Farm Real Estate Investments: Headwinds, Tailwinds and Developing Issues

ISPFMRA Land Values and Lease Trends
March 17, 2016
Bloomington, Illinois

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Advancing Farmland Markets through Research and Information

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Goals: improve accuracy and understanding of asset class, and to provide unbiased research and useful tools for those involved with farmland investments.

Tools and articles at:

http://farmland.illinois.edu/

http://farmdocdaily.illinois.edu/

ISPFMRA Tools and data sets – 2001 to present

Illinois Society of Professional Farm Managers and Rural Appraisers
2001-2015 Data

Select Data based on:	
County	(All)
Price/Acre	(All)
Acres	(All)
Region	(All)
PI	(All)
% Tillable	(All)
Tract Type	(Multiple Items)

Values

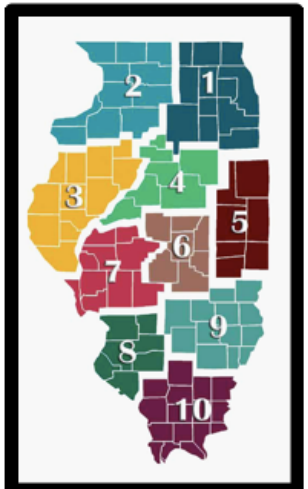
Year	Ave Price/Acre	Ave Acres	Ave PI	Number of Sales
2001	2,419	118.4	126.8	274
2002	2,596	114.2	128.0	334
2003	3,044	119.1	126.7	403
2004	3,847	130.5	125.8	311
2005	4,167	118.3	124.6	574
2006	4,480	107.2	126.0	513
2007	4,718	131.6	125.0	578
2008	5,110	113.2	122.7	632
2009	5,308	107.6	124.9	670
2010	5,948	107.4	124.6	698
2011	7,701	109.0	126.1	550
2012	8,337	95.9	121.9	1051
2013	10,011	98.8	124.7	683
2014	9,068	88.1	120.5	853
2015	8,816	95.3	121.9	977
Grand Total	**6427.1**	**106.9**	**124.0**	**9101**

This data includes (1) data published in annual ISPFMRA publications and (2) extra data that were collected but not published.

Note: *The raw data contains separate Transitional/Development, Ag-Speculative Transitional, Development, and Transitional tract types. For the purposes of this lookup, these categories were combined into the Transitional tract type.*

- *Productivity indexes from 2001-2003 are based on Circular 1156.*
- *Productivity indexes from 2004 onward are based on Bulletin 811.*
- *Tract type ranges are adjusted based on these different PI definitions:*

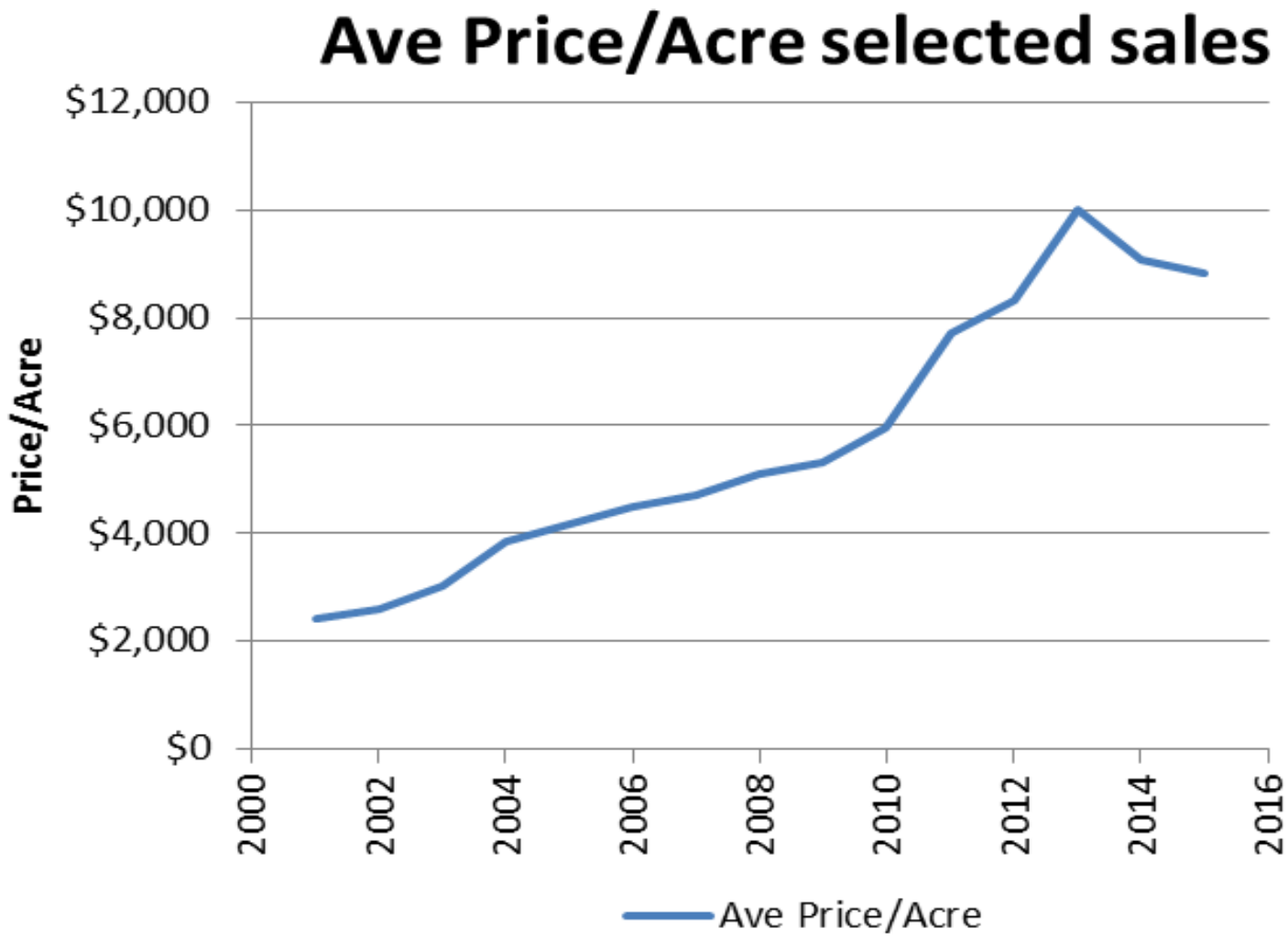
	2001-2003 PI	2004 onward PI
Excellent	*145 or greater*	*133 or greater*
Good	*120 to 144*	*117 to 132*
Average	*100 to 124*	*100 to 116*
Fair	*Less than 100*	*Less than 100*



Map of ISPFMRA regions

These PI-based tract types are used for all tracts except those defined as Bottomland, CRP Land, Other, Recreational, Special Interest, Transitional/Development, or Wind Energy.

ISPFMRA Tools and data sets – 2001 to present



ISPFMRA Tools and data sets – 2001 to present

Region (All):

Percentage Change of average by Period	Excellent Tracts	Good Tracts	Average Tracts	Fair Tracts	Recreational Tracts	Transitional Tracts
2001 - 2002	7.4%	6.4%	-0.7%	13.5%	-13.8%	30.3%
2002 - 2003	18.7%	16.0%	12.8%	25.2%	15.9%	13.9%
2003 - 2004	8.3%	21.1%	16.5%	-25.8%	34.4%	26.2%
2004 - 2005	8.5%	-0.5%	5.3%	32.2%	7.4%	1.7%
2005 - 2006	10.0%	5.1%	7.3%	7.4%	-0.1%	25.9%
2006 - 2007	6.0%	9.8%	12.8%	22.1%	23.9%	18.7%
2007 - 2008	12.6%	15.4%	11.7%	4.9%	18.5%	-40.7%
2008 - 2009	3.0%	-1.1%	4.0%	-6.4%	-22.0%	-23.3%
2009 - 2010	7.1%	9.0%	13.0%	30.3%	10.4%	-26.8%
2010 - 2011	25.8%	22.9%	23.8%	10.7%	-2.1%	0.3%
2011 - 2012	17.1%	14.1%	3.2%	8.8%	4.9%	7.7%
2012 - 2013	12.7%	11.6%	23.4%	18.8%	7.0%	29.7%
2013 - 2014	-0.8%	-3.6%	-8.5%	-4.5%	7.0%	15.5%
2014 - 2015	-6.5%	-4.8%	-1.1%	-15.8%	-9.8%	-36.9%
Ave 2001-2015	**9.27%**	**8.66%**	**8.81%**	**8.67%**	**5.81%**	**3.02%**

(Note: Limited numbers of sales by year may affect representativeness)

Balance Sheet of Ag Sector -- US

	1970	1980	1990	2000	2010	2013	2014	2015F
	($ millions, except ratios - source ERS-USDA)							
Farm Assets	**278,823**	**1,000,422**	**840,609**	**1,203,215**	**2,313,228**	***2,886,548***	***2,994,014***	***3,005,140***
Real Estate	202,418	782,820	619,149	946,428	1,823,264	*2,384,831*	*2,444,811*	*2,426,022*
Non Real Estate	76,405	217,602	221,459	256,787	489,964	*501,717*	*549,203*	*579,118*
Farm Debt	**48,501**	**162,432**	**131,116**	**163,930**	**278,931**	***308,223***	***317,715***	***327,444***
Real Estate	27,238	85,272	67,633	84,724	154,065	*178,080*	*182,740*	*186,395*
Non Real Estate	21,263	77,160	63,483	79,206	124,865	*130,143*	*134,975*	*141,049*
Equity	**230,322**	**837,990**	**709,493**	**1,039,285**	**2,034,297**	***2,578,325***	***2,676,299***	***2,677,696***
Selected Indicators								
Debt/Equity	21.1%	19.4%	18.5%	15.8%	13.7%	*12.0%*	*11.9%*	*12.2%*
Debt/Assets	17.4%	16.2%	15.6%	13.6%	12.1%	*10.7%*	*10.6%*	*10.9%*
Real Estate/Equity	87.9%	93.4%	87.3%	91.1%	89.6%	*92.5%*	*91.4%*	*90.6%*
Real Estate/Assets	72.6%	78.2%	73.7%	78.7%	78.8%	*82.6%*	*81.7%*	*80.7%*
Real Estate D/Tota	56.2%	52.5%	51.6%	51.7%	55.2%	*57.8%*	*57.5%*	*56.9%*

Ag Sector Balance Sheet -- US

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- Farmland represents 80+% of farm assets
- Farm real estate debt only 57% of total farm debt
- Low aggregate leverage (approx. 11% D/A)
- Growth rates 1970-2015, continuous compounding:
  - Assets --5.3%
  - Real Estate -- 5.6%
  - Debt – 4.2%
  - Equity – 5.6%
- Absence of active equity market. Some key efforts underway.
- Ag Balance sheet compared to corporate sector vastly different, especially in financial structure. Early stage "financialization".

Headwinds…..

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- Commodity prices (including energy) and normalized world stocks
- Strong dollar, concern about trade
- Monetary policy risks – pr. interest rate uncertainty
- Farm Bill and Policy Environment
  - Crop insurance attacks continue
  - Divisions in the Ag coalition over conservation and environmental policy, intersection with RFS, CRP, etc.

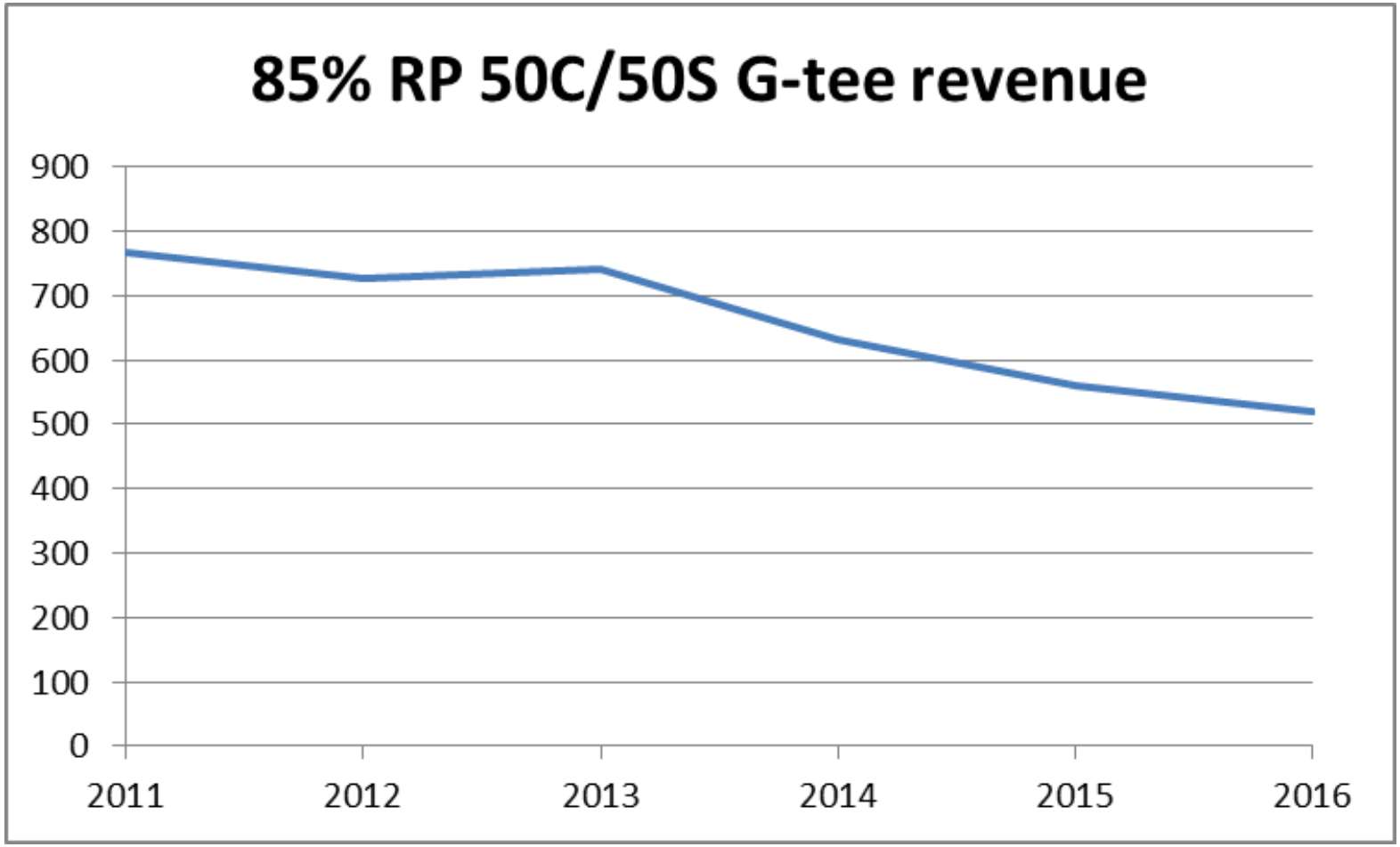
Farmland Values have responded, but more smoothly and to lesser degree than many have predicted.

But, other financial markets have had higher volatility …

Continued decline in Proj. Prices

	2011	2012	2013	2014	2015	2016
Corn						
Projected Price	6.01	5.68	**5.65**	**4.62**	**4.15**	$3.86
Harvest Price	**6.32**	**7.5**	4.39	3.49	3.82	
Soybeans						
Projected Price	**13.49**	12.55	12.87	**11.36**	**9.74**	$8.85
Harvest Price	12.14	**15.39**	12.87	9.65	8.91	

Substantial Decline in Guarantees



Tailwinds…..

