

Land Values – Past, Present, and Future

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Land is Unique

- Most fixed of farming assets
 - Residual claimant
 - Capitalizes government subsidies
- Often is taxed
 - Favorably or unfavorably
- Has non-ag benefits that may be pecuniary
- Has non-pecuniary benefits
- A long term investment involving long term expectations – history is a guide

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Factors/issues impacting land values

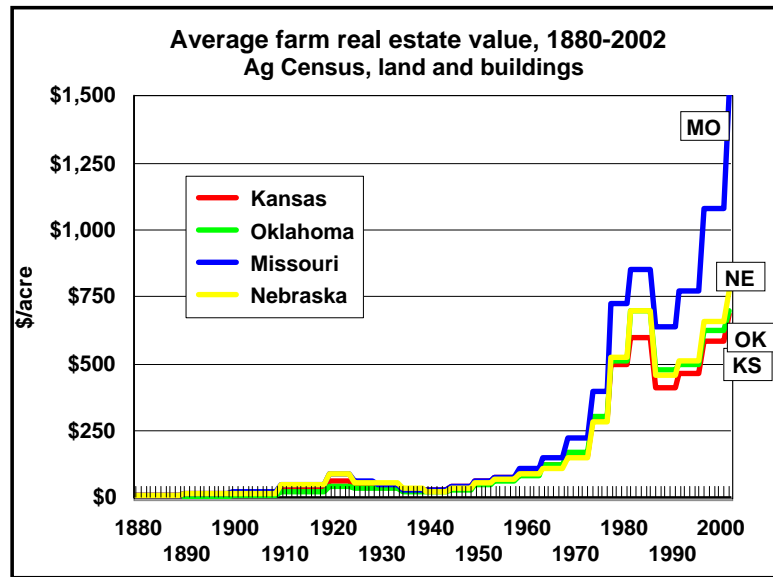
(alphabetical order)

- Farm profitability
- Farm size
- Government programs
- Input costs (e.g., fuel and fertilizer)
- Interest rates
- Outside investors (i.e., stock market money)
- Recreation uses (e.g., hunting)
- Renewable fuels (ethanol and bio-diesel)
- Section 1031 tax exchanges
- Technology (e.g., no-till, precision ag, bio-tech, DNA)
- Urban sprawl
- Weather (i.e., drought, flood)

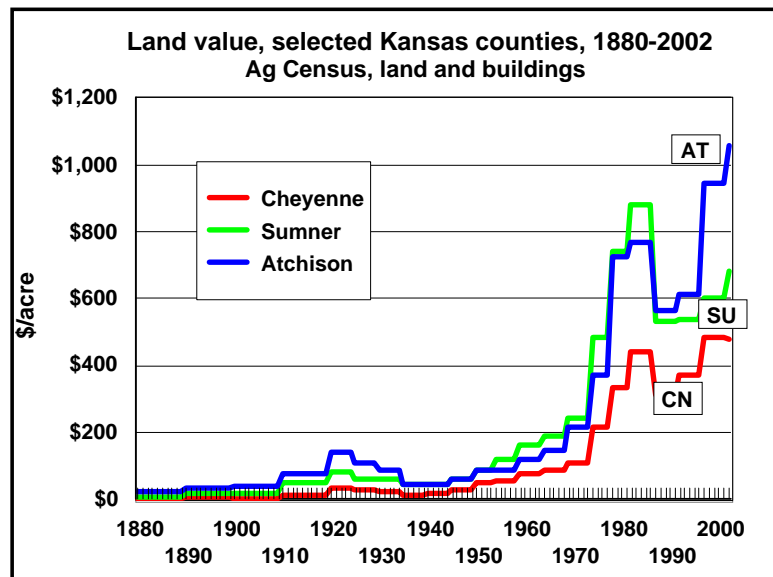
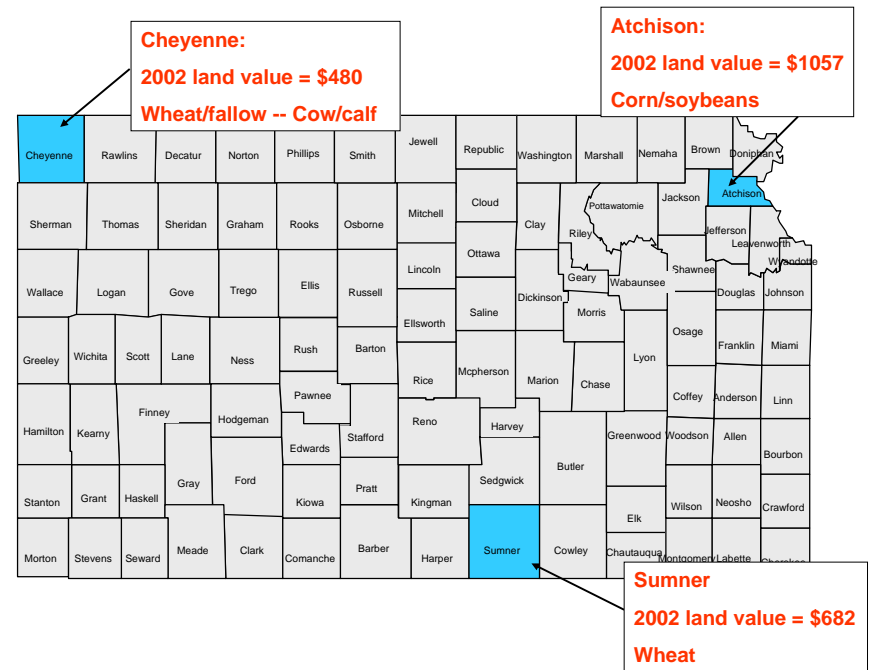
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Historical land values and growth

