.7 \% & -1.3 \% & 2.1 \%\end{array}$
8.0\% $18.1 \% \quad 3.9 \%-12.4 \% ~-6.0 \% ~-1.5 \%$

|  | $29.3 \%$ | $1.9 \%$ | $-18.3 \%$ | $-9.2 \%$ |
| :--- | :--- | :--- | :--- | :--- |


| $-19.6 \%$ | $-35.1 \%$ | $-19.3 \%$ |
| :--- | :--- | :--- |
|  | $-10.1 \%$ |  |

$-19.2 \% \quad-6.7 \%$

## Control composition changing



Source: FBFM and USDA

## Operator and Farmland Returns



Source: Prof. G. Schnitkey calculations

## Cash Rents Relative to Crop Revenue, N. Illinois

| Year | Corn | Soybeans | Cash <br> Rent | Rent as a Percent <br> of Crop Revenue |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 0 0 0}$ | 307 | 215 | 123 | $40 \%$ | $57 \%$ |
| 2001 | 331 | 217 | 126 | $38 \%$ | $58 \%$ |
| 2002 | 362 | 266 | 129 | $36 \%$ | $49 \%$ |
| 2003 | 426 | 262 | 130 | $31 \%$ | $50 \%$ |
| 2004 | 403 | 304 | 135 | $33 \%$ | $44 \%$ |
| 2006 | 306 | 282 | 137 | $45 \%$ | $49 \%$ |
| 2006 | 558 | 345 | 139 | $25 \%$ | $40 \%$ |
| 2007 | 774 | 556 | 149 | $19 \%$ | $27 \%$ |
| 2008 | 812 | 523 | 170 | $21 \%$ | $33 \%$ |
| 2009 | 657 | 490 | 177 | $27 \%$ | $36 \%$ |
| 2010 | 929 | 672 | 188 | $20 \%$ | $28 \%$ |

## Operator and Farmland Returns (C.Illinois)

|  | 2009 | 2010 | 2011P | 2012P |
| :---: | :---: | :---: | :---: | :---: |
| Corn Yield | 192 | 168 | 155 | 195 |
| Corn Price | 3.65 | 5.30 | 6.75 | 5.75 |
| Bean Yield | 55 | 57 | 50 | 56 |
| Bean Price | 10.02 | 12.03 | 13.75 | 13.00 |
| Operator and Farmland Return |  |  |  |  |
| Corn | 203 | 486 | 572 | 632 |
| Soybeans | 285 | 444 | 422 | 451 |
| Corn 66\% Beans 33\% | 231 | 472 | 521 | 570 |

## Mid-Year Leasing Survey

Illinois Society of Professional Farm Managers and Rural Appraisers

| Land Quality | Expected <br> Corn Yields | 2011 <br> Rent | 2012 <br> Proj. Rent | Change |
| :--- | :---: | :---: | :---: | :---: |
|  | Bu./ acre | $\$ /$ acre | $\$ /$ acre | $\$ /$ acre |
| Excellent | Over 190 | $\$ 329$ | $\$ 367$ | $\$ 38$ |
| Good | $170-190$ | $\$ 285$ | $\$ 321$ | $\$ 36$ |
| Average | $150-170$ | $\$ 241$ | $\$ 269$ | $\$ 28$ |
| Poor | 150 or less | $\$ 190$ | $\$ 214$ | $\$ 24$ |

- Survey of ISPFMRA members
- Managed land - higher than USDA aves
- See: www.ispfmra.org/land-values.html


## Illinois Corn Price, 1973 - 2010



Source: Prof. Scott Irwin and Darrel Good, UI

## Does the Market "make sense"

Illinois Farmland Rent/Value


## Converted to Values...



## Price-to-Cap Value Ratio (1= rational)



## Yield Curve and Cap rate issues



## The Balance Sheet of the Fed



## Land Value by Rent and Net Cap Rate


\% Value Change by Cap change


## Balance Sheet of Ag Sector

|  | 1970 | 1980 | 1990 | 2000 | 2010 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (\$millions, except ratios - source ERS-USDA) |  |  |  |  |
| Farm Assets | 278,864 | 983,305 | 840,609 | 1,203,215 | 2,179,669 |
| Real Estate | 202,417 | 782,819 | 619,149 | 946,428 | 1,841,672 |
| Non Real Estate | 76,447 | 200,486 | 221,459 | 256,787 | 337,997 |
| Farm Debt | 48,753 | 166,824 | 137,962 | 177,637 | 246,859 |
| Real Estate | 27,506 | 89,692 | 74,732 | 91,109 | 136,262 |
| Non Real Estate | 21,247 | 77,131 | 63,230 | 86,529 | 110,596 |
| Equity | 230,112 | 816,481 | 702,647 | 1,025,578 | 1,932,811 |
| Selected Indicators |  |  |  |  |  |
| Debt/Equity | 21.2\% | 20.4\% | 19.6\% | 17.3\% | 12.8\% |
| Debt/Assets | 17.5\% | 17.0\% | 16.4\% | 14.8\% | 11.3\% |
| Real Estate/Assets | 72.6\% | 79.6\% | 73.7\% | 78.7\% | 84.5\% |
| Real Estate/Equity | 88.0\% | 95.9\% | 88.1\% | 92.3\% | 95.3\% |
| Real Estate D to Total D | 56.4\% | 53.8\% | 54.2\% | 51.3\% | 55.2\% |

## Risks facing Farmland markets

- Commodity prices, income margins
- Somewhat muted and lagged effect from income, but still reflect fundamentals
- World demand, bio demands, quality of calories consumed, seem likely to grow
- Government programs
- Farm bill favoring crop insurance as major safety net
- ACRE-like (ADAP) programs possible
- Crop Insurance provisions - key for controlling income and margin risk
- Higher coverage available
- Better integration into rental markets
- Margin insurance also possible to develop


## Risks facing Farmland markets

- Lenders, owners, investors - varying effects
- Borrower collateral positions very good
- Lender penetration better than ‘80s, more sensible risk monitoring and stress testing with cause
- Capital quality better by debt providers
- Investors and the liquidity puzzle (may be solved)
- Rental markets becoming more cash-based (or flex), still very sticky (i.e., currently lag, lower share of revenue)
- Capitalization effects
- Difficult to forecast "exit strategy" by Fed that does not involve increased rates, or decreased productivity.
- Not a farm-specific issue (unlike ‘80s)
- Viewed as greatest risk to valuation, not to income


# Discussion/Questions 

Thanks...