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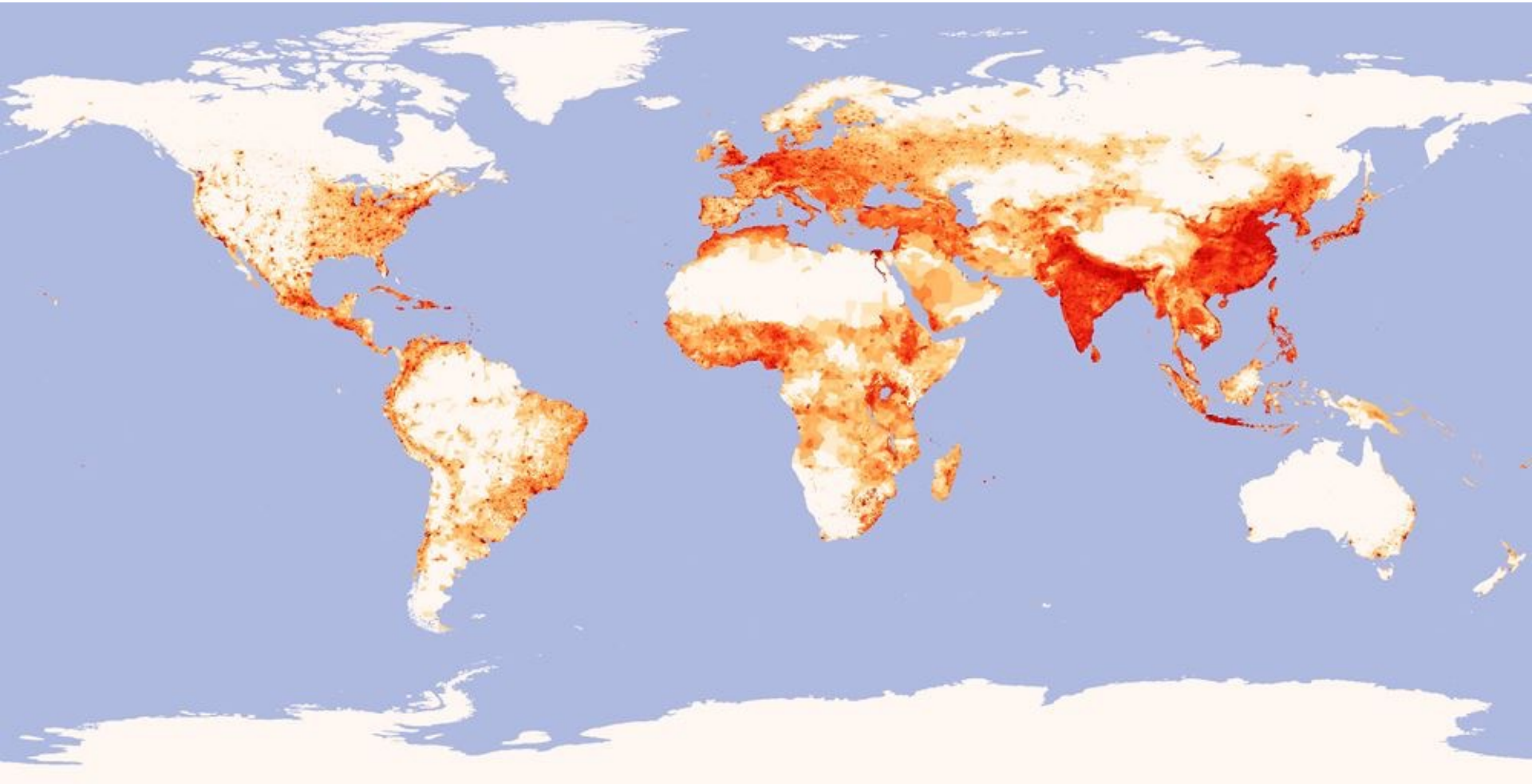
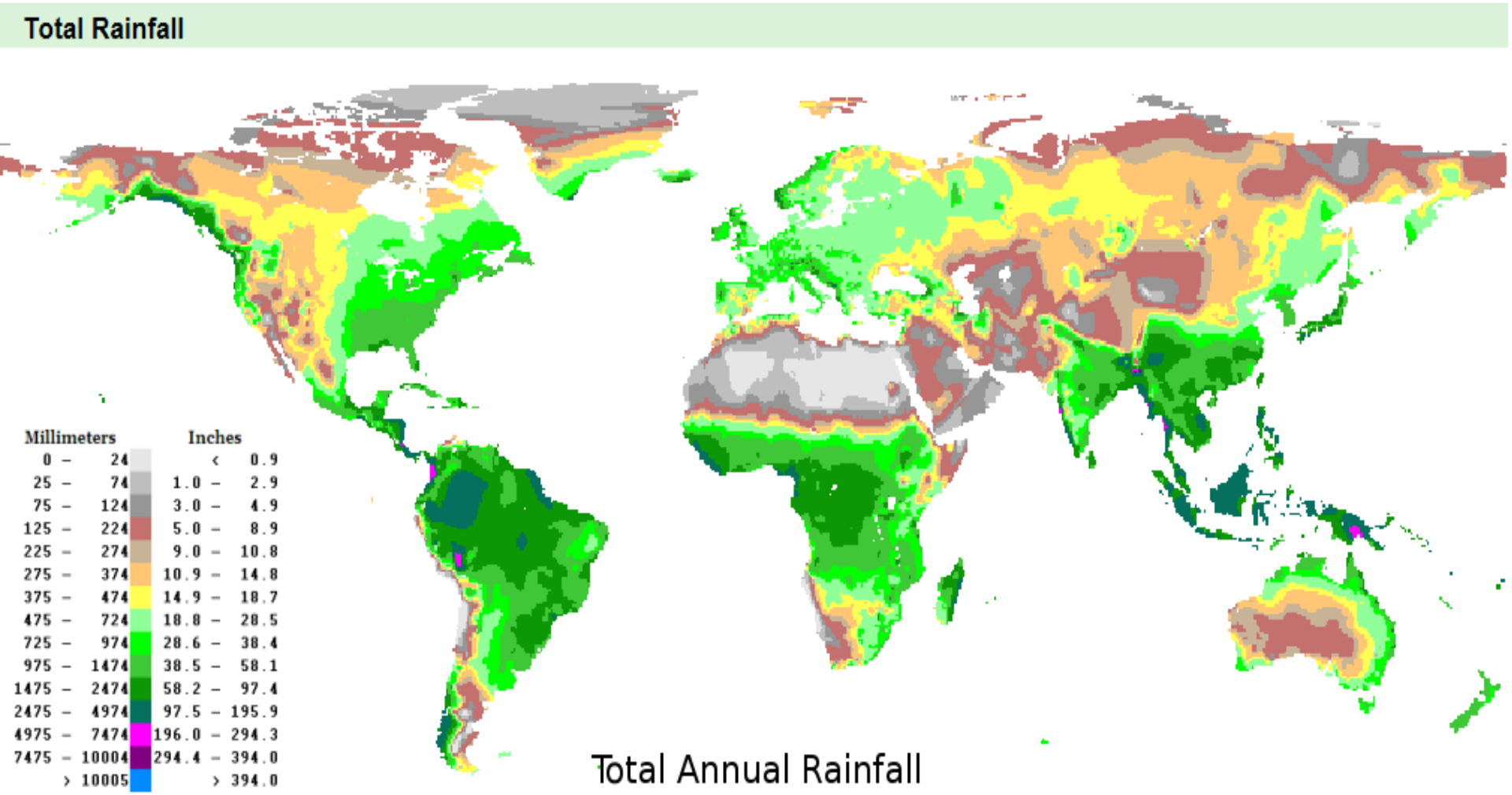
- Long term thesis for food consumption is quite strong
  - "World Virtual Water Trade" network intact
  - Stable relationship between calories and income, SOI curve
- Low leverage, very low turnover rates, thin markets
- Low correlation with financials, and positive correlation with inflation make farmland a good portfolio anchor asset.
- Tax advantage potential
- Strong collateral positions
- Crop insurance
- Low interest rates
- Technology-related output improvements (factor productivity), and new "analytics" based efforts

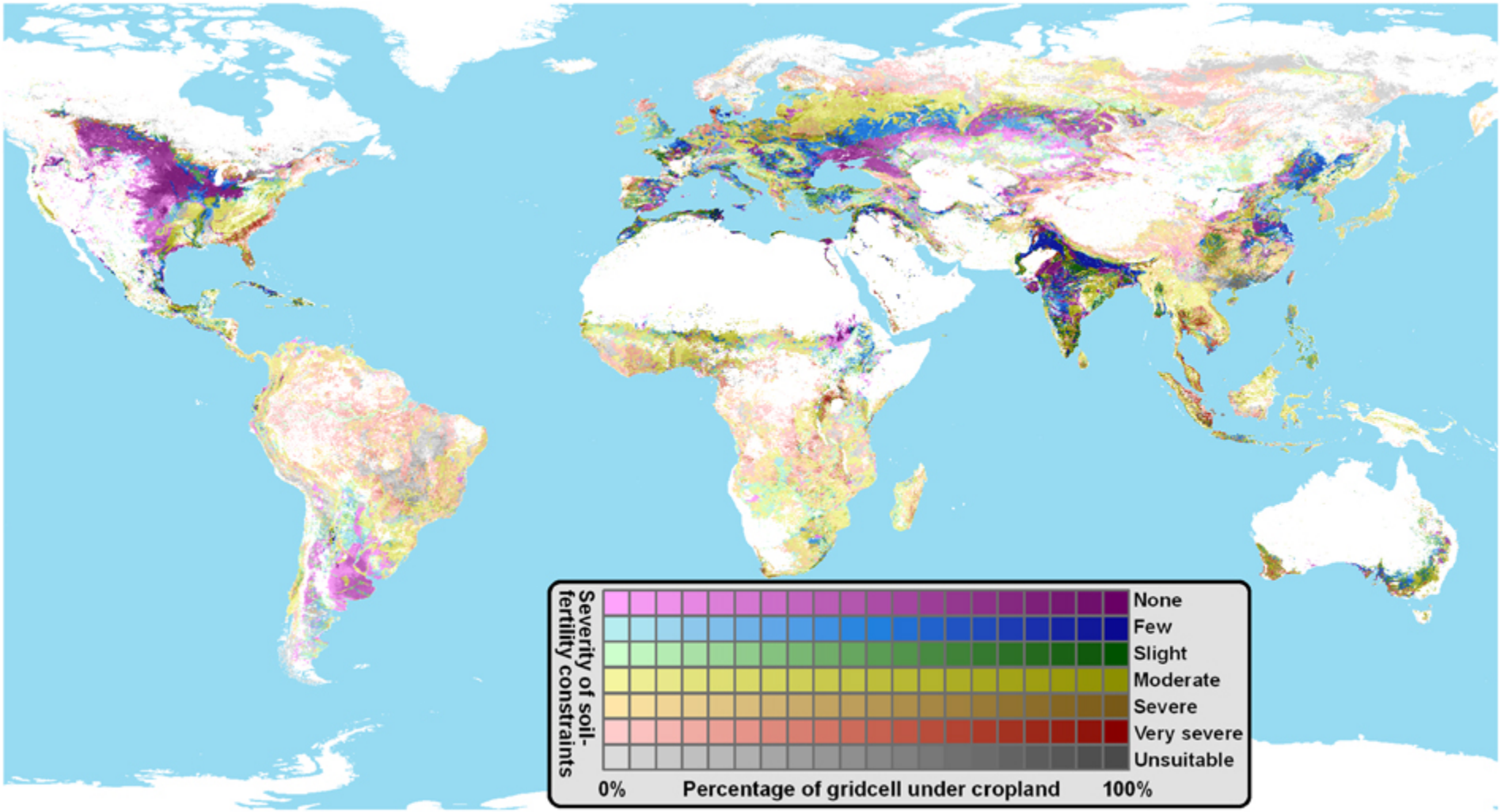
Where do people live?



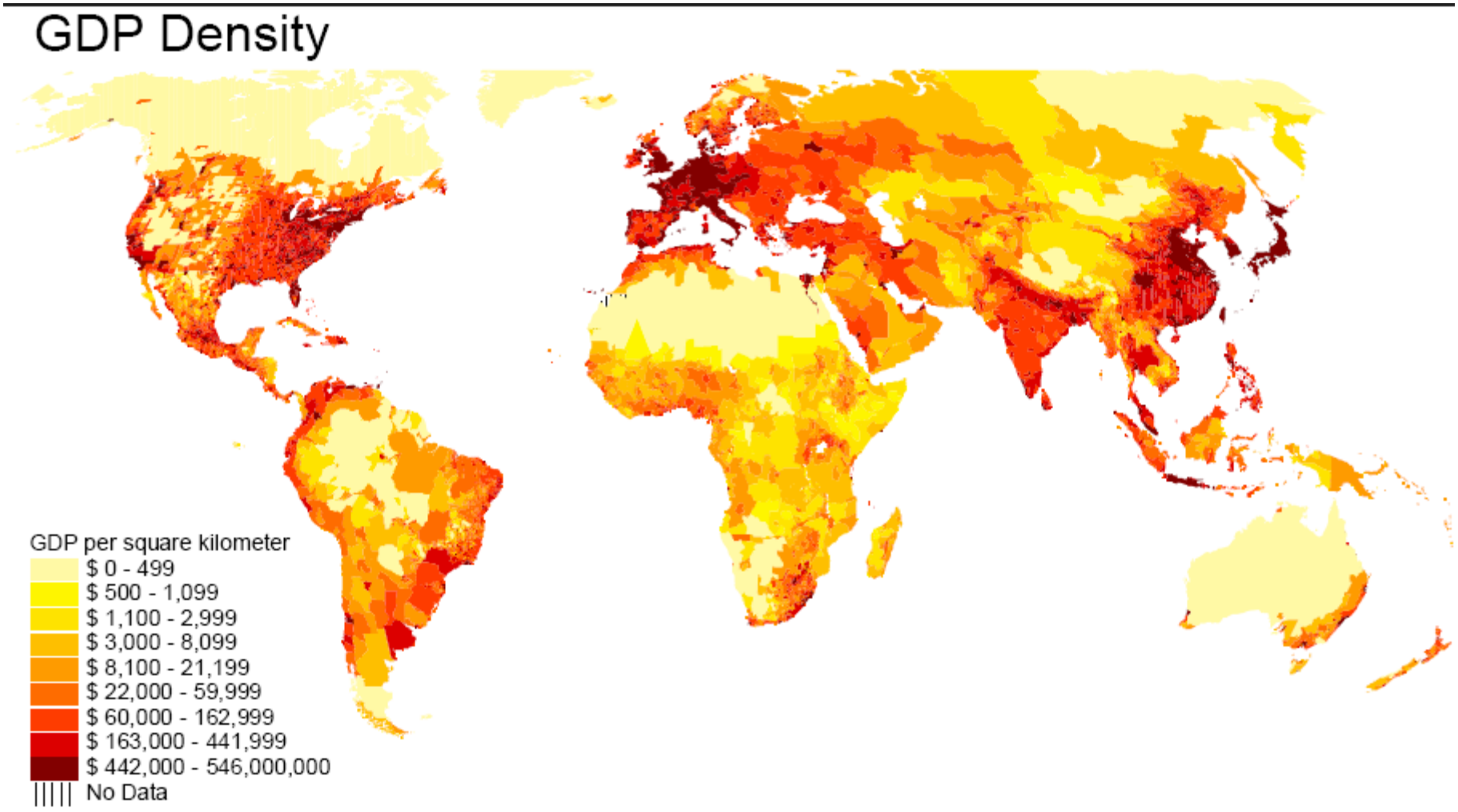
Where does rain fall?



Where are crop suitable soils?



Where is purchasing power?



Tailwinds…..

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- Low leverage, very low turnover rates, thin markets
- Low correlation with financials, and positive correlation with inflation make farmland a good portfolio anchor asset.
- Tax advantages (both income and basis related)
- Strong collateral and B/S positions from prior years
- Crop insurance countercyclicality, ARC payments
- Low interest rates
- Technology-related output improvements (factor productivity), and new "analytics" based efforts

Today's Ag Tech Landscape – from Granular's perspective

AGRONOMY

BUSINESS

PRECISION AG

THE CLIMATE CORPORATION
AGVERDICT
encirca
FarmersEdge
pct Precision Cropping Technologies Pty Ltd
THE AGRI-DATA SOLUTION
CropMetrics Yield Optimization Technology
R7 Tool By WinField
FARMserver
TOPCON Precision Agriculture
echelon
MapShots
SST
SMS BASIC
Premier Crop Systems

MACHINE TELEMETRY

Trimble
FARMOBILE
CASE IH AGRICULTURE
640Labs
APEX Farm Management Software
ONFARM GROW INFORMED
AGCO

BENCHMARKING

FARMLINK
FARMERS BUSINESS NETWORK
RED SKY

FARM MANAGEMENT SOFTWARE

AgConnections
AgSquared
intelligent IAGRI agriculture
conservis
FARM AT HAND
FarmLogs
Granular
Agworld connecting the industry.

AG ACCOUNTING

PROPACK
FAMOUS SOFTWARE
RED WING SOFTWARE
AgVision Agribusiness Software
Agvance
FARM WORKS SOFTWARE

LIVESTOCK MANAGEMENT SOFTWARE

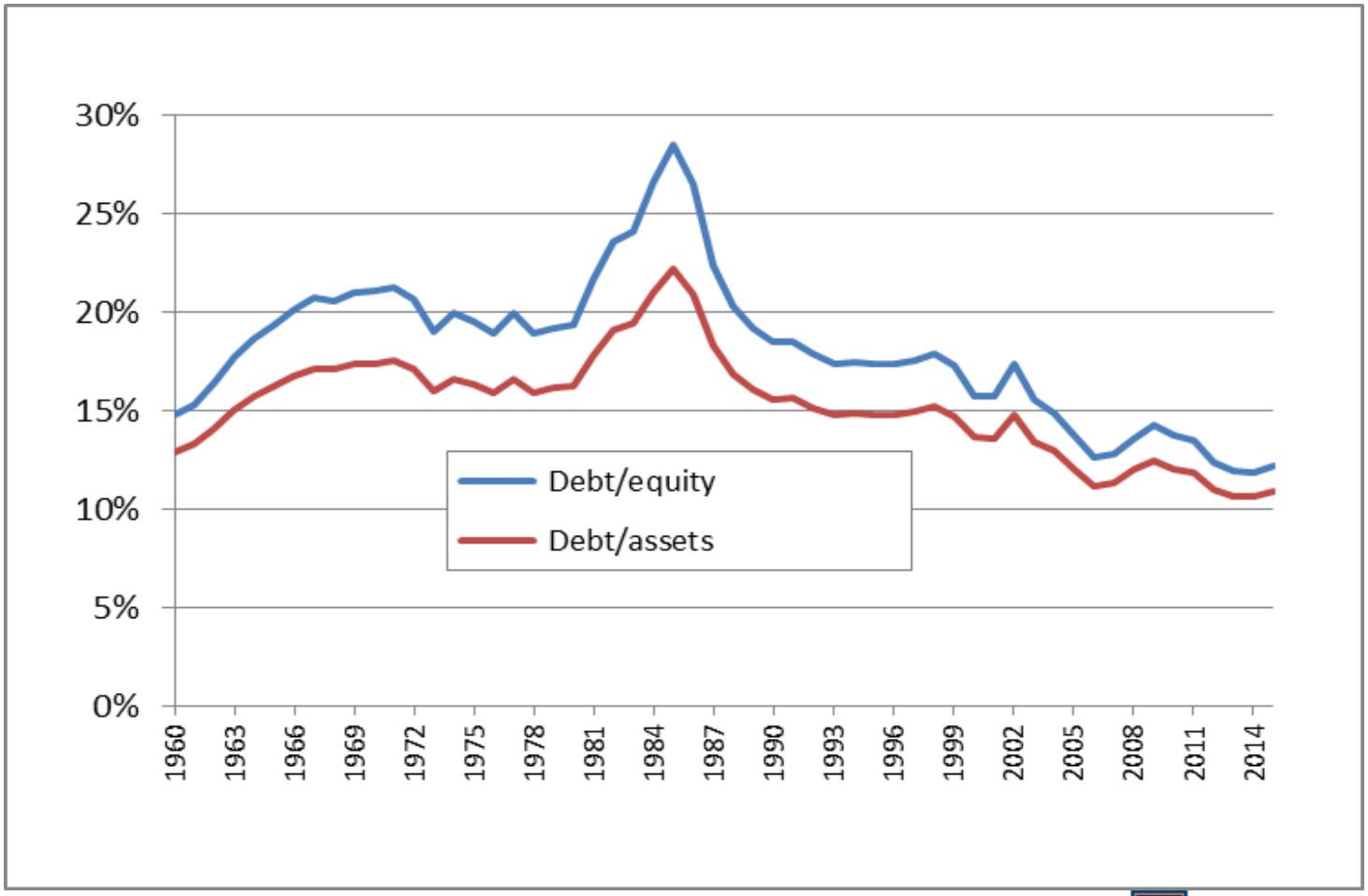
BoviSync
Dairy One
vas
DeLaval
fieldsync
Kingswood COMPUTING Farm recording made easy
Farmeron
DHI-PROVO