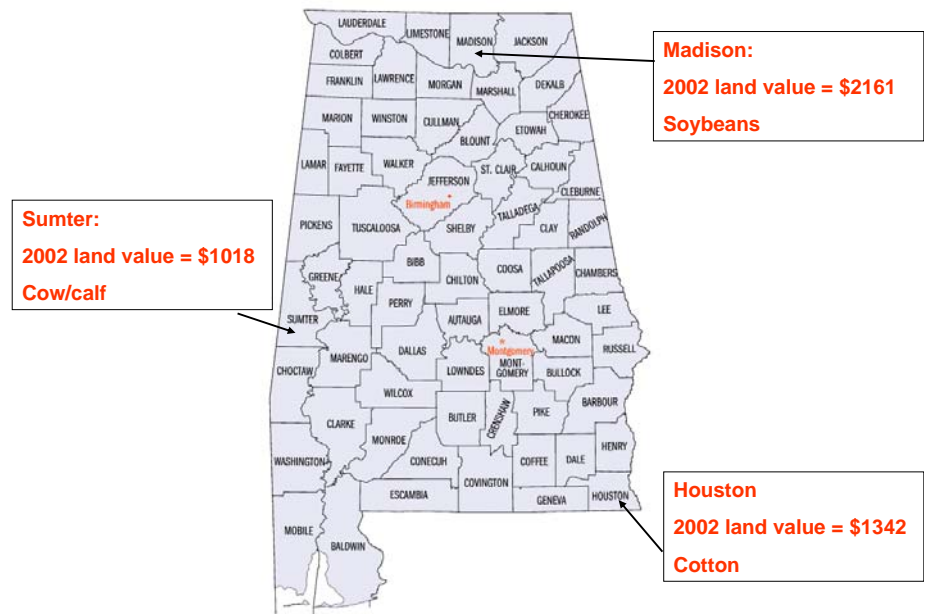
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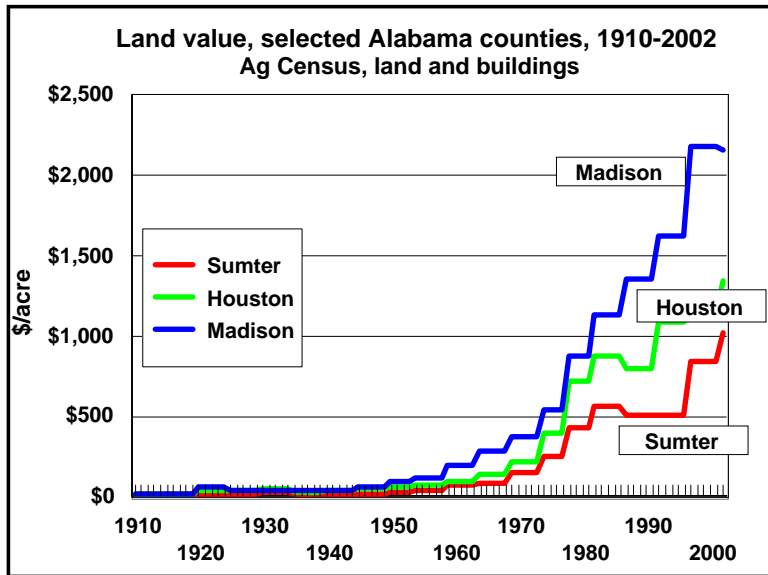
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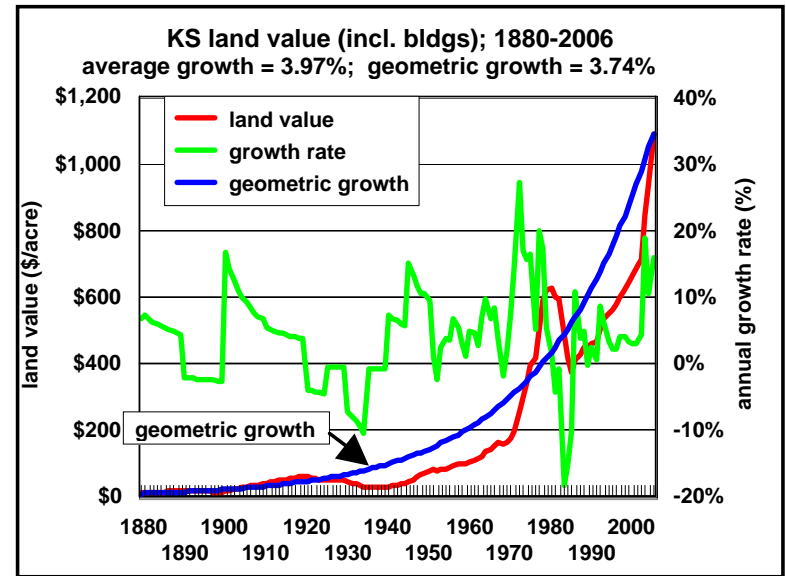
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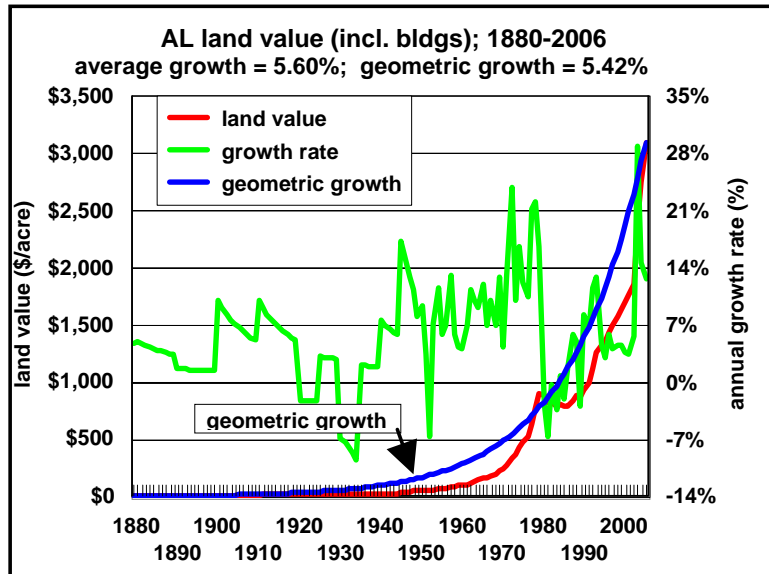
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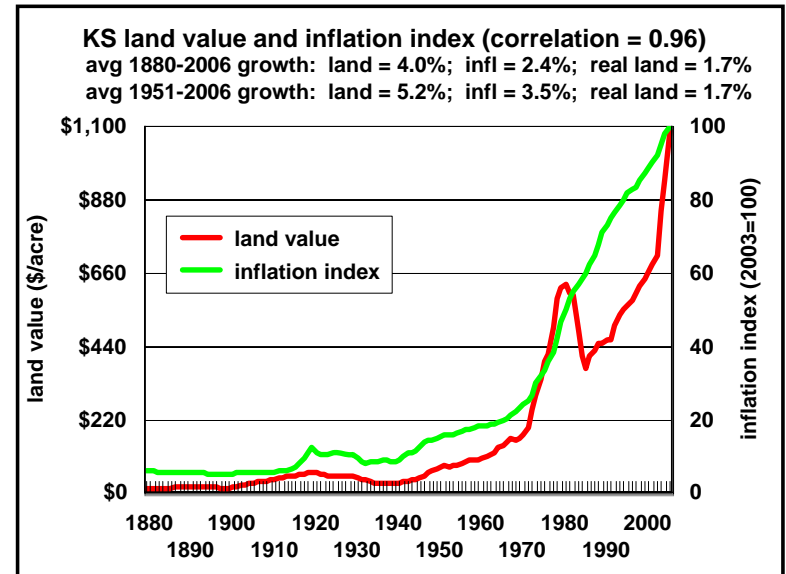
1910: Sumter = \$13; Houston = \$17; Madison = \$21 (Madison never fell in 80's)

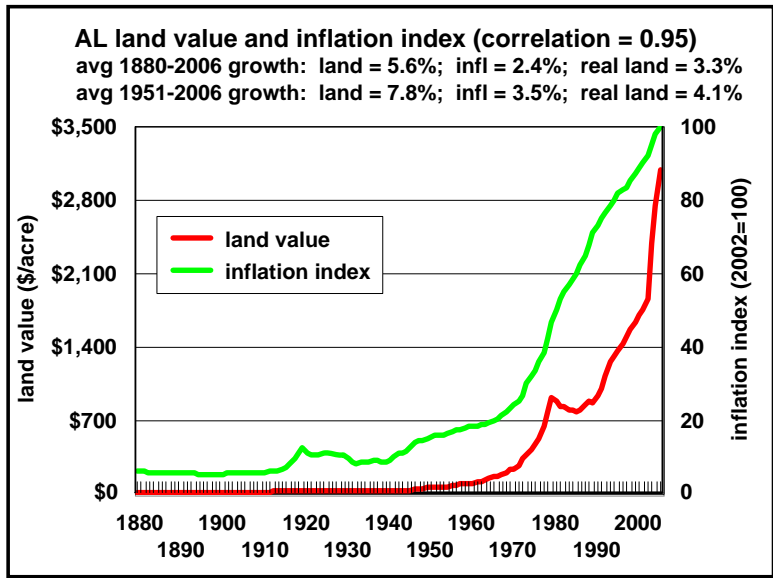


1879 starting land value for Kansas was \$10.30

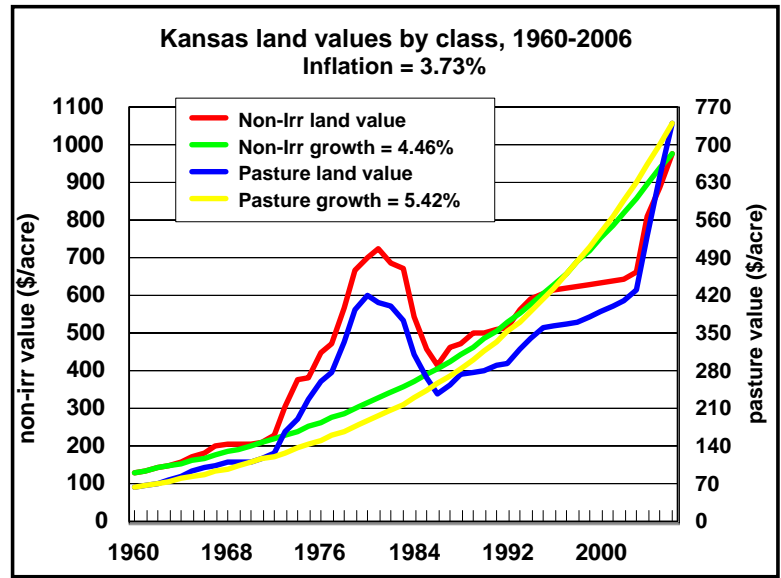


1879 starting land value for Alabama was \$3.82



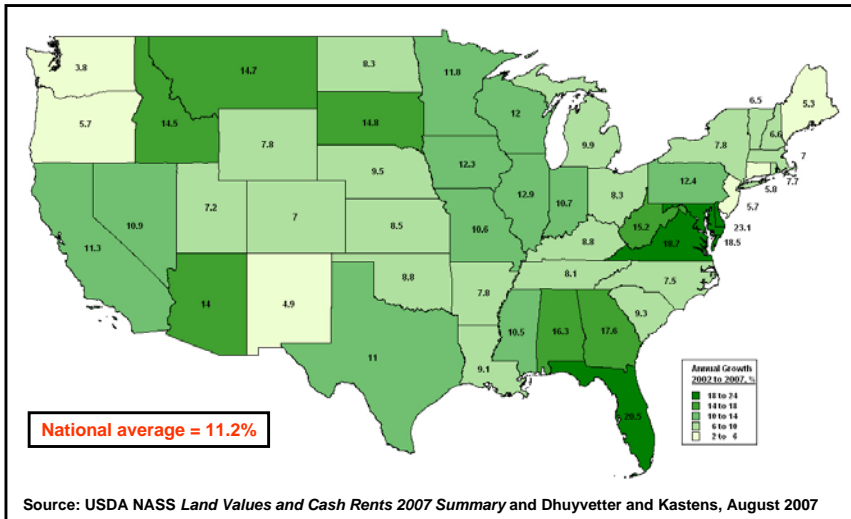


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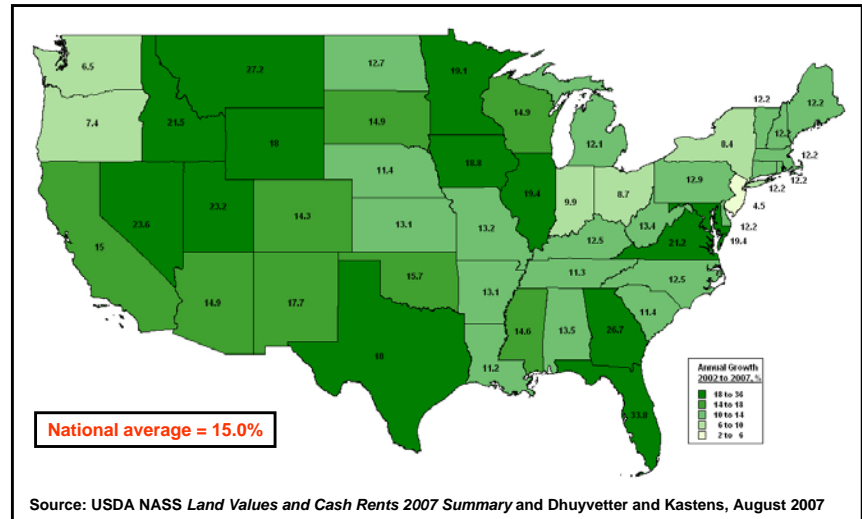
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Crop Land Average Annual Growth Rate Jan 1, 2002 to Jan 1, 2007, percent (geo mean)



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Pasture Land Average Annual Growth Rate Jan 1, 2002 to Jan 1, 2007, percent (geo mean)



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Returns to land

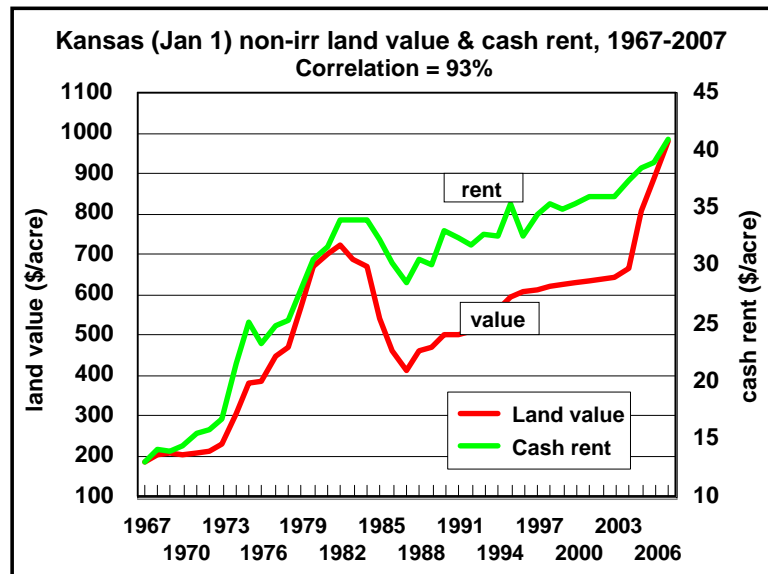
- Capital gains (growth)
- Cash returns (rent)
- The two returns to land are similar to other investments such as the stock market (capital gains and dividends)

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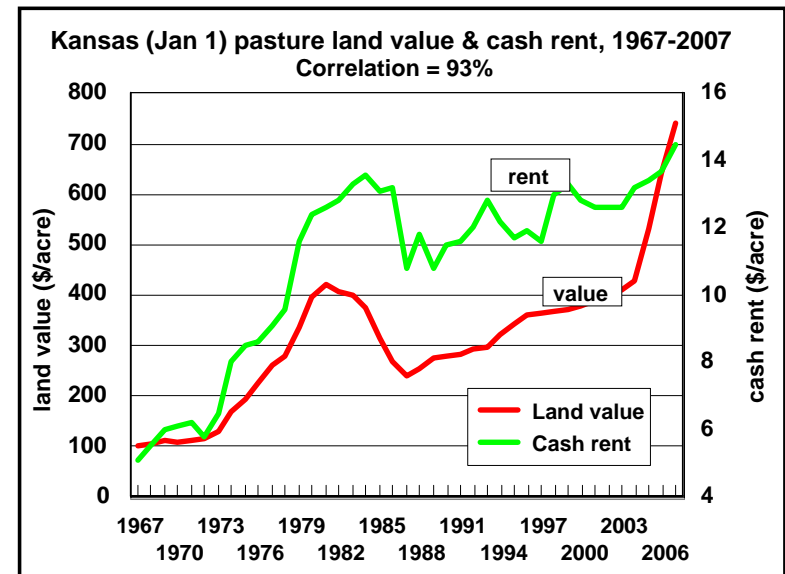
Rent

- KFMA farms with > 100 crop acres (2004-2006 avg)
 - 89% of KFMA farms use rented crop land (range across six regions, 83%-94%)
 - 62% of crop acres farmed by KFMA members are rented (range across six regions, 53%-72%)
- For owner-operators rent is the “profit” assigned to land after all other opportunity costs are considered