Common to be asked about future path

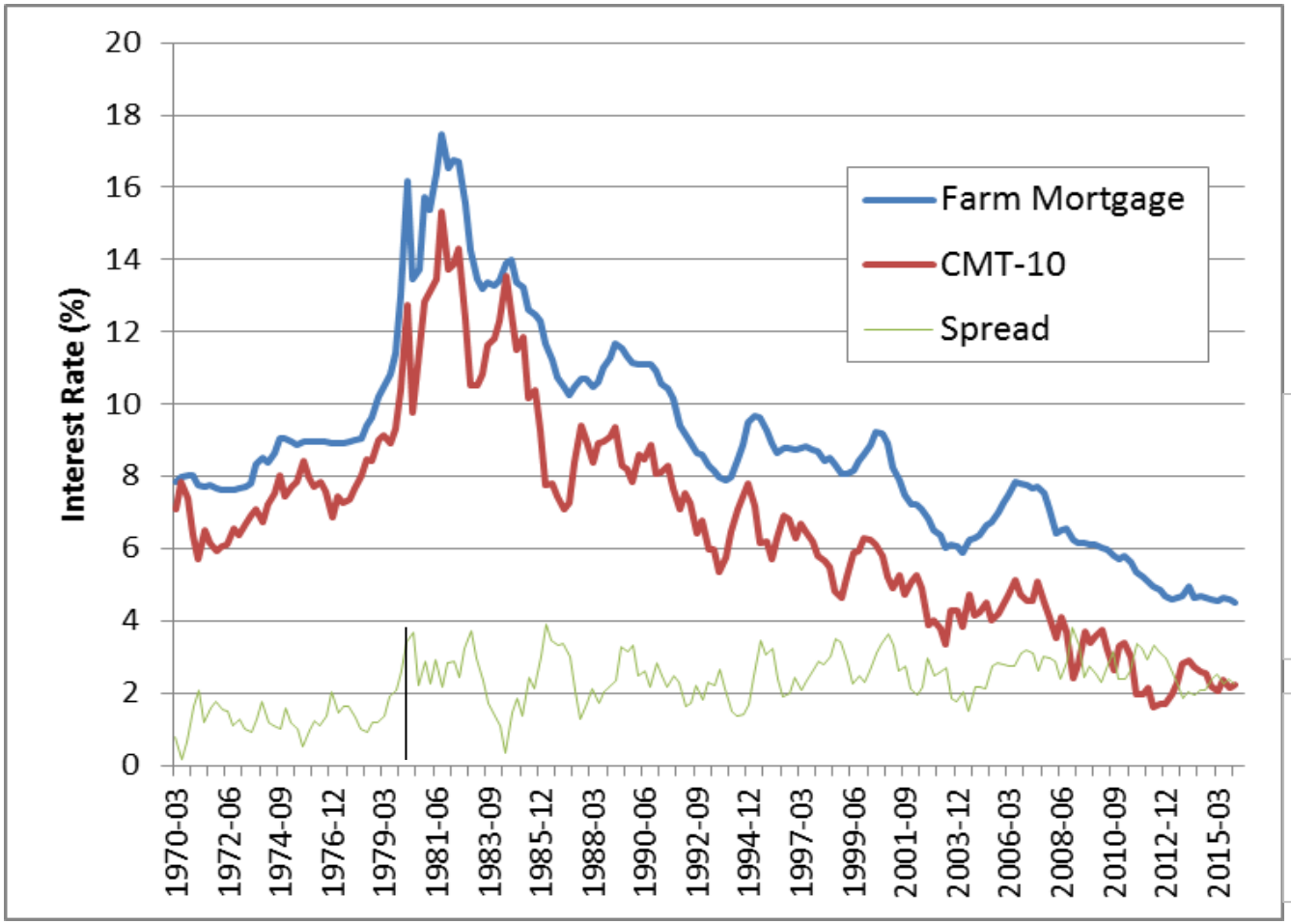
"Is this time different?"

…yes, I think

Aggregate US Debt Ratios, US Ag Sector



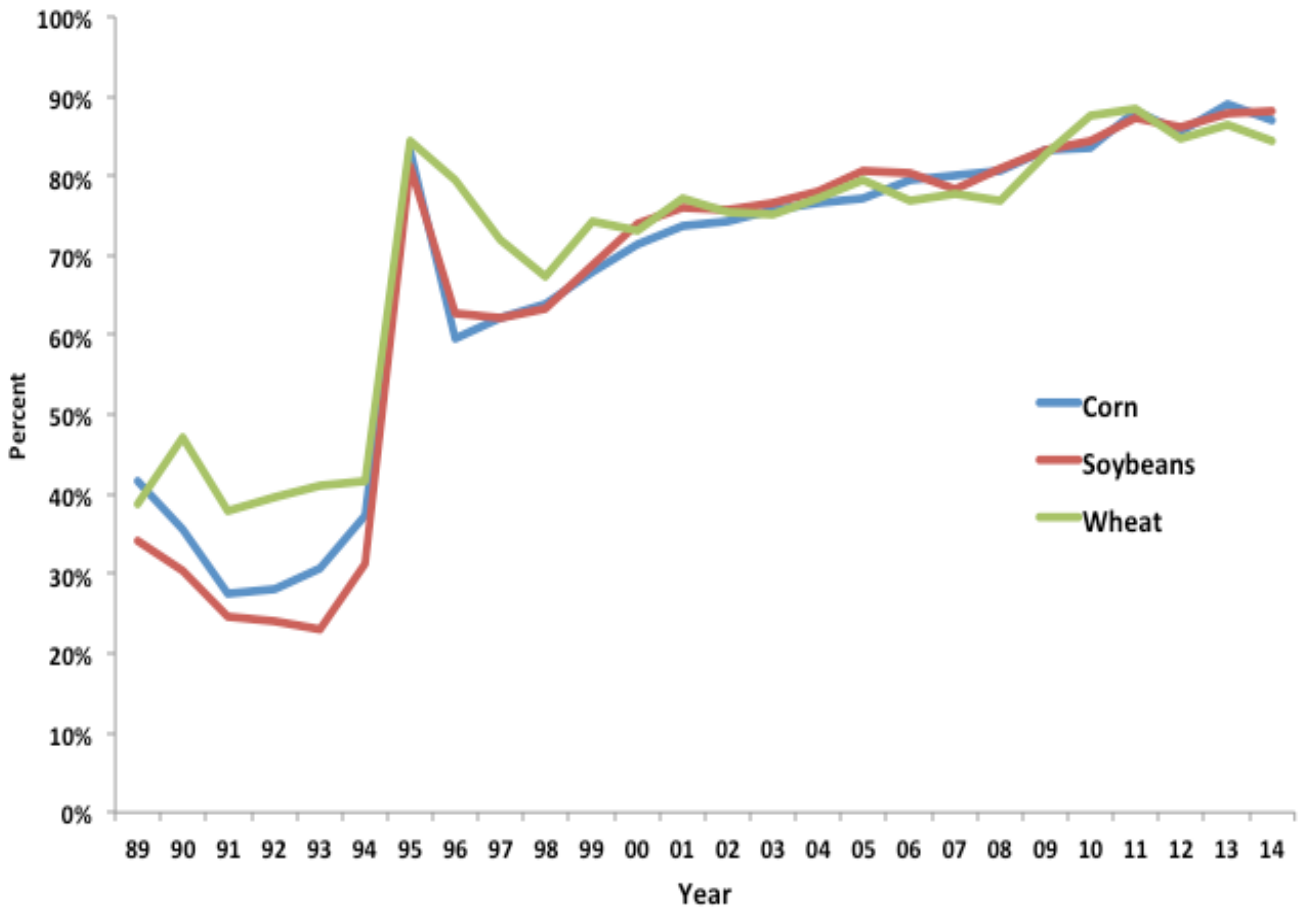
Farm mortgage interest rates and funding relationships



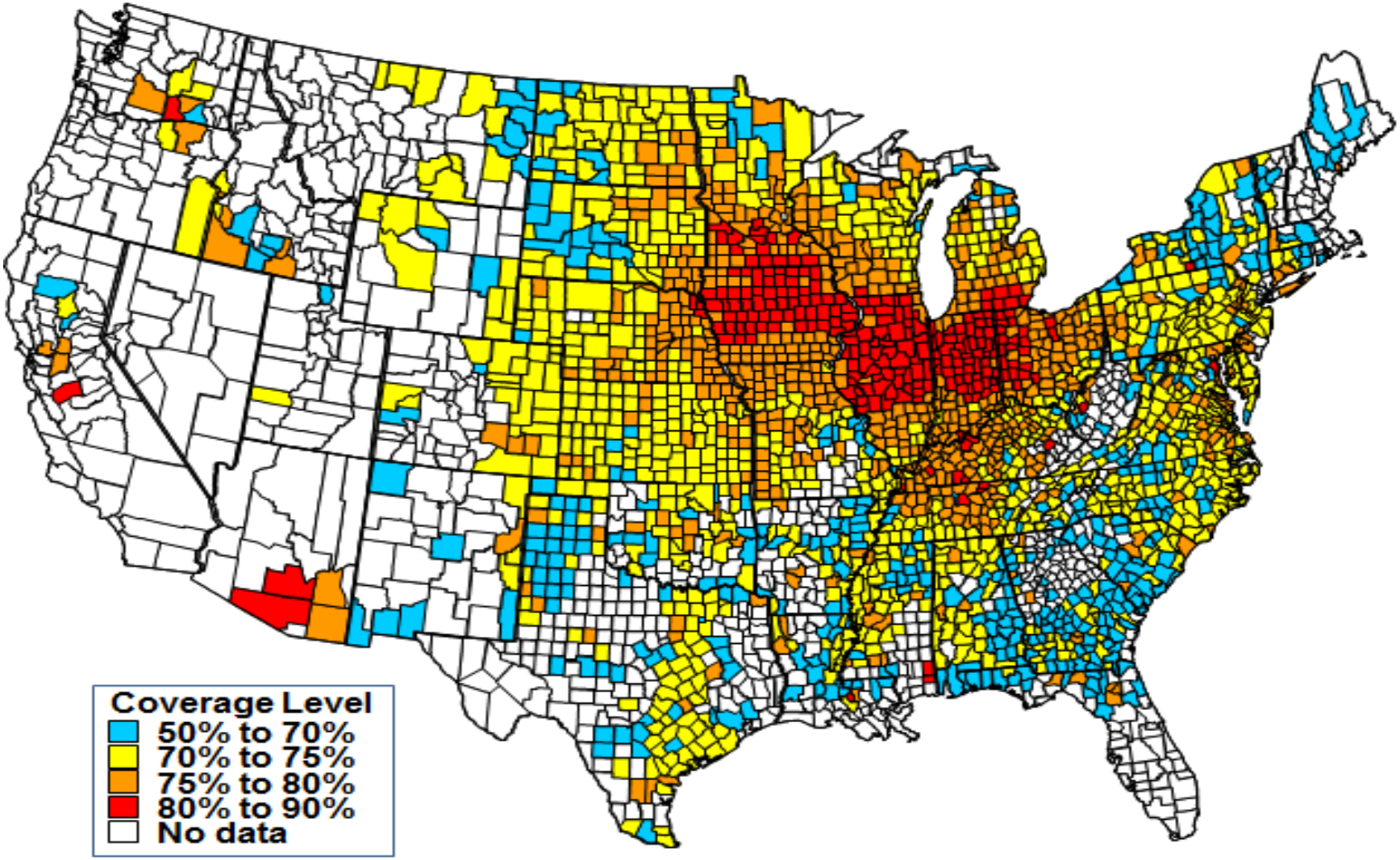
1980s loans could include:
80% LTV,
40-year amortization

<u>Ave Spread</u>
1970-79 = 1.29%
1980-2015 = 2.52%

Percent Acres Insured, U.S.

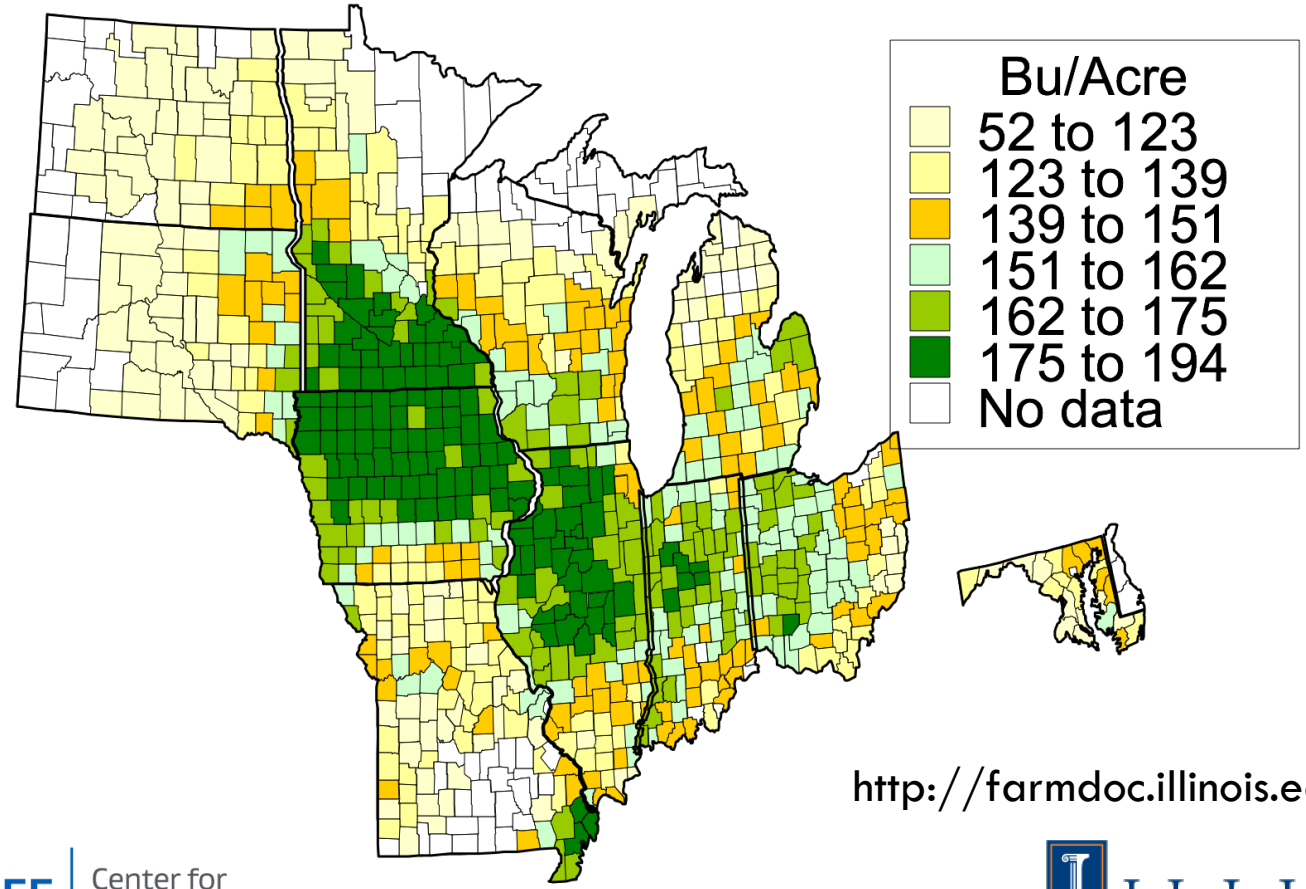


Revenue Insurance Election - Corn



What are prospects for future?

2016 Expected Corn Yields



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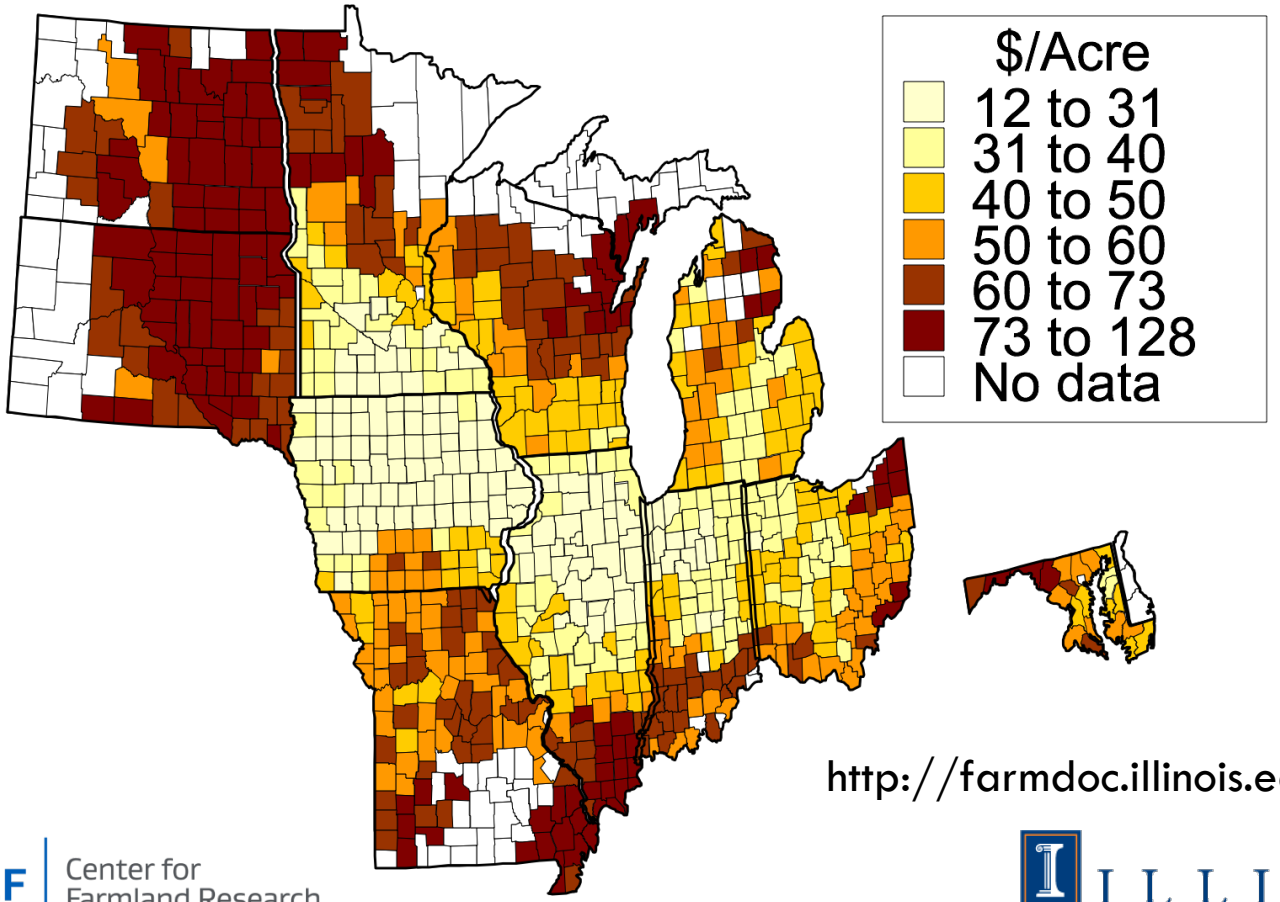
Crop insurance impacts margins

2016 Corn RP 85% Premium



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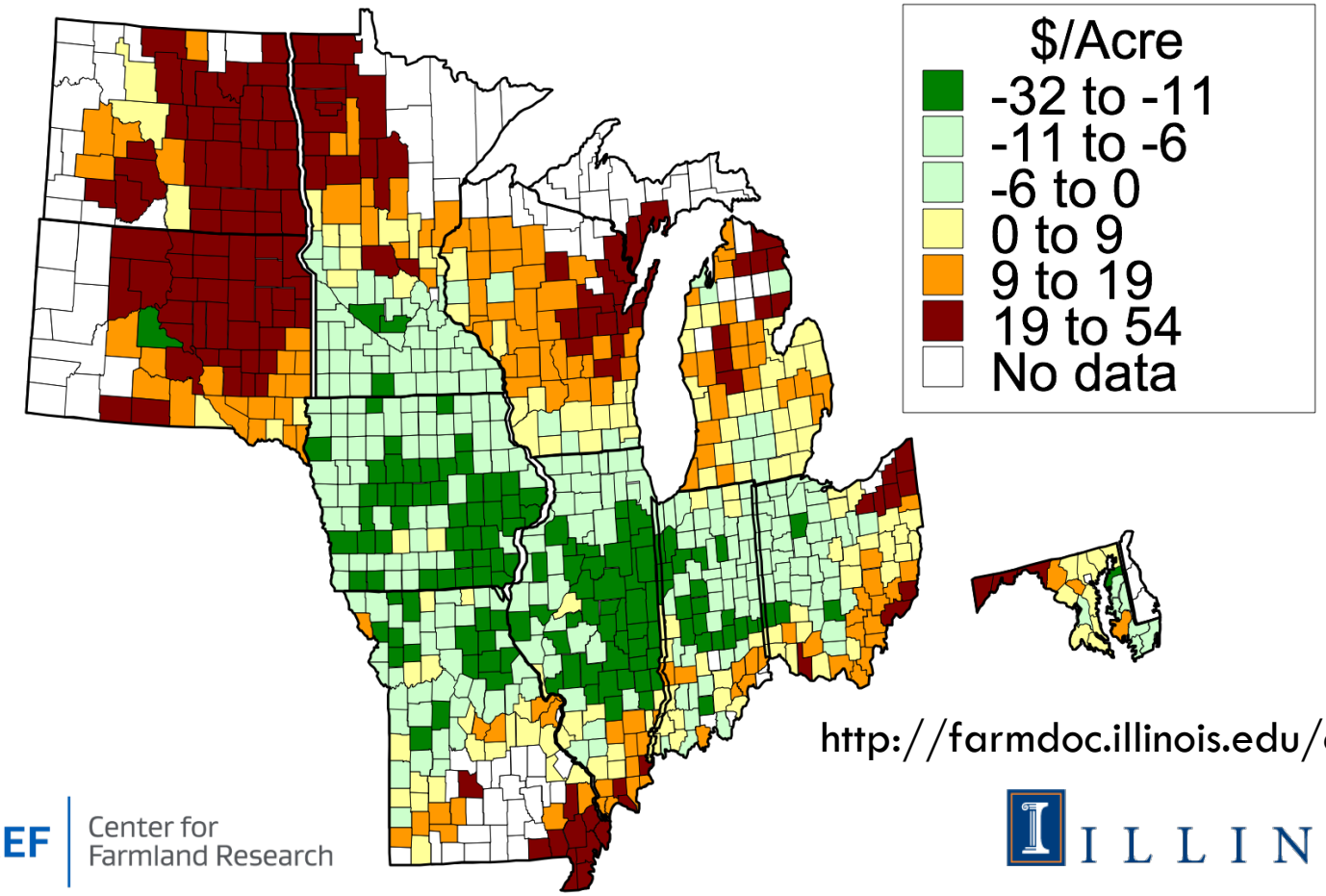
Many areas positive contribution

2016 Corn Net Cost Insurance RP85



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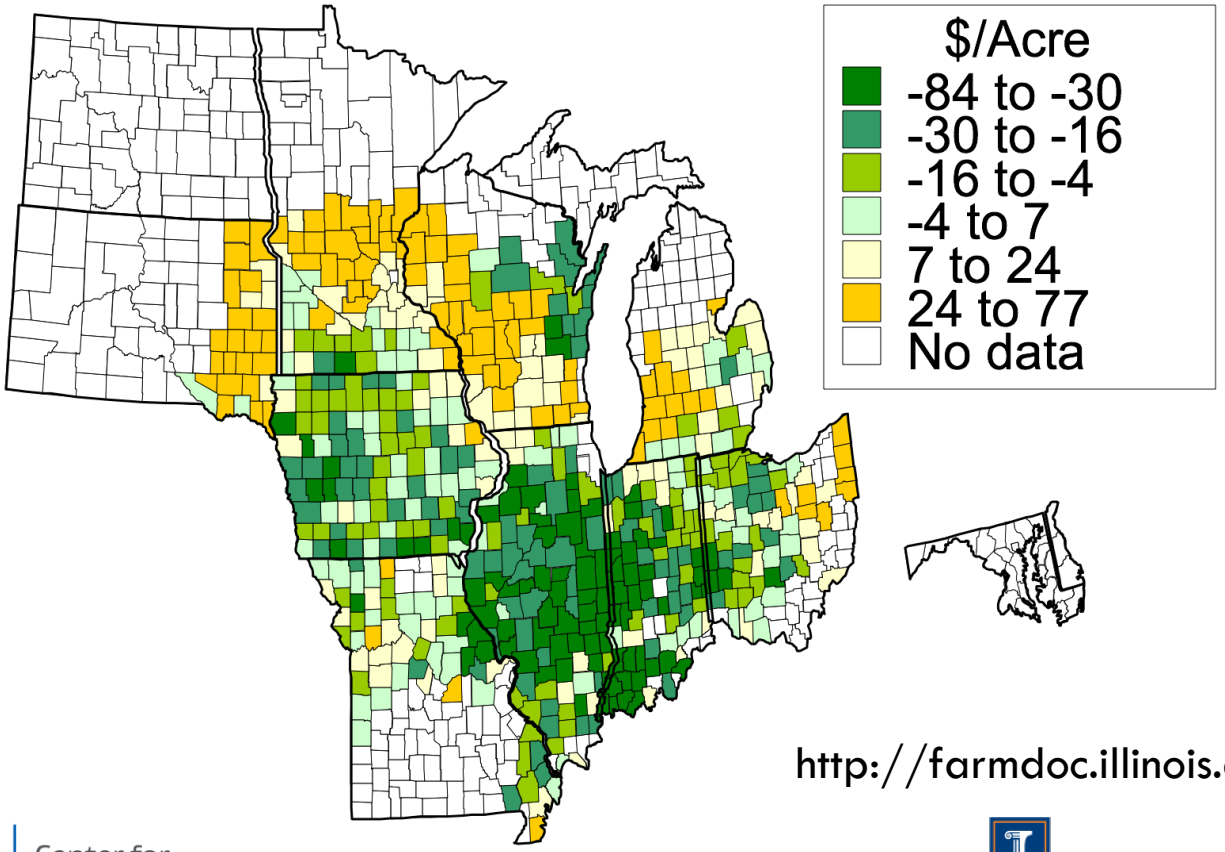
Area or Group products

2016 Corn Net Cost Insurance ARP90



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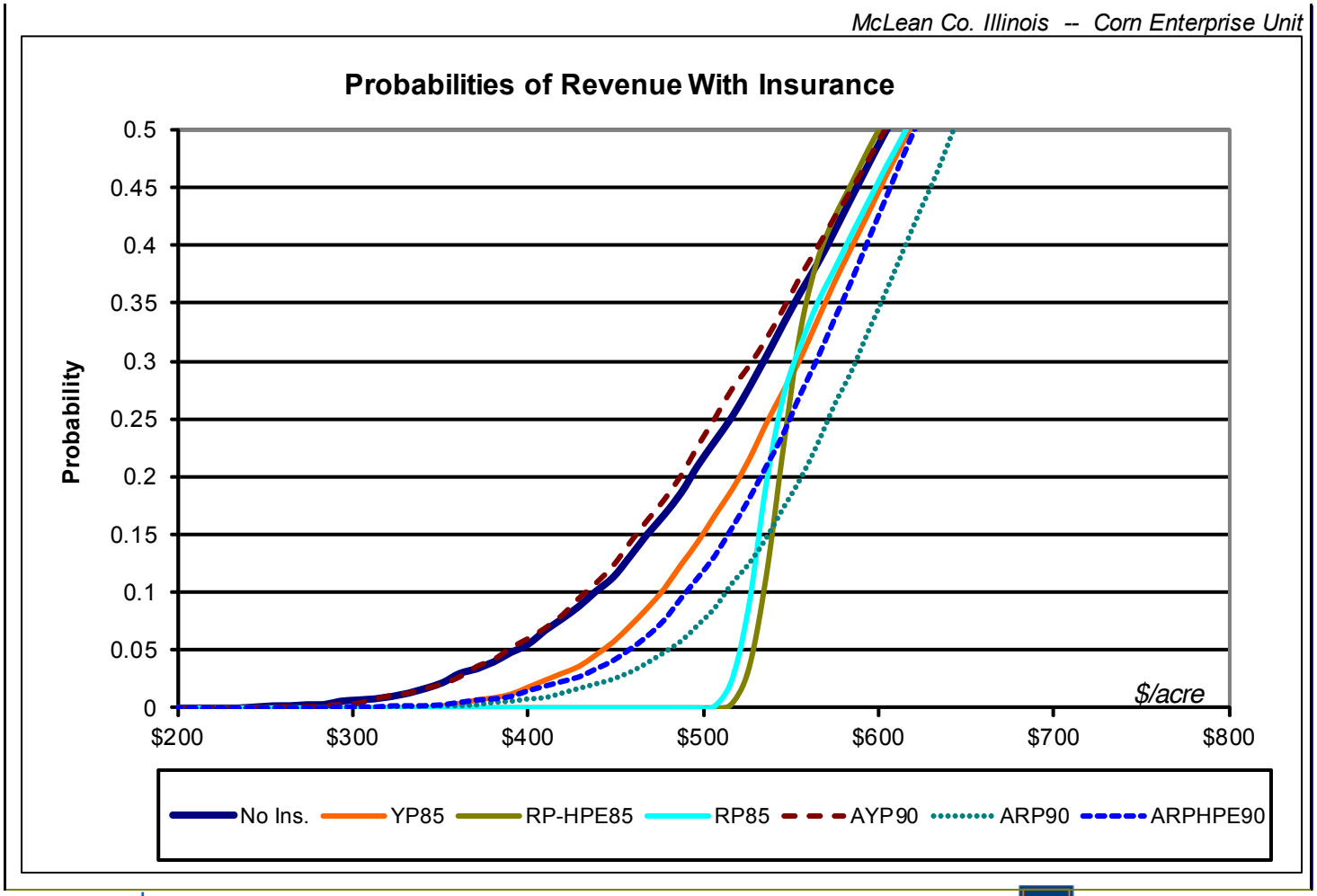
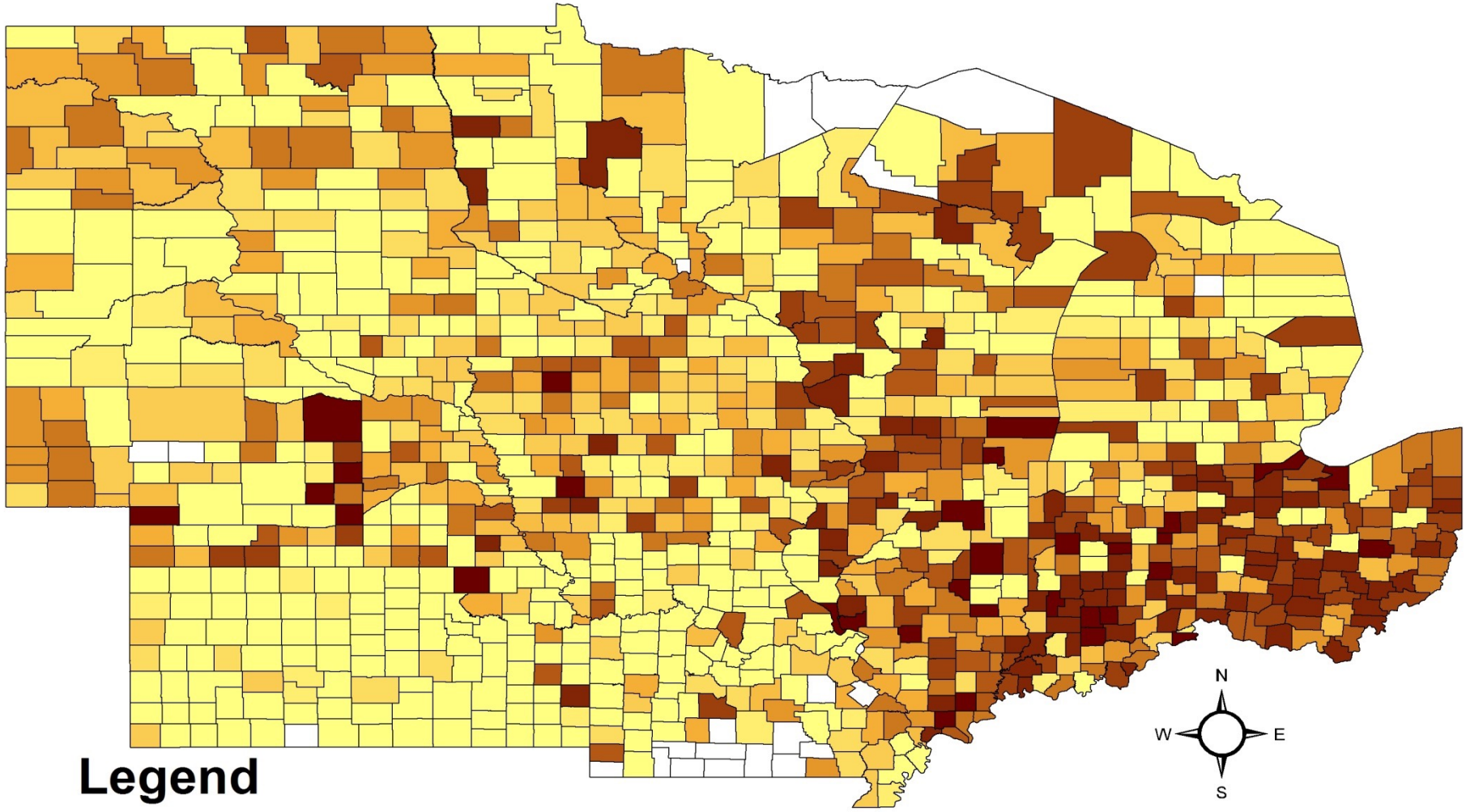
Impact on lower tail of revenue