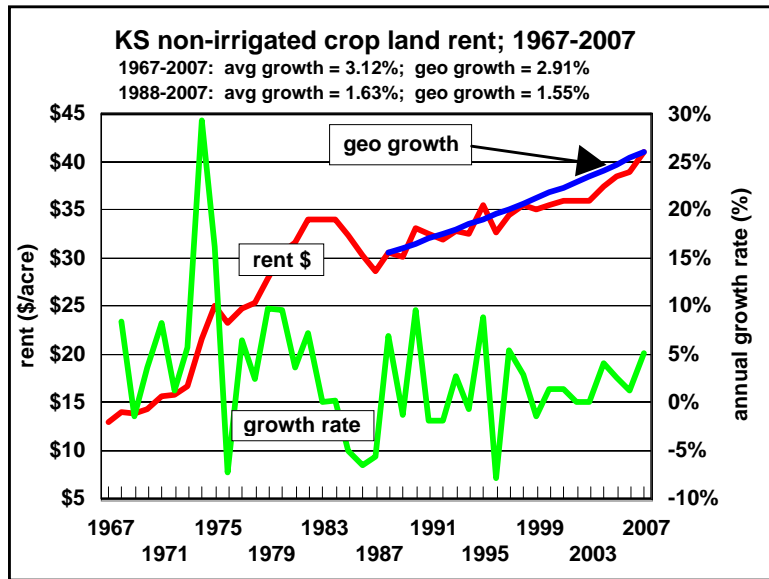
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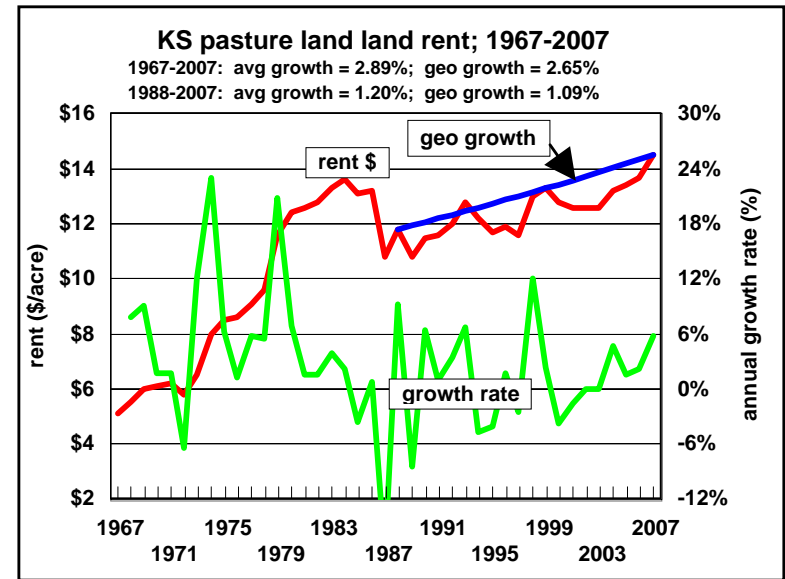
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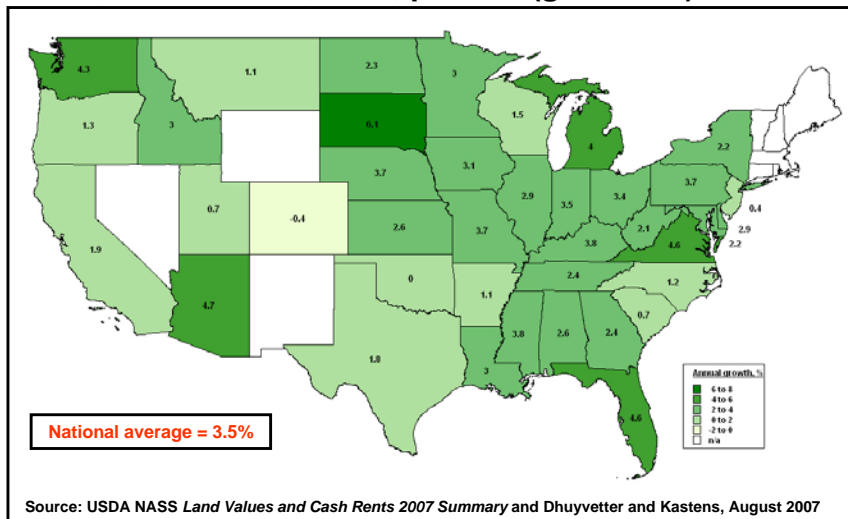


Suggested expected ag growth rate = 2.37% (but if ethanol continues . . . ?)



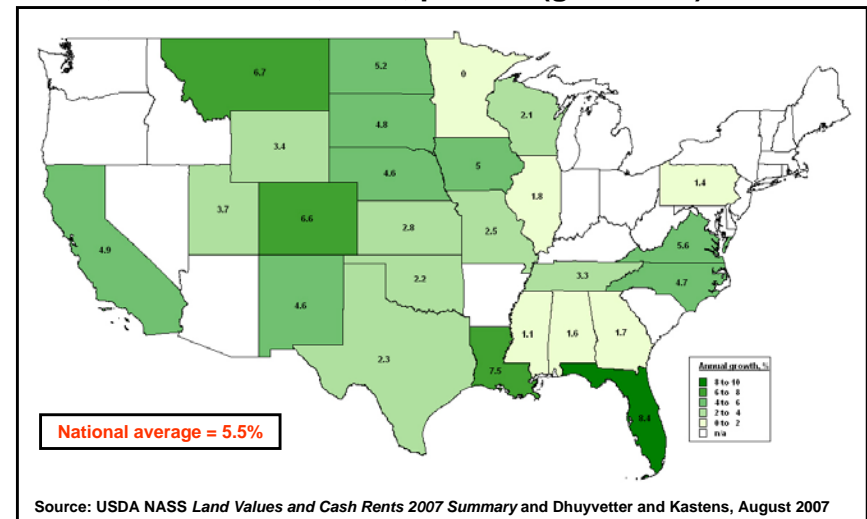
Suggested expected ag growth rate = 2.05% (but if ethanol continues . . . ?)

Cropland Rent Average Annual Growth Rate Jan 1, 2002 to Jan 1, 2007, percent (geo mean)

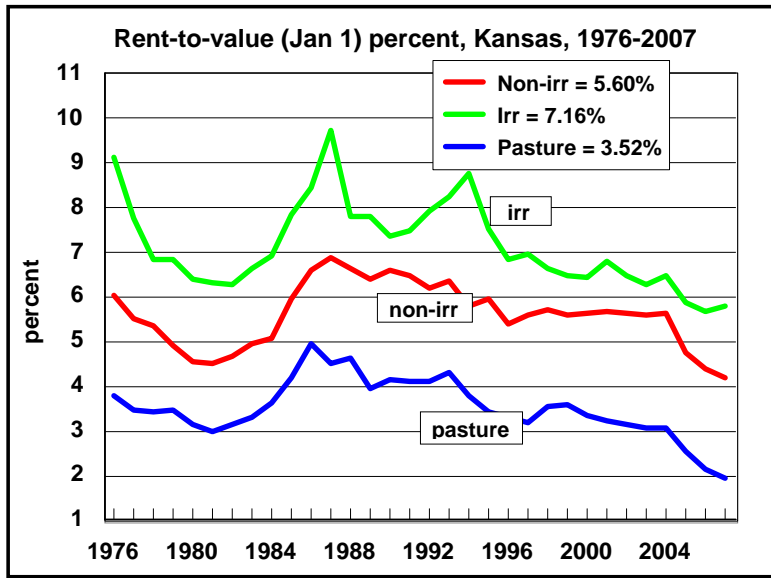


Source: USDA NASS Land Values and Cash Rents 2007 Summary and Dhuyvetter and Kastens, August 2007

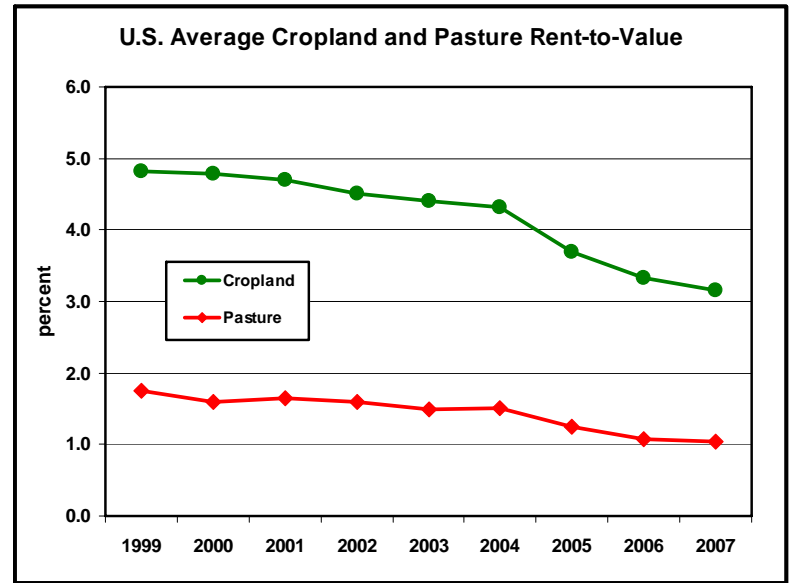
Pasture Rent Average Annual Growth Rate Jan 1, 2002 to Jan 1, 2007, percent (geo mean)



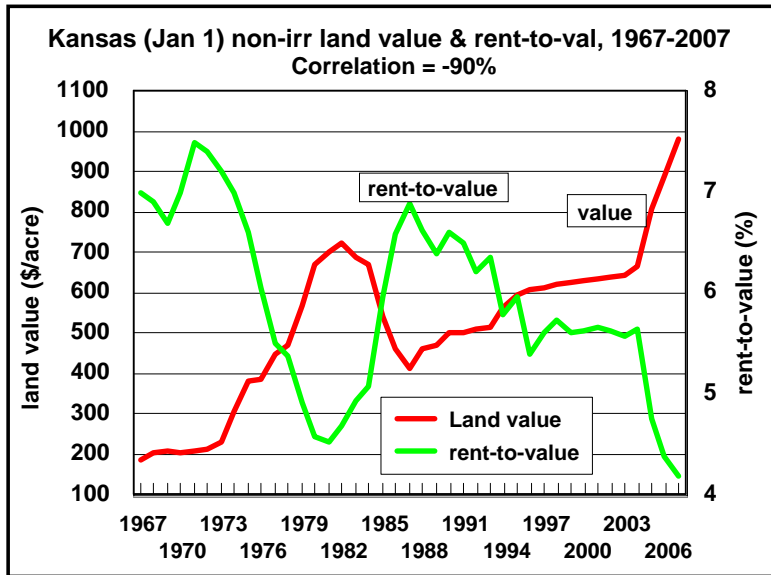
Source: USDA NASS Land Values and Cash Rents 2007 Summary and Dhuyvetter and Kastens, August 2007



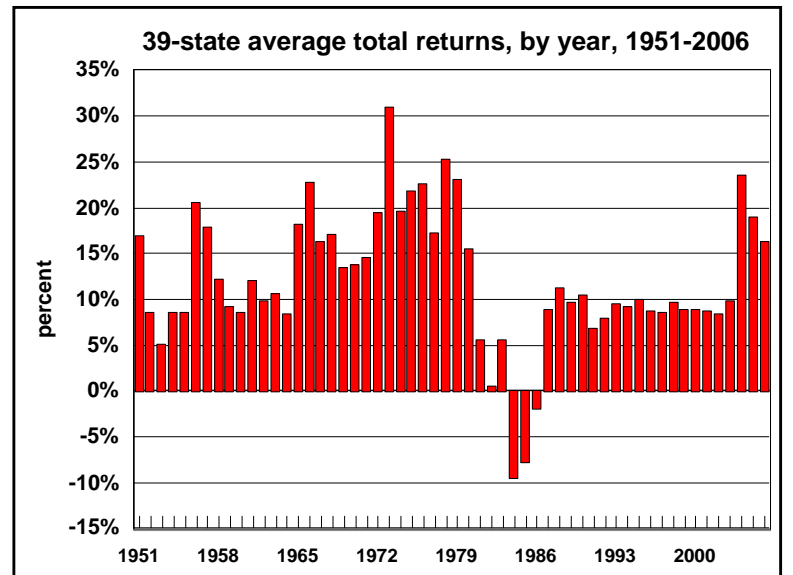
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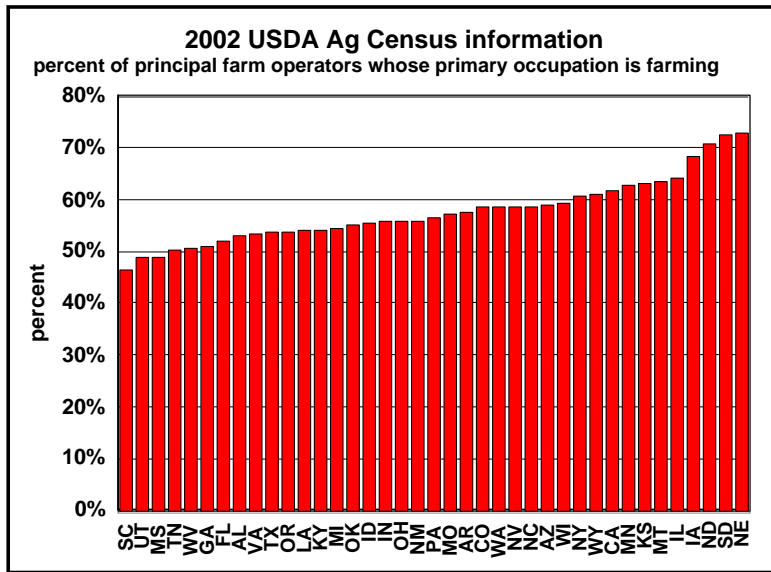
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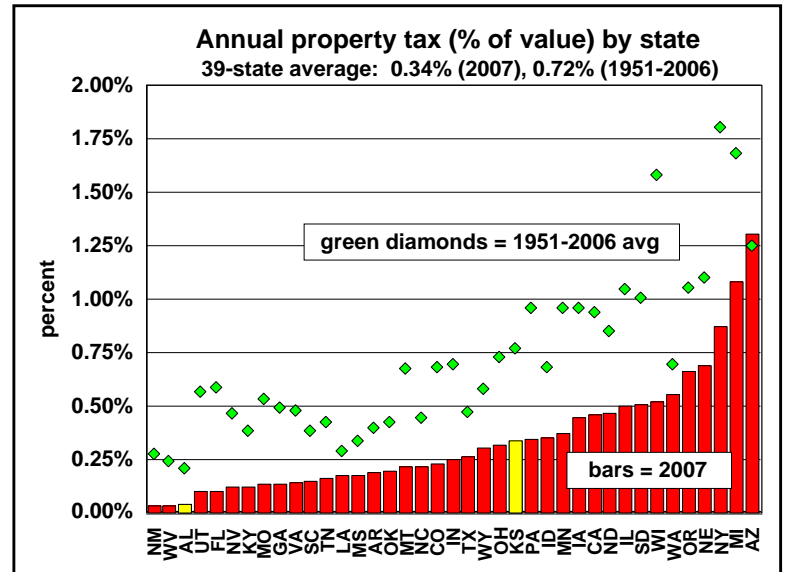
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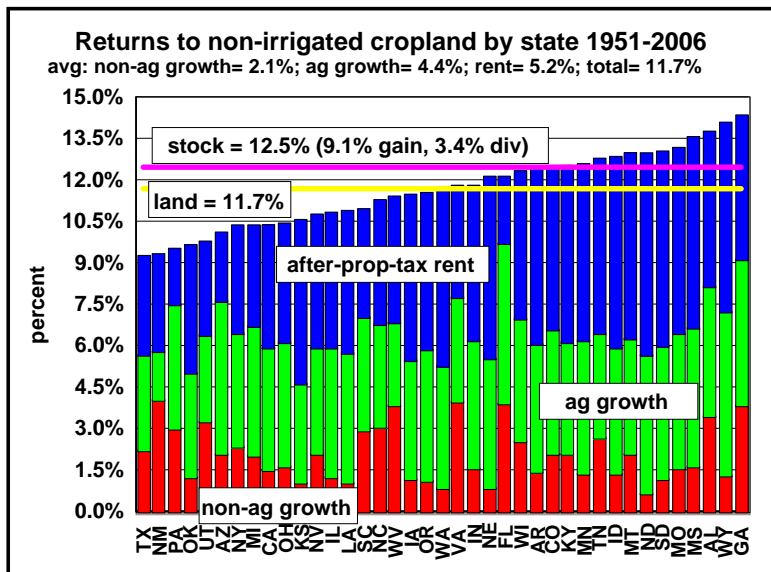
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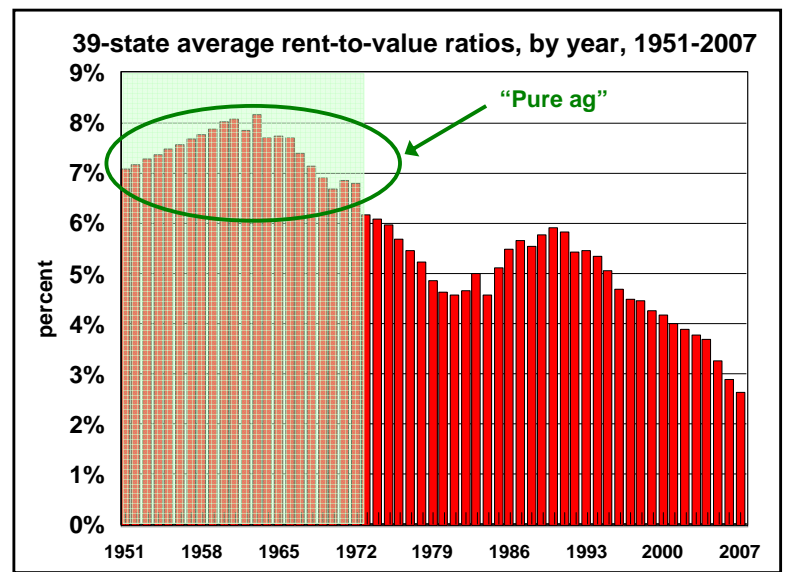