2015 ARC Payments - Average

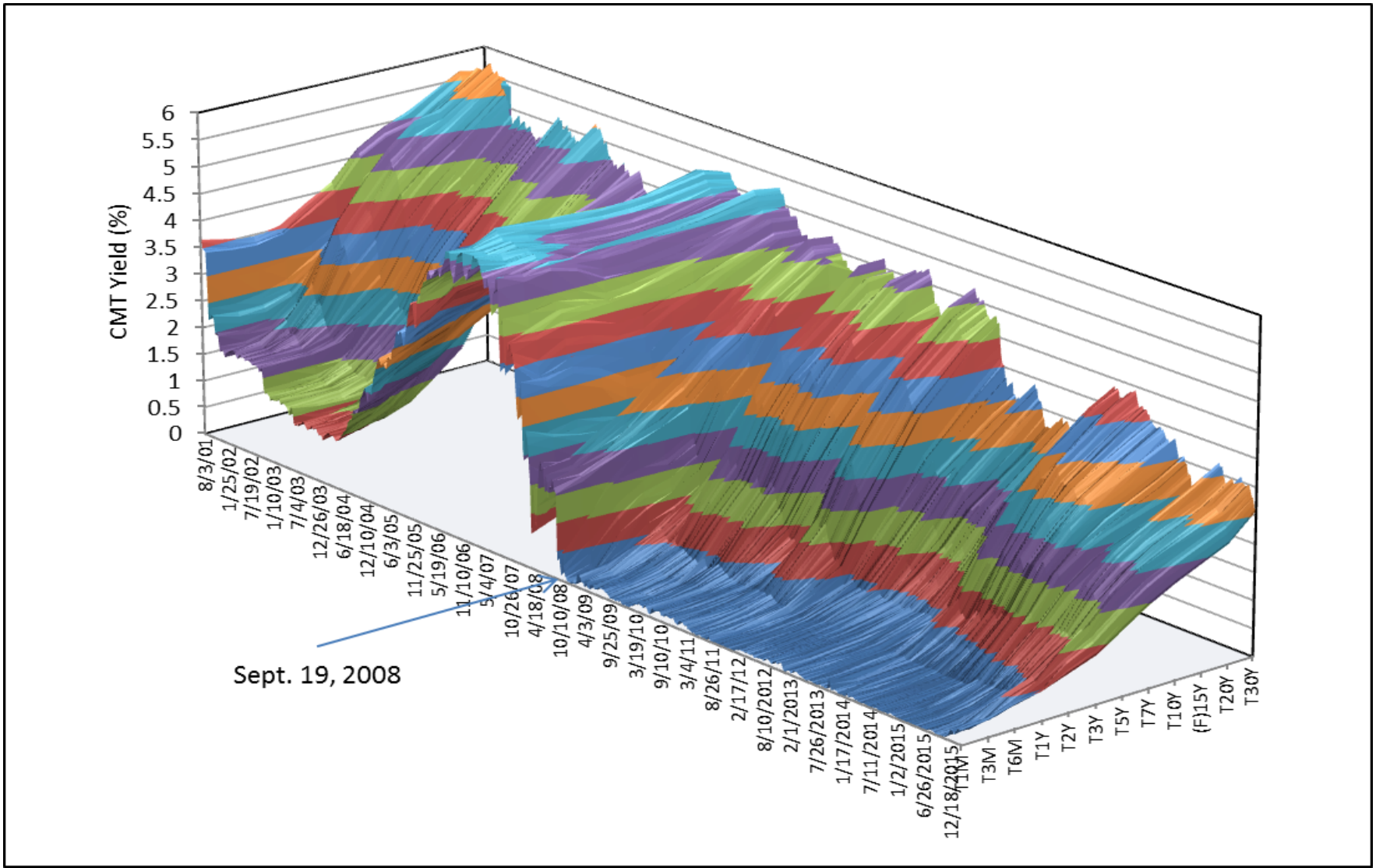


Legend

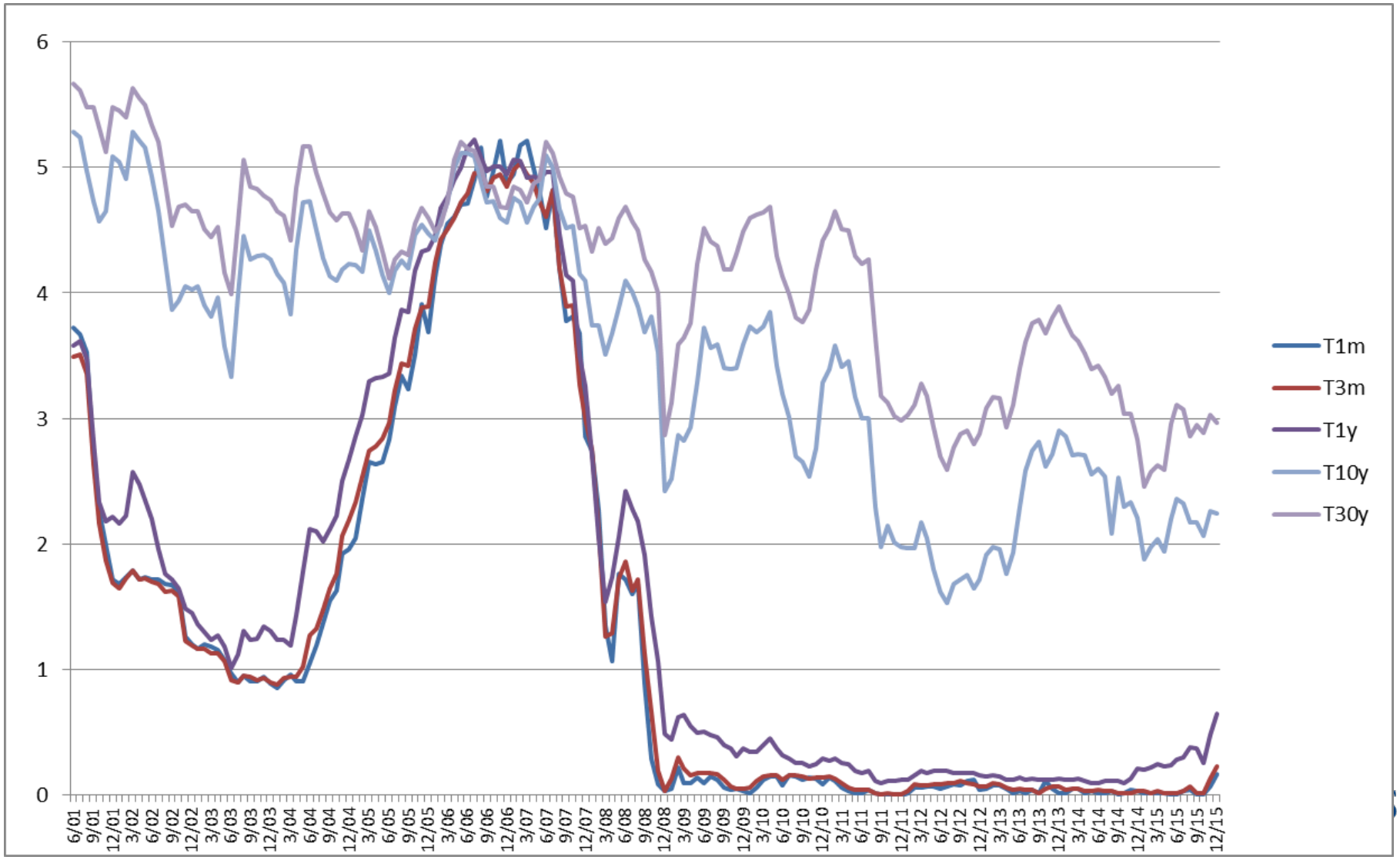
$0.00 - $5.59	$22.30 - $28.85	$42.17 - $49.28	$63.47 - $70.48
$5.60 - $15.29	$28.86 - $35.57	$49.29 - $56.46	$70.49 - $76.90
$15.30 - $22.29	$35.58 - $42.16	$56.47 - $63.46	$76.91 - $90.44

Data source: FEDH.15

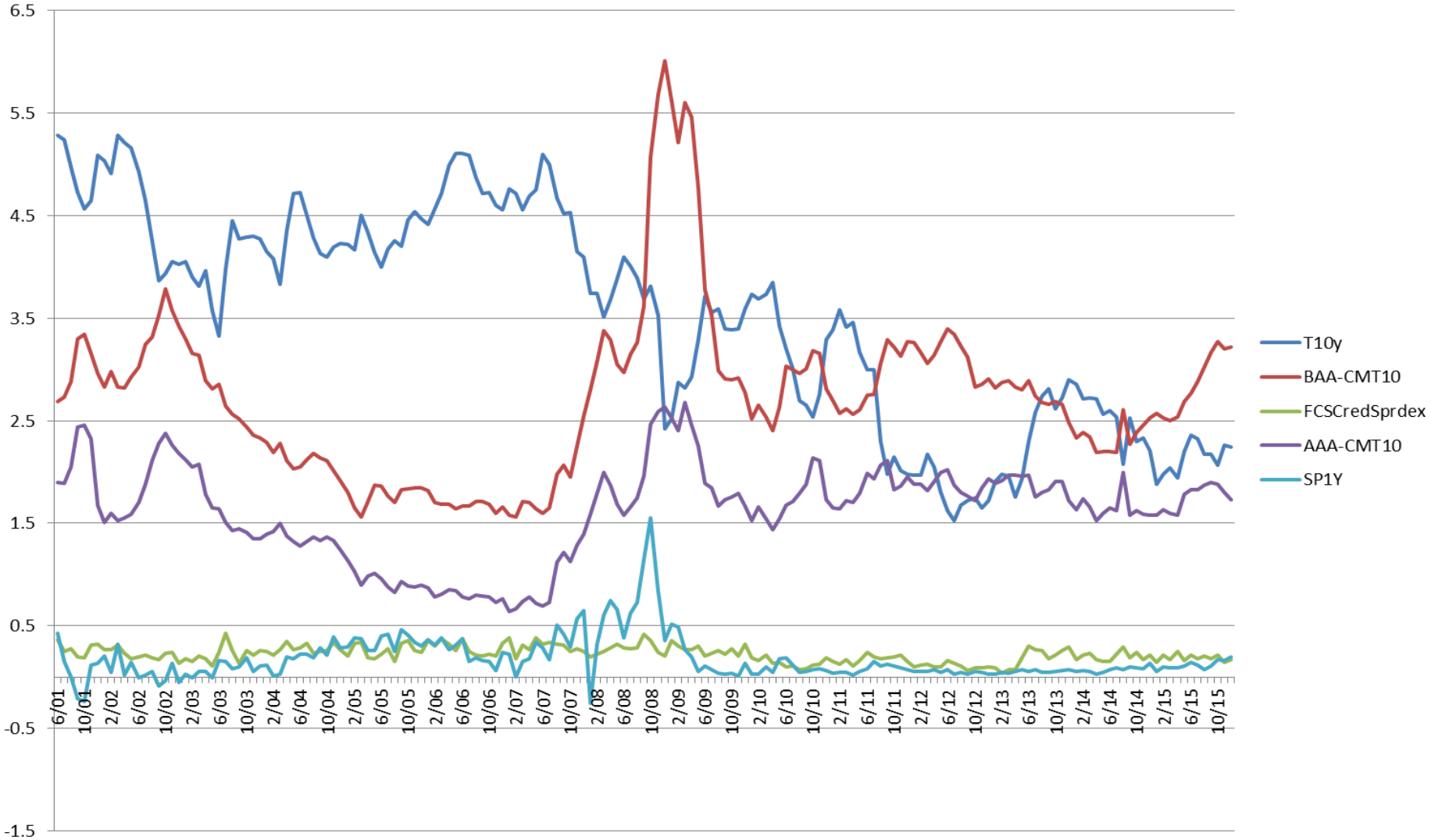
Yield Curve and Cap rate relationships



What rates does Fed impact?



Interest rate market relatives



What are the largest risks to Farmland?

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- Economy wide impacts of <u>sudden</u> unexpected change in Monetary Policy or unwieldy unwinding. FOMC 3/16 minutes confirmed market expectations of slow change.
  - Cap rate linkages uncertain, not ag-only event however
  - Important trade impacts as well
  - Pro inflation counter argument
- Significant Change in Future Crop Insurance provisions (highly unlikely, though subsidy under increasing scrutiny) or other fundamental Farm Bill revisions
- Global slowdown in income growth (e.g., China and proxies for population growth/income growth uncertain)

Near term Farmland Market Issues

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- 5-15% further reductions in top half of cash rents seems possible.
- Interquartile range of sales prices steady to slightly lower – healthy income expected to return, Iowa down more than IL
- Working capital crunches, stress for low tenure operations
- Continued movement toward cash and flex cash rent – separation of ownership and operational returns becomes more accepted/understood.
- World market adjustments to more normal stocks
- Debt levels could become more efficient – perhaps not the worst time to add fixed-rate debt under real estate.

Near term Farmland Market Issues

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- No major impacts on total acreage transacted – aging population arguments have been difficult to confirm, low turnover remains norm.
- Big Data issues – information and decision systems that rely on high resolution or high frequency information increasingly matter as an "input"
- International diversification likely to be attractive as well as across types of assets for investors

Future Issues and Implications for Farmland

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- "Financialization" is likely for the sector.
- Equity or indexing vehicles very positive for sector
- Rationalization of recent income/norms, reduced importance of Commodity programs
- Farmland remains solid investment on risk-adjusted basis, adjustments in near term can be painful balance sheet effects, continual effort to form income expectations as rates rise
- Some positive outcomes for capital providers likely

Contact and info. sources

http://farmdoc.illinois.edu/cropins/

http://farmdocdaily.illinois.edu/

http://farmland.illinois.edu/

Questions/Discussion

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Farmland: time and holding periods

Choose asset

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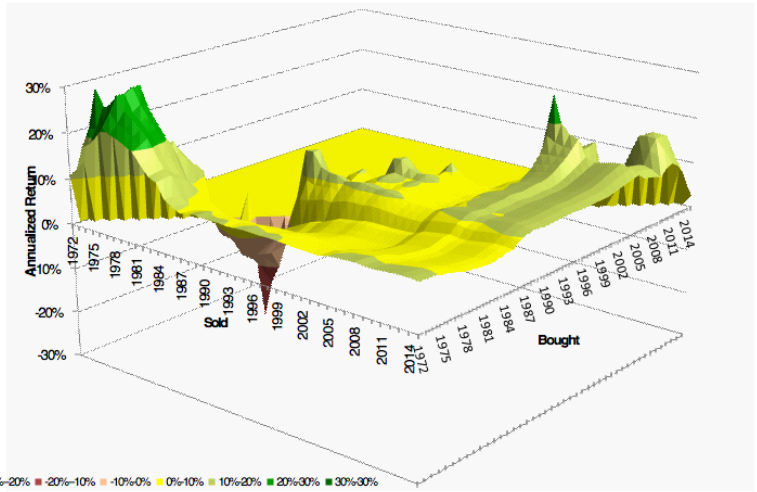
Sell (end of year)

Buy (beginning of year)