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39 states ranked by total returns to land

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Capitalization Formula

$$Value = \frac{Annual\ land\ income}{Capitalization\ rate}$$

$$Cap\ rate\ (rtv) = \frac{Annual\ land\ income}{Value}$$

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Agricultural Market Value of Agricultural Land

- Based on the idea of an ag cap rate
- Used average after-property-tax RTV 1951-72
 - Early on while ag still is dominant
 - Before wild inflation of the 1970's
- Alabama ag cap rate = 8.03%
- Kansas ag cap rate = 6.64%
- 39-state average cap rate = 6.57%

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Agricultural Market Value of Agricultural Land using Alabama crop land as an example

- Jan. 1, 2007 crop land value = \$3400 /acre
- Cash rent for 2007 = \$41.00 /acre
- 2007 property tax = \$1.38 /acre
- 2007 after-property-tax rent = \$39.62 /acre
- \$39.62 / 0.0803 = \$493.40 /acre

- AMVP = \$493.40 / \$3400 = 0.145 = 14.5%

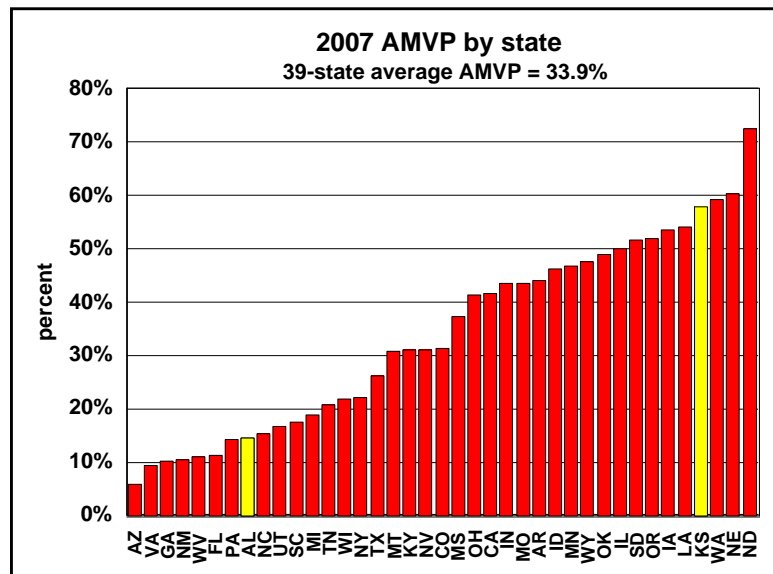
60

Agricultural Market Value of Agricultural Land using KS non-irrigated cropland as an example

- Jan. 1, 2007 land value = \$980 /acre
- Cash rent for 2007 = \$41.00 /acre
- 2007 property tax = \$3.27 /acre
- 2007 after-property-tax rent = \$37.73 /acre
- \$37.73 / 0.0664 = \$568.22 /acre

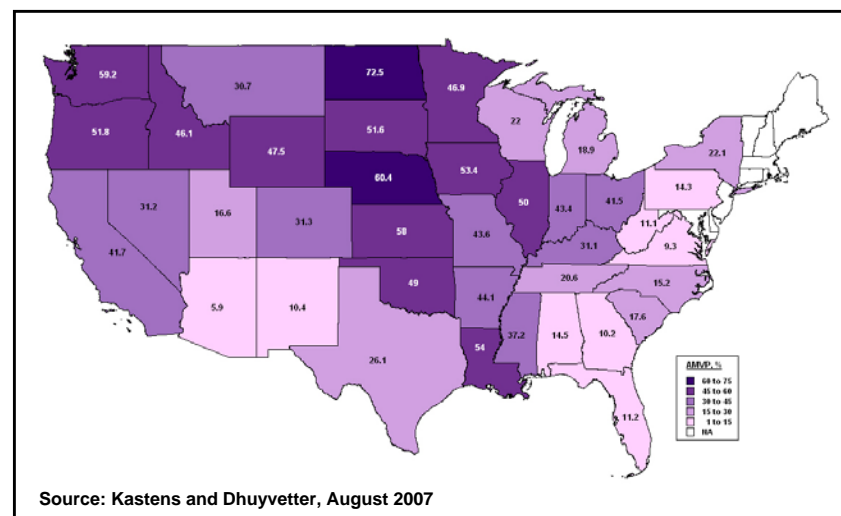
- AMVP = \$568.22 / \$980 = 0.580 = 58.0%
(non-irr)

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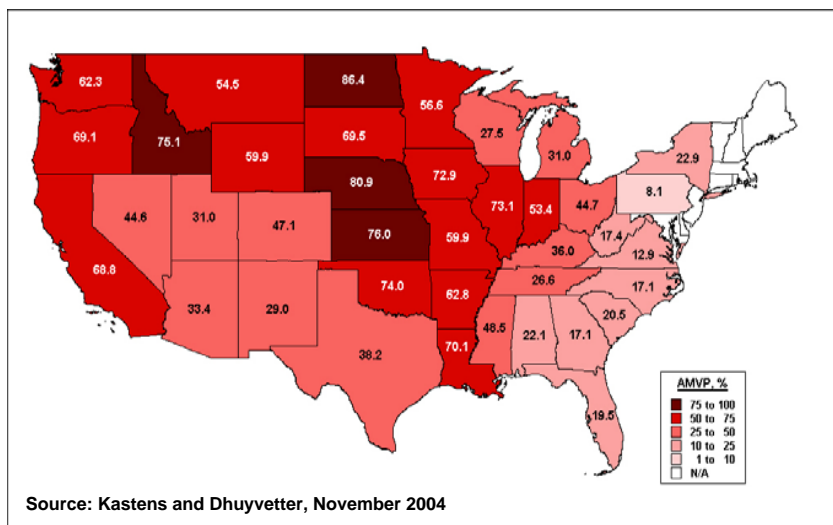
percent of land value that is due to agriculture

Portion of Land Value Attributed to Agricultural (production and government payments)



Source: Kastens and Dhuyvetter, August 2007

Portion of Jan 1, 2004 Crop Land Value Attributed to Agricultural (production and government payments)

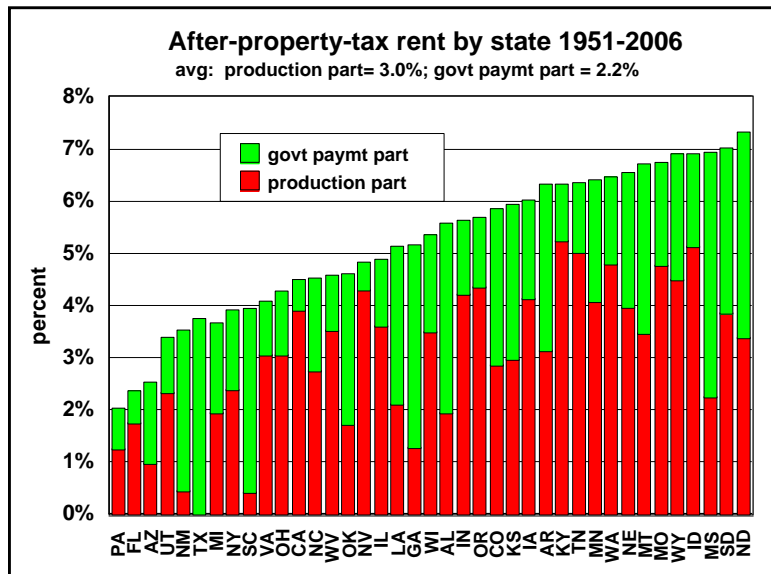


Source: Kastens and Dhuyvetter, November 2004

previous year's map for comparison

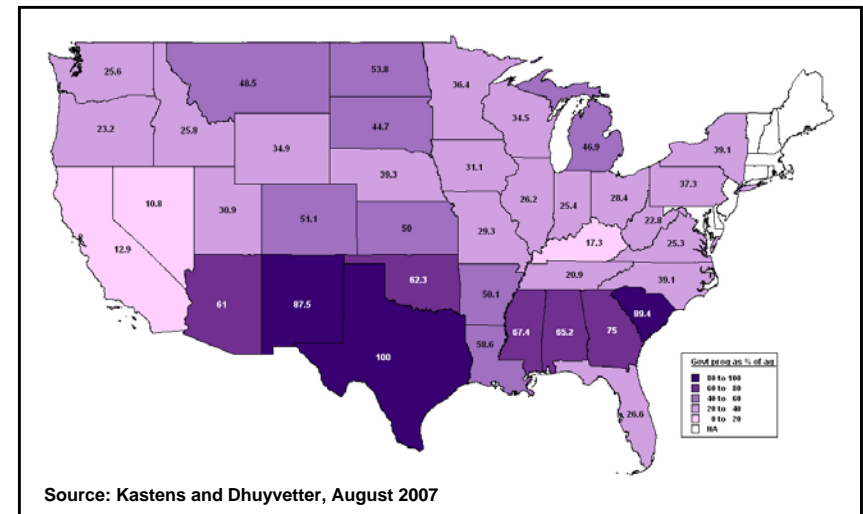
Government Program Payments

- Generally, are thought to be capitalized into land values and cash rents
- Many Great Plains states and many Southern states are highly dependent on government program payments



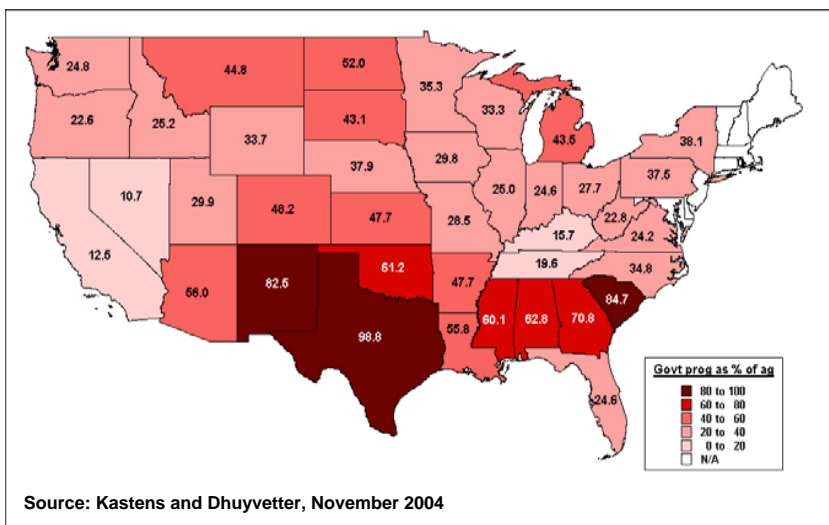
ranked by total rent

Percentage of Agricultural Value Attributed to Government Program Payments



government payments as a percent of agricultural rent

Percentage of Jan 1, 2004 Agricultural Crop Land Value Attributed to Government Program Payments

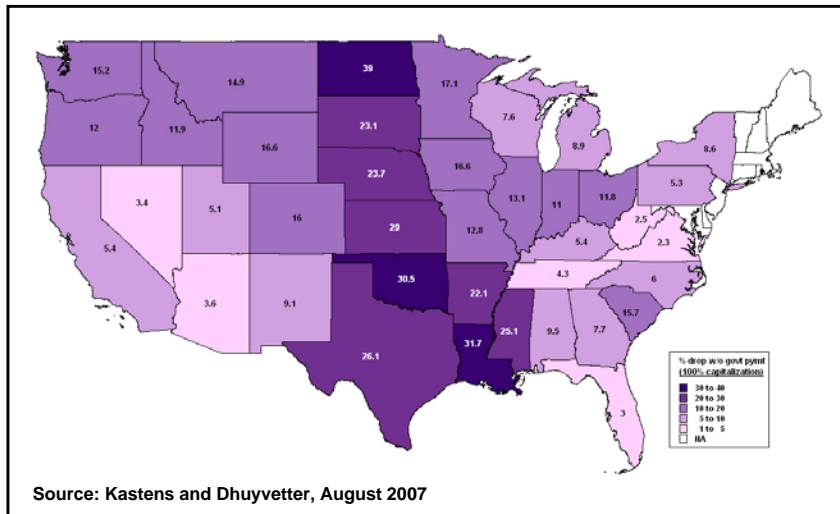


previous year's map for comparison

Government Program Payments

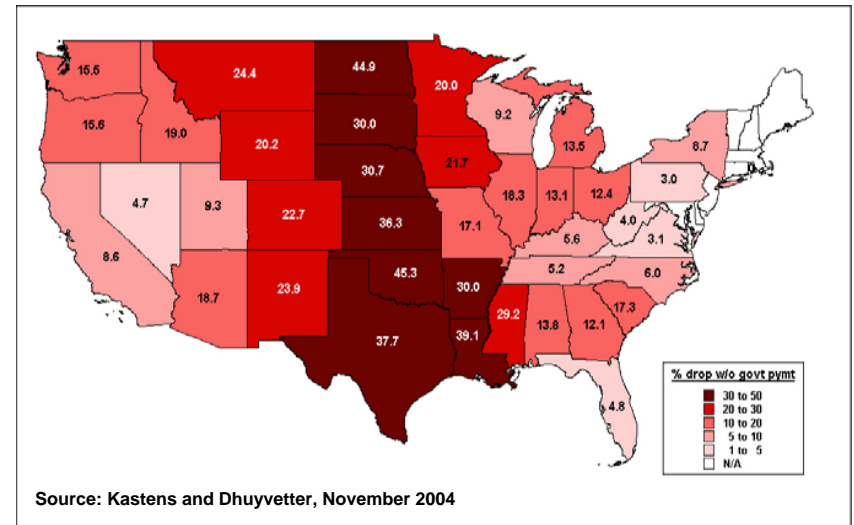
- States whose land values have substantial non-ag components would not suffer as much in the absence of payments
 - Alabama and Georgia are notable Southern states
 - Great Plains states don't have that advantage