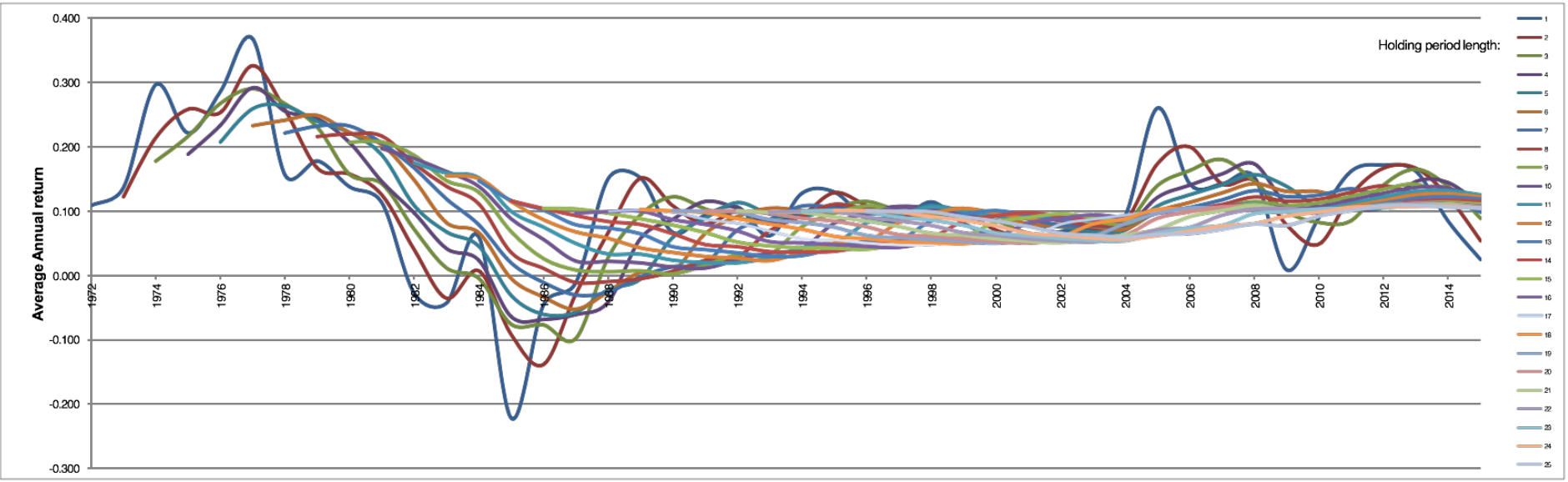
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1972	10.9%	12.3%	17.8%	18.9%	20.8%	23.3%	22.2%	21.6%	20.7%	19.7%	17.5%	15.5%	14.7%	11.6%	10.4%	9.7%	10.0%	10.3%	10.1%	10.0%	10.1%	9.9%	10.0%	10.1%	10.1%	10.0%	10.1%	10.0%	9.9%	9.7%	9.6%	9.6%	9.6%	10.0%	10.1%	10.2%	10.4%	10.1%	10.1%	10.2%	10.4%	10.5%	10.5%	10.3%
1973		13.7%	21.4%	21.7%	23.4%	25.9%	24.1%	23.2%	22.0%	20.8%	18.2%	15.9%	15.1%	11.7%	10.4%	9.6%	9.9%	10.2%	10.0%	10.0%	10.0%	9.9%	10.0%	10.1%	10.1%	10.0%	10.1%	10.0%	9.8%	9.7%	9.6%	9.5%	9.5%	10.0%	10.1%	10.2%	10.4%	10.1%	10.1%	10.2%	10.4%	10.5%	10.5%	10.3%
1974			29.7%	25.9%	26.8%	29.2%	26.4%	24.9%	23.2%	21.7%	18.7%	16.2%	15.2%	11.5%	10.2%	9.3%	9.7%	10.0%	9.8%	9.8%	9.8%	9.7%	9.8%	10.0%	9.9%	9.8%	9.9%	9.8%	9.7%	9.5%	9.4%	9.4%	9.4%	9.9%	10.0%	10.1%	10.3%	10.0%	10.0%	10.1%	10.3%	10.4%	10.4%	10.2%
1975				22.1%	25.3%	29.0%	25.5%	24.0%	22.2%	20.6%	17.4%	14.7%	13.8%	10.0%	8.7%	7.9%	8.4%	8.8%	8.7%	8.7%	8.8%	8.7%	8.9%	9.1%	9.1%	9.1%	9.2%	9.1%	9.0%	8.9%	8.8%	8.7%	8.8%	9.3%	9.4%	9.6%	9.7%	9.5%	9.5%	9.6%	9.8%	10.0%	10.0%	9.8%
1976					28.6%	32.6%	26.7%	24.4%	22.2%	20.3%	16.7%	13.8%	12.9%	8.8%	7.5%	6.8%	7.4%	7.9%	7.8%	7.9%	8.1%	8.0%	8.2%	8.5%	8.5%	8.5%	8.6%	8.6%	8.5%	8.4%	8.3%	8.3%	8.3%	8.9%	9.0%	9.2%	9.4%	9.1%	9.1%	9.3%	9.5%	9.7%	9.7%	9.5%
1977						36.8%	25.7%	23.0%	20.7%	18.7%	14.8%	11.9%	11.1%	6.8%	5.6%	5.0%	5.8%	6.5%	6.5%	6.7%	6.9%	6.9%	7.2%	7.5%	7.6%	7.6%	7.8%	7.8%	7.7%	7.6%	7.6%	7.6%	7.7%	8.3%	8.4%	8.6%	8.8%	8.6%	8.6%	8.8%	9.0%	9.2%	9.2%	9.0%
1978							15.6%	16.7%	15.7%	14.6%	10.9%	8.2%	7.9%	3.6%	2.6%	2.2%	3.4%	4.3%	4.5%	4.8%	5.2%	5.3%	5.7%	6.1%	6.2%	6.3%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.7%	7.4%	7.6%	7.8%	8.0%	7.8%	7.8%	8.1%	8.3%	8.5%	8.5%	8.4%
1979								17.8%	15.8%	14.3%	9.7%	6.8%	6.6%	2.0%	1.1%	0.9%	2.2%	3.3%	3.6%	4.0%	4.5%	4.6%	5.1%	5.5%	5.7%	5.9%	6.1%	6.2%	6.2%	6.2%	6.2%	6.3%	6.4%	7.1%	7.3%	7.5%	7.8%	7.6%	7.6%	7.9%	8.1%	8.3%	8.3%	8.2%
1980									13.8%	12.5%	7.2%	4.2%	4.5%	-0.5%	-1.1%	-1.1%	0.6%	2.0%	2.4%	3.0%	3.5%	3.7%	4.3%	4.8%	5.1%	5.2%	5.6%	5.7%	5.7%	5.7%	5.7%	5.8%	6.0%	6.7%	6.9%	7.2%	7.5%	7.2%	7.3%	7.6%	7.8%	8.1%	8.1%	7.9%
1981										11.3%	4.0%	1.2%	2.4%	-3.1%	-3.3%	-3.0%	-0.9%	0.7%	1.3%	2.0%	2.7%	3.0%	3.7%	4.3%	4.5%	4.8%	5.1%	5.3%	5.3%	5.3%	5.4%	5.5%	5.6%	6.4%	6.7%	7.0%	7.2%	7.0%	7.1%	7.4%	7.7%	7.9%	7.9%	7.8%
1982											-2.8%	-3.5%	-0.5%	-6.4%	-6.0%	-5.2%	-2.6%	-0.5%	0.3%	1.1%	2.0%	2.3%	3.1%	3.8%	4.1%	4.4%	4.8%	5.0%	5.0%	5.0%	5.1%	5.2%	5.4%	6.2%	6.5%	6.8%	7.1%	6.9%	6.9%	7.2%	7.5%	7.8%	7.8%	7.7%
1983												-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%	5.4%	5.5%	5.5%	5.5%	5.6%	5.8%	6.6%	6.9%	7.2%	7.5%	7.2%	7.3%	7.6%	7.9%	8.2%	8.2%	8.0%
1984													6.0%	-9.2%	-7.7%	-6.1%	-2.2%	0.5%	1.4%	2.3%	3.2%	3.5%	4.3%	5.0%	5.3%	5.5%	5.9%	6.1%	6.1%	6.0%	6.1%	6.1%	6.3%	7.1%	7.4%	7.7%	8.0%	7.7%	7.8%	8.0%	8.4%	8.6%	8.6%	8.4%
1985														-22.2%	-13.8%	-9.8%	-4.1%	-0.5%	0.6%	1.8%	2.9%	3.3%	4.2%	4.9%	5.3%	5.5%	5.9%	6.1%	6.1%	6.0%	6.1%	6.2%	6.3%	7.2%	7.5%	7.8%	8.1%	7.8%	7.8%	8.1%	8.4%	8.7%	8.7%	8.5%
1986															-4.6%	-2.9%	2.8%	5.7%	5.9%	6.5%	7.1%	7.0%	7.6%	8.1%	8.2%	8.2%	8.5%	8.4%	8.3%	8.1%	8.0%	8.0%	8.1%	8.9%	9.2%	9.4%	9.6%	9.3%	9.2%	9.5%	9.8%	10.0%	9.9%	9.7%
1987																-1.1%	6.7%	9.4%	8.7%	8.9%	9.2%	8.7%	9.2%	9.6%	9.6%	9.5%	9.6%	9.5%	9.3%	9.0%	8.9%	8.8%	8.8%	9.7%	9.9%	10.1%	10.3%	9.9%	9.9%	10.1%	10.4%	10.6%	10.5%	10.2%
1988																	15.0%	15.1%	12.2%	11.5%	11.3%	10.5%	10.8%	11.1%	10.8%	10.6%	10.7%	10.5%	10.1%	9.8%	9.6%	9.4%	9.4%	10.3%	10.5%	10.7%	10.9%	10.4%	10.4%	10.6%	10.9%	11.1%	11.0%	10.6%
1989																		15.2%	10.9%	10.4%	10.4%	9.6%	10.1%	10.5%	10.3%	10.1%	10.2%	10.0%	9.7%	9.4%	9.2%	9.1%	9.1%	10.0%	10.3%	10.5%	10.7%	10.2%	10.2%	10.4%	10.7%	10.9%	10.8%	10.5%
1990																			6.7%	8.0%	8.9%	8.2%	9.1%	9.8%	9.6%	9.5%	9.7%	9.5%	9.2%	8.9%	8.7%	8.7%	8.7%	9.7%	10.0%	10.2%	10.5%	10.0%	9.9%	10.2%	10.5%	10.7%	10.6%	10.3%
1991																				9.4%	10.0%	8.7%	9.7%	10.4%	10.1%	9.9%	10.1%	9.9%	9.5%	9.1%	8.9%	8.8%	8.8%	9.9%	10.2%	10.4%	10.7%	10.1%	10.1%	10.4%	10.7%	10.9%	10.8%	10.5%
1992																					0.7%	8.4%	9.9%	10.6%	10.3%	10.0%	10.2%	9.9%	9.5%	9.1%	8.9%	8.8%	8.8%	9.9%	10.2%	10.5%	10.8%	10.2%	10.1%	10.4%	10.7%	11.0%	10.9%	10.5%
1993																						6.2%	9.4%	10.6%	10.2%	9.8%	10.1%	9.8%	9.3%	8.9%	8.7%	8.6%	8.6%	9.9%	10.2%	10.5%	10.8%	10.2%	10.1%	10.4%	10.7%	11.0%	10.9%	10.5%
1994																							12.8%	12.9%	11.5%	10.8%	10.9%	10.4%	9.8%	9.3%	9.0%	8.8%	8.9%	10.2%	10.5%	10.8%	11.1%	10.4%	10.3%	10.6%	11.0%	11.2%	11.1%	10.7%
1995																								13.0%	10.9%	10.1%	10.4%	10.0%	9.3%	8.8%	8.5%	8.4%	8.5%	10.0%	10.3%	10.6%	10.9%	10.2%	10.2%	10.5%	10.9%	11.2%	11.0%	10.6%
1996																									8.8%	8.7%	9.6%	9.2%	8.6%	8.1%	7.9%	7.8%	8.0%	9.7%	10.1%	10.4%	10.8%	10.1%	10.0%	10.4%	10.8%	11.1%	10.9%	10.5%
1997																										8.5%	10.0%	9.4%	8.5%	7.9%	7.7%	7.7%	7.9%	9.8%	10.2%	10.6%	11.0%	10.2%	10.1%	10.5%	10.9%	11.2%	11.0%	10.6%
1998																											11.4%	9.8%	8.5%	7.8%	7.6%	7.6%	7.8%	9.9%	10.4%	10.8%	11.2%	10.3%	10.2%	10.6%	11.0%	11.4%	11.2%	10.7%
1999																												8.1%	7.1%	6.6%	6.6%	6.8%	7.2%	9.7%	10.3%	10.7%	11.2%	10.2%	10.1%	10.5%	11.0%	11.3%	11.2%	10.6%
2000																													6.0%	5.8%	6.1%	6.5%	7.0%	10.0%	10.6%	11.0%	11.5%	10.4%	10.3%	10.8%	11.2%	11.6%	11.4%	10.8%
2001																														5.6%	6.2%	6.6%	7.3%	10.8%	11.4%	11.8%	12.2%	10.9%	10.7%	11.2%	11.7%	12.0%	11.8%	11.1%
2002																															6.8%	7.1%	7.9%	12.1%	12.6%	12.8%	13.2%	11.6%	11.3%	11.8%	12.3%	12.6%	12.3%	11.5%
2003																																7.5%	8.4%	14.0%	14.0%	14.1%	14.3%	12.3%	11.9%	12.3%	12.8%	13.1%	12.7%	11.9%
2004																																	9.3%	17.4%	16.3%	15.8%	15.7%	13.1%	12.5%	13.0%	13.4%	13.7%	13.2%	12.3%
2005																																		26.0%	20.0%	18.0%	17.4%	13.9%	13.0%	13.5%	13.9%	14.2%	13.6%	12.5%
2006																																			14.3%	14.2%	14.6%	11.0%	10.6%	11.5%	12.3%	12.8%	12.3%	11.3%
2007																																				14.2%	14.8%	9.9%	9.7%	11.0%	12.0%	12.6%	12.1%	11.0%
2008																																					15.3%	7.9%	8.2%	10.2%	11.6%	12.3%	11.8%	10.6%
2009																																						0.9%	4.9%	8.5%	10.6%	11.7%	11.2%	9.9%
2010																																							9.0%	12.6%	14.1%	14.6%	13.3%	11.5%
2011																																								16.2%	16.7%	16.5%	14.5%	12.0%
2012																																									17.2%	16.7%	13.9%	10.9%
2013																																										16.2%	12.3%	8.9%
2014																																											8.4%	5.4%
2015																																												2.5%

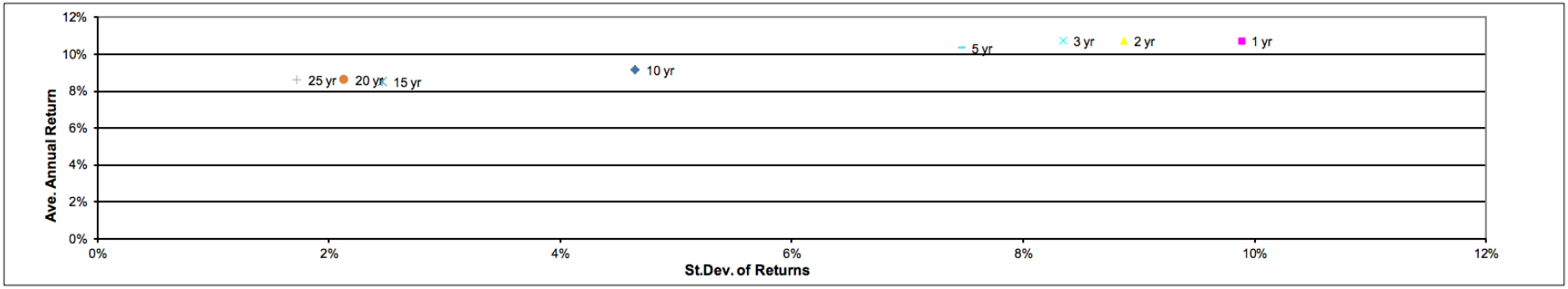


(Illinois 1970-2015)

ILLINOIS

Farmland risk stability measures





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ILLINOIS

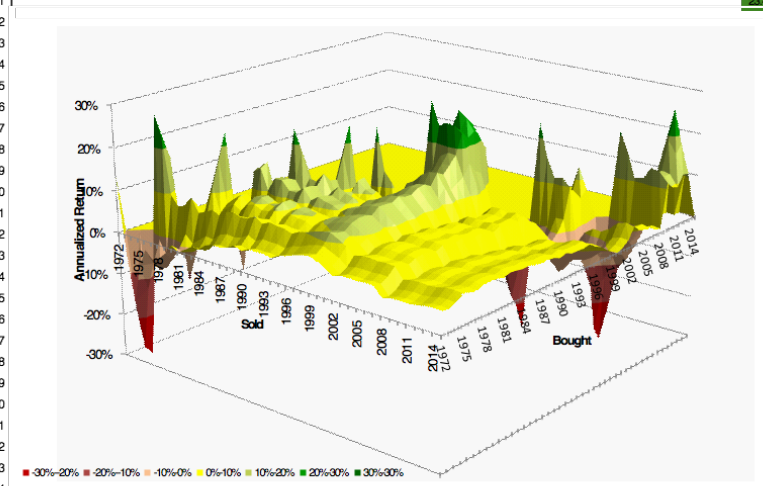
S&P 500: time and holding periods

S&P500

Sell (end of year)

Buy (beginning of year)

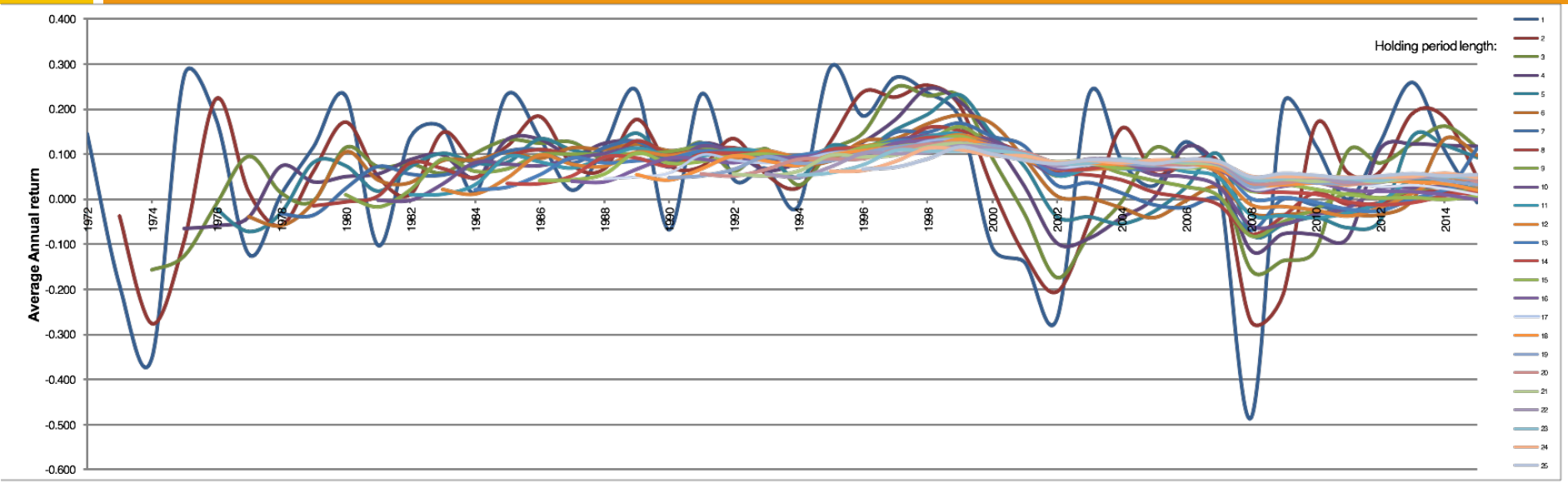
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1972	14.5%	-3.7%	-15.7%	-6.5%	-2.1%	-3.9%	-3.2%	-1.5%	1.0%	-0.2%	1.0%	2.2%	2.1%	3.5%	4.2%	4.0%	4.5%	5.5%	4.8%	5.6%	5.6%	5.6%	5.3%	6.2%	6.7%	7.4%	8.0%	8.3%	7.6%	6.8%	5.5%	6.0%	6.1%	6.0%	6.2%	6.1%	4.1%	4.5%	4.7%	4.5%	4.7%	5.2%	5.3%	5.2%
1973		-19.1%	-27.6%	-12.6%	-5.9%	-7.2%	-5.9%	-3.5%	-0.6%	-1.7%	-0.3%	1.1%	1.1%	2.7%	3.4%	3.3%	3.9%	4.9%	4.3%	5.2%	5.1%	5.2%	4.9%	5.9%	6.4%	7.1%	7.7%	8.1%	7.3%	6.5%	5.2%	5.7%	5.8%	5.7%	5.9%	5.9%	3.8%	4.2%	4.4%	4.3%	4.5%	5.0%	5.1%	5.0%
1974			-35.3%	-9.2%	-1.0%	-4.0%	-3.0%	-0.7%	2.4%	0.7%	2.1%	3.4%	3.2%	4.8%	5.4%	5.2%	5.6%	6.7%	5.8%	6.7%	6.6%	6.6%	6.2%	7.2%	7.6%	8.4%	9.0%	9.3%	8.5%	7.6%	6.2%	6.7%	6.8%	6.6%	6.8%	6.7%	4.5%	4.9%	5.1%	5.0%	5.2%	5.7%	5.8%	5.6%
1975				27.4%	22.4%	9.5%	7.4%	8.2%	10.5%	7.3%	8.1%	8.9%	8.1%	9.4%	9.8%	9.2%	9.3%	10.3%	9.1%	9.9%	9.6%	9.4%	8.9%	9.8%	10.1%	10.8%	11.3%	11.6%	10.6%	9.6%	8.1%	8.6%	8.6%	8.4%	8.5%	8.3%	6.0%	6.4%	6.6%	6.4%	6.5%	7.0%	7.1%	6.9%
1976					17.5%	1.6%	1.4%	3.9%	7.4%	4.3%	5.6%	6.8%	6.2%	7.8%	8.3%	7.8%	8.1%	9.1%	8.0%	8.9%	8.6%	8.5%	8.0%	9.0%	9.4%	10.1%	10.7%	11.0%	10.0%	9.0%	7.4%	7.9%	8.0%	7.8%	7.9%	7.8%	5.4%	5.8%	6.0%	5.8%	6.0%	6.5%	6.6%	6.4%
1977						-12.2%	-5.8%	-0.3%	5.0%	1.8%	3.7%	5.4%	4.9%	6.8%	7.4%	6.9%	7.3%	8.5%	7.4%	8.4%	8.1%	8.0%	7.5%	8.5%	9.0%	9.8%	10.4%	10.7%	9.7%	8.7%	7.0%	7.6%	7.6%	7.5%	7.6%	7.5%	5.0%	5.5%	5.7%	5.5%	5.7%	6.2%	6.3%	6.1%
1978							1.1%	6.2%	11.5%	5.6%	7.2%	8.6%	7.5%	9.4%	9.9%	9.1%	9.3%	10.5%	9.0%	10.0%	9.6%	9.4%	8.8%	9.8%	10.2%	11.0%	11.6%	11.9%	10.8%	9.6%	7.9%	8.4%	8.4%	8.2%	8.4%	8.2%	5.7%	6.1%	6.3%	6.1%	6.3%	6.8%	6.9%	6.7%
1979								11.6%	17.1%	7.2%	8.8%	10.2%	8.7%	10.7%	11.0%	10.0%	10.2%	11.4%	9.7%	10.7%	10.2%	10.0%	9.3%	10.3%	10.8%	11.6%	12.2%	12.4%	11.2%	10.0%	8.2%	8.7%	8.7%	8.5%	8.7%	8.5%	5.8%	6.3%	6.5%	6.3%	6.4%	6.9%	7.0%	6.8%
1980									22.9%	5.0%	7.9%	9.8%	8.1%	10.5%	10.9%	9.8%	10.0%	11.3%	9.5%	10.6%	10.1%	9.9%	9.1%	10.3%	10.7%	11.6%	12.2%	12.5%	11.2%	9.9%	8.0%	8.6%	8.6%	8.4%	8.6%	8.4%	5.6%	6.1%	6.3%	6.1%	6.3%	6.8%	6.9%	6.7%
1981										-10.2%	1.1%	5.8%	4.7%	8.2%	9.1%	8.0%	8.5%	10.1%	8.3%	9.6%	9.1%	9.0%	8.2%	9.5%	10.0%	10.9%	11.6%	11.9%	10.7%	9.4%	7.4%	8.0%	8.1%	7.9%	8.0%	7.9%	5.1%	5.6%	5.8%	5.6%	5.8%	6.4%	6.5%	6.3%
1982											13.8%	14.8%	10.2%	13.3%	13.4%	11.4%	11.5%	13.0%	10.6%	11.8%	11.1%	10.7%	9.7%	11.0%	11.5%	12.4%	13.1%	13.3%	11.9%	10.4%	8.3%	9.0%	8.9%	8.7%	8.8%	8.6%	5.7%	6.2%	6.4%	6.2%	6.4%	6.9%	7.0%	6.8%
1983												15.9%	8.4%	13.2%	13.3%	10.9%	11.1%	12.8%	10.2%	11.6%	10.8%	10.5%	9.4%	10.8%	11.4%	12.3%	13.0%	13.3%	11.8%	10.3%	8.0%	8.7%	8.7%	8.5%	8.6%	8.4%	5.4%	5.9%	6.1%	5.9%	6.1%	6.7%	6.8%	6.6%
1984													1.4%	11.8%	12.4%	9.7%	10.1%	12.3%	9.4%	11.0%	10.3%	9.9%	8.8%	10.4%	11.0%	12.1%	12.8%	13.1%	11.6%	10.0%	7.6%	8.4%	8.4%	8.1%	8.3%	8.1%	5.0%	5.5%	5.8%	5.6%	5.8%	6.4%	6.6%	6.3%
1985														23.4%	18.4%	12.7%	12.4%	14.7%	10.8%	12.5%	11.4%	10.9%	9.6%	11.3%	11.8%	12.9%	13.7%	14.0%	12.2%	10.5%	8.0%	8.8%	8.8%	8.5%	8.7%	8.4%	5.1%	5.7%	5.9%	5.7%	6.0%	6.6%	6.7%	6.5%
1986															13.6%	7.7%	9.0%	12.6%	8.4%	10.8%	9.8%	9.5%	8.2%	10.1%	10.9%	12.1%	13.0%	13.3%	11.5%	9.7%	7.2%	8.0%	8.0%	7.8%	8.0%	7.8%	4.4%	5.0%	5.3%	5.1%	5.4%	6.0%	6.2%	6.0%
1987																2.0%	6.7%	12.2%	7.1%	10.2%	9.2%	8.9%	7.5%	9.7%	10.6%	12.0%	12.9%	13.3%	11.4%	9.5%	6.8%	7.7%	7.7%	7.5%	7.7%	7.5%	4.0%	4.7%	5.0%	4.8%	5.1%	5.8%	5.9%	5.7%
1988																	11.7%	17.7%	8.9%	12.4%	10.7%	10.1%	8.3%	10.7%	11.6%	13.0%	14.0%	14.3%	12.1%	10.0%	7.1%	8.0%	8.1%	7.8%	8.0%	7.8%	4.1%	4.8%	5.1%	4.9%	5.2%	5.9%	6.1%	5.8%
1989																		24.1%	7.6%	12.6%	10.5%	9.7%	7.8%	10.6%	11.6%	13.2%	14.2%	14.5%	12.2%	9.9%	6.8%	7.8%	7.9%	7.6%	7.8%	7.6%	3.7%	4.5%	4.8%	4.6%	4.9%	5.7%	5.9%	5.6%
1990																			-6.8%	7.2%	6.3%	6.4%	4.8%	8.5%	9.9%	11.9%	13.1%	13.6%	11.1%	8.8%	5.5%	6.7%	6.9%	6.6%	7.0%	6.8%	2.7%	3.6%	4.0%	3.8%	4.2%	5.0%	5.2%	5.0%
1991																				23.4%	13.5%	11.2%	7.9%	11.9%	12.9%	14.8%	15.9%	16.1%	13.1%	10.3%	6.6%	7.8%	7.9%	7.6%	7.9%	7.6%	3.3%	4.2%	4.5%	4.3%	4.7%	5.5%	5.7%	5.5%
1992																					4.4%	5.6%	3.2%	9.2%	11.0%	13.5%	14.9%	15.2%	12.0%	9.1%	5.2%	6.6%	6.8%	6.5%	6.9%	6.7%	2.2%	3.2%	3.6%	3.4%	3.9%	4.8%	5.0%	4.8%
1993																						6.8%	2.5%	10.8%	12.7%	15.4%	16.7%	16.9%	13.0%	9.6%	5.3%	6.9%	7.0%	6.7%	7.1%	6.9%	2.1%	3.1%	3.6%	3.4%	3.8%	4.8%	5.1%	4.8%
1994																							-1.6%	12.8%	14.7%	17.6%	18.8%	18.7%	13.9%	10.0%	5.2%	6.9%	7.0%	6.7%	7.1%	6.9%	1.8%	2.9%	3.4%	3.2%	3.7%	4.7%	5.0%	4.7%
1995																								29.3%	23.8%	24.8%	24.5%	23.2%	16.7%	11.8%	6.0%	7.8%	7.9%	7.5%	7.9%	7.5%	2.0%	3.2%	3.7%	3.5%	4.0%	5.0%	5.3%	5.0%
1996																									18.5%	22.7%	23.0%	21.7%	14.4%	9.1%	3.1%	5.4%	5.8%	5.5%	6.1%	5.9%	0.2%	1.5%	2.2%	2.1%	2.7%	3.8%	4.2%	3.9%
1997																										27.0%	25.3%	22.8%	13.4%	7.3%	0.7%	3.7%	4.3%	4.1%	5.0%	4.8%	-1.2%	0.3%	1.1%	1.1%	1.7%	3.0%	3.4%	3.2%
1998																											23.6%	20.7%	9.2%	2.9%	-3.9%	0.2%	1.4%	1.6%	2.8%	2.8%	-3.4%	-1.6%	-0.6%	-0.6%	0.3%	1.7%	2.2%	2.0%
1999																												17.8%	2.6%	-3.3%	-9.7%	-3.9%	-1.9%	-1.2%	0.4%	0.8%	-5.8%	-3.6%	-2.4%	-2.2%	-1.2%	0.4%	1.0%	0.9%
2000																													-10.7%	-12.3%	-17.4%	-8.7%	-5.4%	-4.1%	-1.9%	-1.2%	-8.1%	-5.5%	-4.1%	-3.7%	-2.6%	-0.8%	0.0%	-0.1%
2001																														-14.0%	-20.5%	-8.0%	-4.1%	-2.7%	-0.3%	0.2%	-7.8%	-5.0%	-3.4%	-3.1%	-1.9%	0.0%	0.8%	0.7%
2002																															-26.6%	-4.8%	-0.5%	0.3%	2.7%	2.8%	-6.9%	-3.8%	-2.1%	-1.9%	-0.7%	1.3%	2.0%	1.8%
2003																																23.4%	15.8%	11.3%	11.7%	10.0%	-3.1%	0.0%	1.5%	1.3%	2.4%	4.3%	4.8%	4.4%
2004																																	8.6%	5.7%	8.0%	6.9%	-7.7%	-3.4%	-1.3%	-1.2%	0.3%	2.6%	3.3%	3.0%
2005																																		3.0%	7.8%	6.3%	-11.4%	-5.6%	-2.9%	-2.5%	-0.7%	1.9%	2.8%	2.5%
2006																																			12.8%	8.0%	-15.7%	-7.7%	-4.0%	-3.4%	-1.2%	1.8%	2.8%	2.4%
2007																																				3.5%	-27.1%	-13.6%	-7.8%	-6.3%	-3.4%	0.3%	1.6%	1.3%
2008																																					-48.6%	-21.1%	-11.3%	-8.6%	-4.7%	-0.2%	1.3%	1.1%
2009																																						21.1%	16.5%	10.7%	11.2%	14.0%	13.4%	11.3%
2010																																							12.0%	5.8%	8.0%	12.3%	12.0%	9.7%
2011																																								0.0%	6.1%	12.3%	11.9%	9.3%
2012																																									12.6%	19.1%	16.2%	11.7%
2013																																										25.9%	18.1%	11.5%
2014																																											10.8%	4.9%
2015																																												-0.7%



TIAA-CREF | Center for Farmland Research

ILLINOIS

S&P 500 risk stability measures



TIAA-CREF | Center for Farmland Research

ILLINOIS

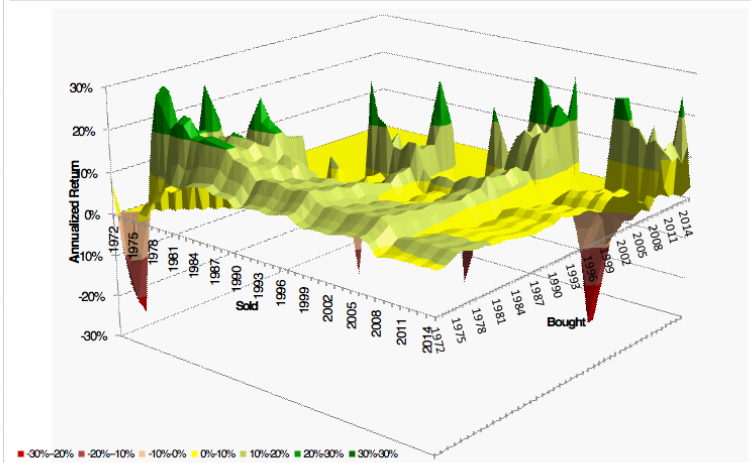
REITS: time and holding period

Choose asset

Equity REITS

Sell (end of year)

Bought (year of purchase)	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1972	7.7%	-5.4%	-12.1%	-5.4%	2.1%	4.9%	5.6%	8.5%	9.9%	9.5%	10.3%	11.6%	12.2%	12.5%	12.9%	11.8%	11.8%	11.6%	9.9%	10.9%	11.0%	11.3%	10.9%	11.1%	11.8%	12.0%	10.7%	10.1%	10.5%	10.6%	10.4%	11.0%	11.4%	11.5%	11.9%	11.0%	8.8%	9.2%	9.6%	9.5%	9.7%	9.5%	9.9%	9.7%
1973		-16.9%	-20.6%	-9.4%	0.8%	4.4%	5.3%	8.6%	10.2%	9.7%	10.6%	12.0%	12.6%	12.9%	13.3%	12.0%	12.1%	11.9%	10.0%	11.0%	11.2%	11.5%	11.1%	11.2%	12.0%	12.2%	10.8%	10.2%	10.6%	10.7%	10.5%	11.1%	11.6%	11.6%	12.1%	11.1%	8.8%	9.2%	9.6%	9.6%	9.8%	9.6%	9.9%	9.8%
1974			-24.1%	-5.5%	7.5%	10.5%	10.4%	13.5%	14.7%	13.5%	14.2%	15.4%	15.7%	15.9%	16.0%	14.4%	14.3%	14.0%	11.9%	12.8%	12.9%	13.1%	12.6%	12.7%	13.4%	13.6%	12.1%	11.4%	11.8%	11.8%	11.6%	12.2%	12.6%	12.6%	13.1%	12.1%	9.7%	10.1%	10.4%	10.4%	10.6%	10.4%	10.7%	10.5%
1975				17.6%	27.8%	25.3%	21.2%	23.0%	22.8%	20.2%	20.2%	20.9%	20.7%	20.4%	20.1%	18.1%	17.7%	17.1%	14.6%	15.5%	15.4%	15.5%	14.9%	14.8%	15.5%	15.6%	13.9%	13.1%	13.5%	13.5%	13.1%	13.7%	14.1%	14.0%	14.5%	13.4%	10.9%	11.2%	11.6%	11.5%	11.7%	11.4%	11.7%	11.5%
1976					38.9%	29.2%	22.4%	24.4%	23.9%	20.7%	20.5%	21.3%	21.0%	20.7%	20.4%	18.2%	17.7%	17.0%	14.4%	15.4%	15.3%	15.4%	14.7%	14.7%	15.4%	15.5%	13.7%	12.9%	13.3%	13.3%	12.9%	13.6%	14.0%	13.9%	14.4%	13.3%	10.7%	11.1%	11.4%	11.3%	11.5%	11.3%	11.6%	11.4%
1977						20.2%	14.9%	19.9%	20.4%	17.3%	17.7%	19.0%	19.0%	18.8%	18.7%	16.4%	16.1%	15.5%	12.8%	13.9%	13.9%	14.2%	13.5%	13.5%	14.3%	14.5%	12.7%	11.9%	12.4%	12.4%	12.0%	12.7%	13.2%	13.1%	13.7%	12.5%	9.9%	10.3%	10.7%	10.6%	10.8%	10.6%	10.9%	10.7%
1978							9.8%	19.8%	20.5%	16.6%	17.2%	18.7%	18.8%	18.6%	18.5%	16.1%	15.7%	15.1%	12.3%	13.5%	13.5%	13.8%	13.1%	13.2%	14.0%	14.2%	12.4%	11.5%	12.0%	12.1%	11.7%	12.4%	12.9%	12.9%	13.4%	12.3%	9.6%	10.0%	10.4%	10.3%	10.6%	10.3%	10.7%	10.5%
1979								30.6%	26.1%	19.0%	19.1%	20.6%	20.3%	19.9%	19.6%	16.8%	16.4%	15.6%	12.5%	13.8%	13.8%	14.1%	13.3%	13.4%	14.3%	14.5%	12.5%	11.6%	12.1%	12.2%	11.8%	12.5%	13.1%	13.0%	13.6%	12.4%	9.6%	10.0%	10.4%	10.4%	10.6%	10.4%	10.7%	10.5%
1980									21.8%	13.5%	15.5%	18.2%	18.4%	18.2%	18.1%	15.1%	14.9%	14.2%	11.0%	12.5%	12.6%	13.0%	12.3%	12.4%	13.4%	13.6%	11.6%	10.7%	11.3%	11.4%	11.0%	11.8%	12.4%	12.4%	13.0%	11.8%	8.9%	9.4%	9.8%	9.8%	10.0%	9.8%	10.2%	10.0%
1981										5.8%	12.5%	17.0%	17.5%	17.5%	17.5%	14.2%	14.0%	13.4%	10.0%	11.7%	11.8%	12.3%	11.6%	11.8%	12.9%	13.2%	11.1%	10.2%	10.8%	10.9%	10.6%	11.4%	12.0%	12.0%	12.7%	11.4%	8.5%	9.0%	9.5%	9.4%	9.7%	9.5%	9.9%	9.7%
1982											19.6%	23.1%	21.7%	20.6%	20.0%	15.7%	15.2%	14.4%	10.4%	12.3%	12.4%	12.9%	12.1%	12.2%	13.3%	13.7%	11.4%	10.4%	11.1%	11.2%	10.8%	11.7%	12.3%	12.3%	12.9%	11.6%	8.6%	9.1%	9.6%	9.5%	9.8%	9.6%	10.0%	9.8%
1983												26.7%	22.8%	21.0%	20.1%	14.9%	14.5%	13.7%	9.3%	11.5%	11.7%	12.3%	11.5%	11.7%	12.9%	13.3%	10.9%	9.9%	10.6%	10.8%	10.4%	11.3%	12.0%	12.0%	12.7%	11.3%	8.1%	8.7%	9.3%	9.2%	9.5%	9.3%	9.7%	9.5%
1984													19.0%	18.2%	18.0%	12.2%	12.3%	11.6%	7.1%	9.7%	10.2%	10.9%	10.2%	10.5%	11.9%	12.4%	9.9%	8.9%	9.7%	9.9%	9.6%	10.6%	11.3%	11.4%	12.1%	10.7%	7.5%	8.1%	8.7%	8.6%	8.9%	8.7%	9.2%	9.0%
1985														17.5%	17.5%	10.0%	10.6%	10.2%	5.2%	8.5%	9.1%	10.1%	9.3%	9.8%	11.3%	11.9%	9.3%	8.3%	9.2%	9.4%	9.1%	10.2%	11.0%	11.0%	11.8%	10.4%	7.0%	7.7%	8.3%	8.3%	8.6%	8.4%	8.9%	8.7%
1986															17.5%	6.4%	8.4%	8.4%	2.9%	7.0%	8.0%	9.2%	8.5%	9.0%	10.8%	11.4%	8.7%	7.7%	8.7%	8.9%	8.6%	9.8%	10.6%	10.7%	11.5%	10.0%	6.6%	7.3%	7.9%	7.9%	8.3%	8.1%	8.6%	8.4%
1987																-3.7%	4.2%	5.6%	-0.5%	5.1%	6.4%	8.0%	7.4%	8.1%	10.2%	10.9%	8.0%	7.0%	8.1%	8.4%	8.1%	9.3%	10.3%	10.3%	11.3%	9.7%	6.1%	6.8%	7.5%	7.6%	7.9%	7.7%	8.3%	8.1%
1988																	12.7%	10.5%	0.6%	7.4%	8.6%	10.1%	9.1%	9.7%	11.8%	12.5%	9.1%	7.9%	9.0%	9.3%	8.9%	10.2%	11.2%	11.2%	12.1%	10.4%	6.6%	7.4%	8.1%	8.1%	8.4%	8.2%	8.8%	8.6%
1989																		8.5%	-4.9%	5.7%	7.6%	9.6%	8.5%	9.3%	11.7%	12.4%	8.8%	7.5%	8.7%	9.0%	8.7%	10.1%	11.1%	11.1%	12.1%	10.3%	6.3%	7.1%	7.9%	7.9%	8.3%	8.0%	8.6%	8.4%
1990																			-16.7%	4.3%	7.3%	9.9%	8.5%	9.4%	12.2%	12.9%	8.8%	7.4%	8.7%	9.1%	8.7%	10.2%	11.2%	11.3%	12.3%	10.4%	6.2%	7.0%	7.8%	7.8%	8.3%	8.0%	8.6%	8.4%
1991																				30.5%	21.8%	20.5%	15.9%	15.6%	17.9%	18.0%	12.5%	10.4%	11.7%	11.8%	11.1%	12.6%	13.6%	13.4%	14.4%	12.3%	7.6%	8.5%	9.2%	9.2%	9.5%	9.2%	9.8%	9.6%
1992																					3.6%	15.8%	11.4%	12.1%	15.5%	16.0%	10.1%	8.2%	9.8%	10.1%	9.5%	11.2%	12.4%	12.3%	13.4%	11.2%	6.4%	7.4%	8.2%	8.2%	8.6%	8.4%	9.0%	8.8%
1993																						17.9%	10.3%	11.6%	16.0%	16.5%	9.6%	7.4%	9.3%	9.7%	9.1%	11.0%	12.2%	12.2%	13.4%	11.0%	6.0%	7.0%	7.9%	7.9%	8.4%	8.1%	8.8%	8.6%
1994																							3.1%	8.5%	15.3%	16.1%	8.0%	5.7%	8.1%	8.7%	8.1%	10.3%	11.7%	11.7%	13.0%	10.6%	5.2%	6.3%	7.3%	7.4%	7.9%	7.7%	8.4%	8.1%
1995																								14.2%	21.9%	20.8%	9.2%	6.3%	8.9%	9.5%	8.8%	11.1%	12.6%	12.5%	13.9%	11.2%	5.4%	6.6%	7.6%	7.6%	8.2%	7.9%	8.7%	8.4%
1996																									30.2%	24.2%	7.6%	4.4%	7.9%	8.8%	8.0%	10.7%	12.5%	12.4%	13.9%	10.9%	4.7%	6.0%	7.2%	7.2%	7.8%	7.6%	8.4%	8.1%
1997																										18.4%	-2.2%	-3.0%	3.0%	4.9%	4.7%	8.2%	10.4%	10.5%	12.4%	9.3%	2.8%	4.4%	5.7%	5.9%	6.6%	6.4%	7.3%	7.1%
1998																											-19.2%	-12.3%	-1.7%	1.8%	2.2%	6.6%	9.3%	9.6%	11.7%	8.4%	1.5%	3.3%	4.8%	5.0%	5.8%	5.6%	6.7%	6.5%
1999																												-4.7%	8.4%	9.9%	8.4%	12.7%	15.0%	14.5%	16.3%	12.0%	3.9%	5.6%	7.1%	7.2%	7.9%	7.5%	8.5%	8.2%
2000																													23.4%	18.1%	13.1%	17.5%	19.4%	18.0%	19.7%	14.3%	4.9%	6.7%	8.2%	8.2%	8.9%	8.5%	9.5%	9.1%
2001																														13.0%	8.3%	15.6%	18.4%	17.0%	19.1%	13.1%	2.8%	5.0%	6.8%	6.9%	7.8%	7.4%	8.6%	8.2%
2002																															3.7%	16.8%	20.3%	18.0%	20.3%	13.1%	1.4%	4.0%	6.1%	6.3%	7.3%	7.0%	8.2%	7.8%
2003																																31.6%	29.5%	23.2%	24.9%	15.1%	1.0%	4.1%	6.5%	6.6%	7.7%	7.3%	8.6%	8.1%
2004																																	27.4%	19.2%	22.7%	11.3%	-4.2%	0.1%	3.3%	3.9%	5.3%	5.1%	6.7%	6.4%
2005																																		11.5%	20.4%	6.3%	-10.8%	-4.6%	-0.3%	0.9%	2.9%	2.9%	4.9%	4.7%
2006																																			30.1%	3.9%	-17.2%	-8.3%	-2.5%	-0.8%	1.7%	1.8%	4.1%	4.0%
2007																																				-17.1%	-33.9%	-18.4%	-9.2%	-6.0%	-2.4%	-1.7%	1.3%	1.5%
2008																																					-47.4%	-19.0%	-6.5%	-3.1%	0.8%	1.2%	4.2%	4.0%
2009																																						24.7%	24.7%	18.8%	18.6%	15.3%	16.8%	14.7%
2010																																							24.6%	16.0%	16.7%	13.0%	15.3%	13.1%
2011																																								8.0%	12.9%	9.4%	13.0%	10.9%
2012																																									18.0%	10.1%	14.8%	11.7%
2013																																										2.8%	13.2%	9.6%
2014																																											24.7%	13.2%
2015																																												2.8%



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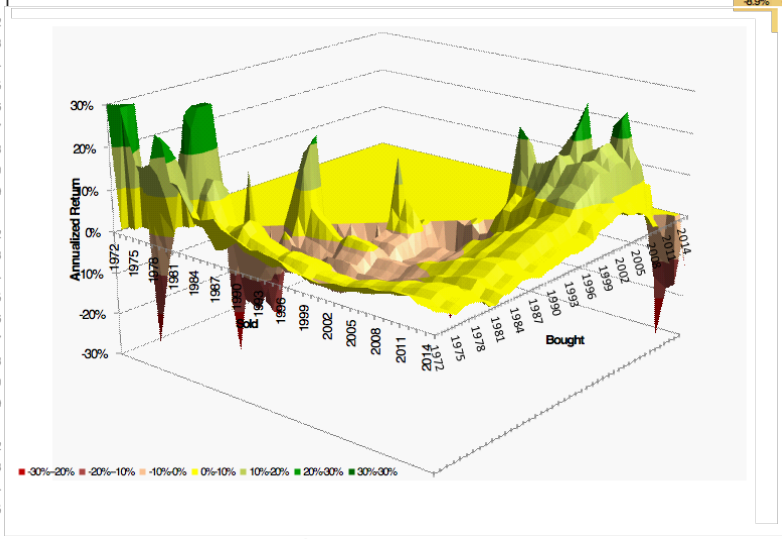
Gold: time and holding periods

Sell (end of year)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1972	38.5%	44.8%	47.9%	23.7%	17.6%	17.6%	18.8%	26.0%	24.6%	15.9%	15.8%	12.5%	9.4%	9.2%	9.7%	10.4%	8.6%	7.9%	7.3%	6.4%	5.8%	6.3%	5.9%	5.7%	5.2%	3.9%	3.8%	3.6%	3.3%	3.2%	3.8%	4.2%	4.2%	4.6%	5.0%	5.6%	5.5%	6.0%	6.4%	6.5%	6.5%	5.4%	5.3%	4.8%
1973		51.3%	52.8%	19.1%	12.9%	13.9%	15.8%	24.3%	23.0%	13.7%	13.7%	10.4%	7.3%	7.2%	7.9%	8.8%	7.0%	6.4%	5.8%	5.0%	4.4%	4.9%	4.6%	4.4%	4.1%	2.7%	2.6%	2.5%	2.2%	2.2%	2.8%	3.3%	3.3%	3.7%	4.2%	4.8%	4.7%	5.2%	5.7%	5.8%	5.8%	4.7%	4.6%	4.1%
1974			54.3%	5.6%	2.4%	6.1%	9.8%	20.3%	19.4%	9.7%	10.1%	7.0%	4.0%	4.1%	5.1%	6.2%	4.5%	4.1%	3.6%	2.9%	2.4%	3.0%	2.8%	2.7%	2.4%	1.1%	1.0%	1.0%	0.8%	0.8%	1.5%	2.0%	2.1%	2.5%	3.0%	3.6%	3.7%	4.1%	4.7%	4.8%	4.8%	3.7%	3.6%	3.2%
1975				-27.7%	-16.6%	-6.4%	0.8%	14.4%	14.4%	4.5%	5.6%	2.7%	0.0%	0.5%	1.8%	3.2%	1.7%	1.4%	1.1%	0.4%	0.1%	0.9%	0.7%	0.7%	0.5%	-0.7%	-0.7%	-0.7%	-0.9%	-0.8%	-0.1%	0.5%	0.7%	1.1%	1.7%	2.4%	2.4%	3.0%	3.5%	3.7%	3.8%	2.7%	2.6%	2.2%
1976					-3.9%	6.5%	12.6%	28.4%	25.4%	11.1%	11.5%	7.3%	3.6%	3.8%	5.0%	6.3%	4.4%	3.8%	3.3%	2.5%	2.0%	2.8%	2.5%	2.4%	2.1%	0.7%	0.6%	0.6%	0.4%	0.4%	1.1%	1.7%	1.8%	2.3%	2.8%	3.5%	3.5%	4.0%	4.6%	4.7%	4.8%	3.6%	3.5%	3.1%
1977						18.0%	21.9%	41.4%	34.0%	14.3%	14.3%	9.0%	4.6%	4.7%	5.9%	7.3%	5.1%	4.4%	3.9%	3.0%	2.4%	3.2%	2.9%	2.8%	2.4%	0.9%	0.8%	0.8%	0.6%	0.6%	1.4%	1.9%	2.0%	2.5%	3.0%	3.8%	3.8%	4.3%	4.9%	5.0%	5.1%	3.8%	3.7%	3.3%
1978							25.9%	54.7%	39.8%	13.4%	13.5%	7.6%	2.8%	3.2%	4.7%	6.3%	4.0%	3.4%	2.9%	2.0%	1.4%	2.3%	2.0%	2.0%	1.6%	0.1%	0.1%	0.1%	-0.1%	-0.1%	0.7%	1.4%	1.5%	2.0%	2.6%	3.3%	3.3%	3.9%	4.5%	4.6%	4.7%	3.5%	3.4%	2.9%
1979								90.2%	47.3%	9.5%	10.6%	4.2%	-0.6%	0.3%	2.3%	4.3%	2.0%	1.6%	1.2%	0.3%	-0.1%	0.9%	0.7%	0.7%	0.4%	-1.1%	-1.0%	-1.0%	-1.2%	-1.1%	-0.2%	0.5%	0.6%	1.2%	1.8%	2.6%	2.7%	3.3%	3.9%	4.0%	4.1%	2.9%	2.8%	2.3%
1980									14.1%	-16.9%	-7.7%	-10.3%	-12.7%	-9.8%	-6.4%	-3.2%	-4.8%	-4.6%	-4.5%	-4.9%	-4.9%	-3.6%	-3.5%	-3.2%	-3.3%	-4.6%	-4.4%	-4.1%	-4.2%	-4.0%	-3.0%	-2.2%	-1.9%	-1.3%	-0.5%	0.4%	0.5%	1.2%	1.9%	2.1%	2.3%	1.0%	1.0%	0.6%
1981										-39.5%	-16.9%	-17.2%	-18.3%	-14.0%	-9.4%	-5.5%	-6.9%	-6.5%	-6.2%	-6.4%	-6.4%	-4.8%	-4.6%	-4.3%	-4.3%	-5.6%	-5.3%	-5.0%	-5.0%	-4.8%	-3.7%	-2.8%	-2.5%	-1.8%	-1.0%	-0.1%	0.1%	0.8%	1.5%	1.7%	1.9%	0.7%	0.7%	0.2%
1982											13.9%	-3.2%	-9.8%	-6.1%	-1.8%	1.8%	-1.1%	-1.3%	-1.5%	-2.3%	-2.6%	-1.2%	-1.2%	-1.1%	-1.3%	-2.9%	-2.8%	-2.6%	-2.8%	-2.6%	-1.5%	-0.7%	-0.5%	0.2%	0.9%	1.8%	1.9%	2.6%	3.3%	3.5%	3.6%	2.3%	2.2%	1.7%
1983												-17.8%	-19.7%	-12.0%	-5.4%	-0.5%	-3.4%	-3.3%	-3.3%	-3.9%	-4.1%	-2.4%	-2.4%	-2.1%	-2.3%	-4.0%	-3.8%	-3.5%	-3.6%	-3.4%	-2.2%	-1.3%	-1.1%	-0.4%	0.4%	1.4%	1.5%	2.2%	3.0%	3.1%	3.3%	1.9%	1.9%	1.4%
1984													-21.5%	-8.9%	-0.9%	4.4%	-0.2%	-0.6%	-1.0%	-2.0%	-2.5%	-0.7%	-0.9%	-0.7%	-1.0%	-2.9%	-2.7%	-2.5%	-2.7%	-2.5%	-1.3%	-0.4%	-0.2%	0.5%	1.3%	2.3%	2.4%	3.1%	3.8%	4.0%	4.1%	2.7%	2.6%	2.1%
1985														5.8%	11.4%	14.8%	6.0%	4.2%	2.9%	1.1%	0.2%	1.9%	1.5%	1.4%	0.9%	-1.3%	-1.2%	-1.1%	-1.4%	-1.3%	-0.1%	0.8%	1.0%	1.7%	2.5%	3.5%	3.5%	4.2%	4.9%	5.1%	5.2%	3.6%	3.5%	2.9%
1986															17.4%	19.6%	6.1%	3.8%	2.3%	0.4%	-0.5%	1.4%	1.0%	1.0%	0.5%	-1.8%	-1.8%	-1.6%	-1.9%	-1.7%	-0.4%	0.5%	0.8%	1.5%	2.3%	3.4%	3.4%	4.1%	4.9%	5.1%	5.2%	3.5%	3.4%	2.8%
1987																21.9%	0.9%	-0.4%	-1.1%	-2.7%	-3.3%	-0.7%	-0.9%	-0.7%	-1.1%	-3.4%	-3.2%	-2.9%	-3.1%	-2.9%	-1.4%	-0.4%	-0.1%	0.7%	1.6%	2.7%	2.8%	3.6%	4.4%	4.6%	4.7%	3.1%	3.0%	2.4%
1988																	-16.6%	-10.0%	-7.8%	-8.1%	-7.6%	-4.0%	-3.8%	-3.2%	-3.3%	-5.7%	-5.2%	-4.7%	-4.8%	-4.4%	-2.8%	-1.6%	-1.3%	-0.4%	0.7%	1.9%	2.0%	2.8%	3.7%	3.9%	4.1%	2.4%	2.3%	1.7%
1989																		-2.9%	-3.0%	-5.0%	-5.3%	-1.3%	-1.4%	-1.1%	-1.6%	-4.4%	-4.0%	-3.6%	-3.8%	-3.4%	-1.7%	-0.5%	-0.2%	0.7%	1.7%	2.9%	3.0%	3.9%	4.8%	4.9%	5.0%	3.2%	3.1%	2.5%
1990																			-3.2%	-6.1%	-6.0%	-0.9%	-1.2%	-0.8%	-1.4%	-4.5%	-4.1%	-3.7%	-3.8%	-3.5%	-1.7%	-0.4%	0.0%	0.9%	2.0%	3.3%	3.3%	4.2%	5.1%	5.3%	5.4%	3.5%	3.4%	2.7%
1991																				-8.9%	-7.4%	-0.1%	-0.6%	-0.3%	-1.1%	-4.7%	-4.3%	-3.7%	-3.9%	-3.5%	-1.5%	-0.1%	0.2%	1.2%	2.3%	3.7%	3.7%	4.6%	5.6%	5.7%	5.8%	3.8%	3.6%	2.9%
1992																					5.9%	4.6%	2.3%	2.0%	0.6%	-4.0%	-3.6%	-3.0%	-3.3%	-2.9%	-0.8%	0.6%	0.9%	2.0%	3.1%	4.5%	4.5%	5.4%	6.4%	6.5%	6.6%	4.4%	4.2%	3.4%
1993																						16.3%	6.6%	4.7%	2.3%	-3.6%	-3.2%	-2.6%	-3.0%	-2.6%	-0.3%	1.2%	1.5%	2.6%	3.8%	5.2%	5.2%	6.1%	7.1%	7.2%	7.2%	4.9%	4.7%	3.9%
1994																							-2.2%	-0.6%	-2.0%	-8.1%	-6.7%	-5.4%	-5.5%	-4.7%	-2.0%	-0.1%	0.3%	1.5%	2.9%	4.5%	4.5%	5.5%	6.6%	6.7%	6.8%	4.4%	4.2%	3.3%
1995																								1.0%	-1.9%	-9.9%	-7.7%	-6.1%	-6.0%	-5.1%	-2.0%	0.1%	0.5%	1.9%	3.3%	5.0%	5.0%	6.0%	7.2%	7.3%	7.3%	4.8%	4.5%	3.6%
1996																									-4.7%	-14.9%	-10.5%	-7.8%	-7.3%	-6.0%	-2.4%	0.0%	0.5%	2.0%	3.5%	5.4%	5.3%	6.4%	7.6%	7.7%	7.7%	5.0%	4.7%	3.8%
1997																										-24.1%	-13.2%	-8.8%	-8.0%	-6.3%	-2.0%	0.7%	1.1%	2.7%	4.4%	6.3%	6.2%	7.3%	8.5%	8.5%	8.5%	5.6%	5.3%	4.2%
1998																											-0.8%	0.0%	-1.9%	-1.2%	3.1%	5.5%	5.4%	6.7%	8.2%	10.0%	9.4%	10.5%	11.6%	11.4%	11.1%	7.8%	7.3%	6.1%
1999																												0.8%	-2.4%	-1.4%	4.2%	6.8%	6.4%	7.8%	9.4%	11.3%	10.5%	11.6%	12.7%	12.3%	12.0%	8.4%	7.8%	6.5%
2000																													-5.6%	-2.5%	5.3%	8.4%	7.6%	9.0%	10.6%	12.6%	11.7%	12.7%	13.8%	13.4%	12.9%	8.9%	8.3%	6.8%
2001																														0.7%	11.2%	13.5%	11.2%	12.2%	13.6%	15.5%	14.0%	14.9%	16.0%	15.3%	14.6%	10.1%	9.4%	7.7%
2002																															22.8%	20.4%	14.9%	15.3%	16.4%	18.2%	16.1%	16.8%	17.8%	16.8%	16.0%	11.0%	10.1%	8.3%
2003																																18.1%	11.1%	12.8%	14.8%	17.3%	15.0%	16.0%	17.2%	16.2%	15.3%	9.9%	9.1%	7.2%
2004																																	4.5%	10.3%	13.7%	17.1%	14.4%	15.7%	17.0%	15.9%	15.0%	9.1%	8.3%	6.3%
2005																																		16.4%	18.6%	21.6%	17.0%	18.0%	19.3%	17.7%	16.4%	9.7%	8.7%	6.5%
2006																																			20.9%	24.2%	17.2%	18.4%	19.9%	17.9%	16.4%	8.9%	7.9%	5.6%
2007																																				27.7%	15.4%	17.6%	19.6%	17.3%	15.7%	7.2%	6.3%	4.0%
2008																																					4.2%	12.9%	17.0%	14.8%	13.4%	4.2%	3.6%	1.4%
2009																																						22.3%	24.0%	18.6%	15.8%	4.2%	3.5%	1.0%
2010																																							25.7%	16.8%	13.8%	0.1%	0.1%	-2.2%
2011																																								8.6%	8.2%	-7.3%	-5.5%	-7.0%
2012																																									7.9%	-14.3%	-9.7%	-10.5%
2013																																										-31.9%	-17.4%	-16.0%
2014																																											0.1%	-6.6%
2015																																												-12.9%



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Farmland Market Events/Drivers

Co
nte
xt

- Recent large crops and lower Corn and Soy prices
  - Impact income expectations
  - Rental market pressures
  - Stocks accumulation
- World Demand indicators (FAO and USDA)
- Caloric Consumption patterns under increased standard of living, and world RFS analogs
- Factor Productivity and changing technology alters intensification vs. extensification impacts
- Government program evolution