Estimated Reduction in Land Value with the Elimination of Government Programs (100% cap)

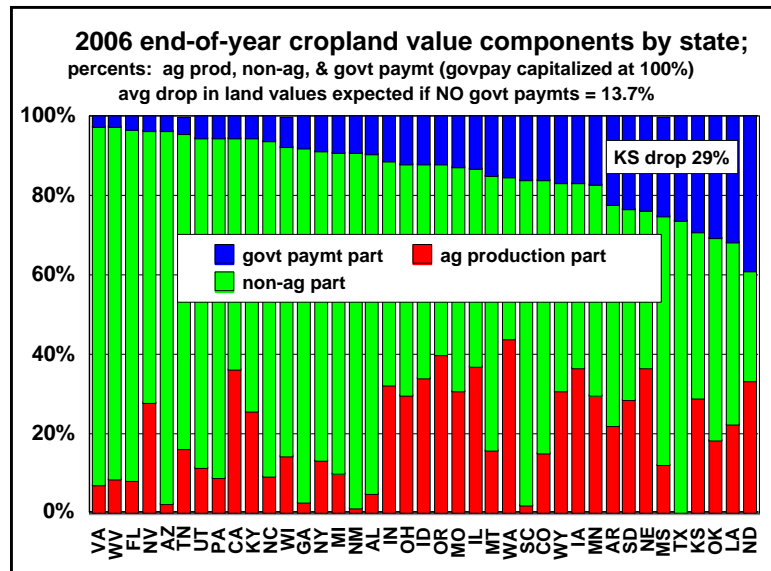


reduction is proportional to capitalization rate (e.g., KS=14.5% with 50% cap)

Estimated Reduction in Jan 1, 2004 Crop Land Value with the Elimination of Government Programs



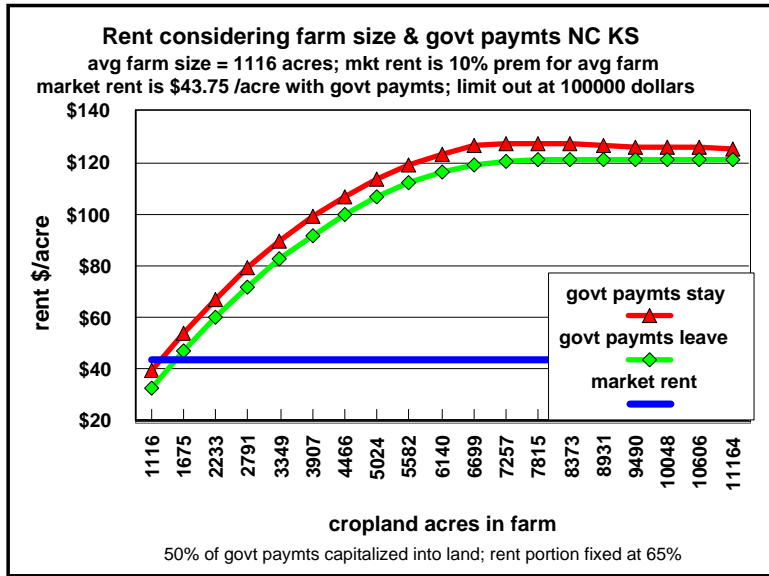
previous year's map for comparison



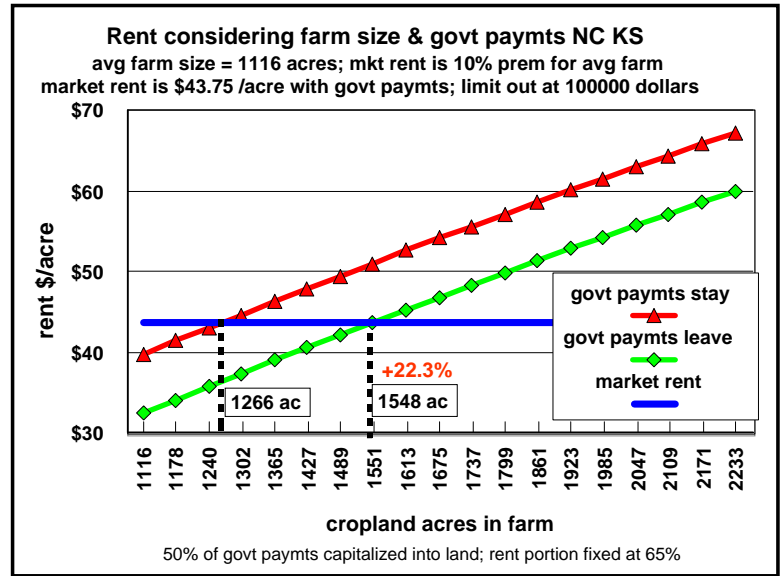
ranked by percent of land value that is due to government program payments

Would land values really fall that far?

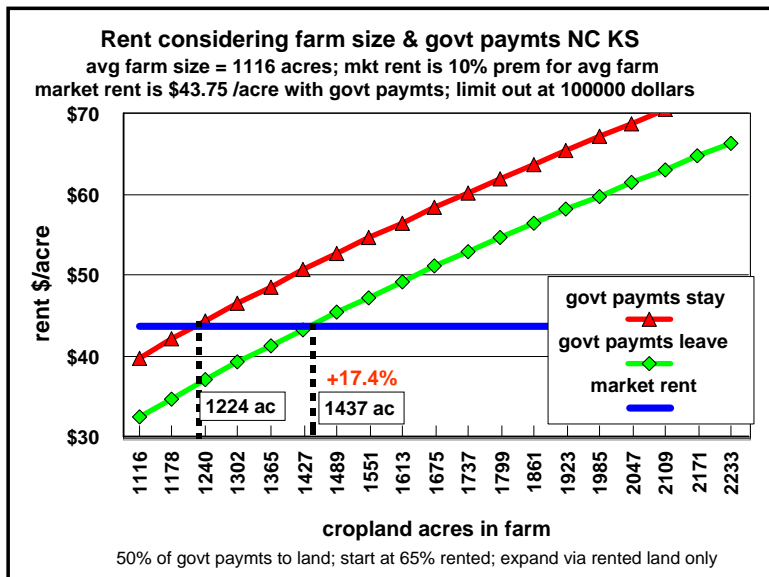
- Tract-specific sales and rent prices indicate that gov't payments are not fully capitalized
- Rental contracts are "sticky"
- Increasing importance of non-ag factors
- Excess profits in big & growing farms
 - Very large KS farms still have ROA of 8% paying existing rent yet taking 36% hit on their land values (Dumler, Risk & Profit Conference 2005)
 - Easier to exploit economies of size in level playing field regarding govt payments
 - Increased competition would bolster rents



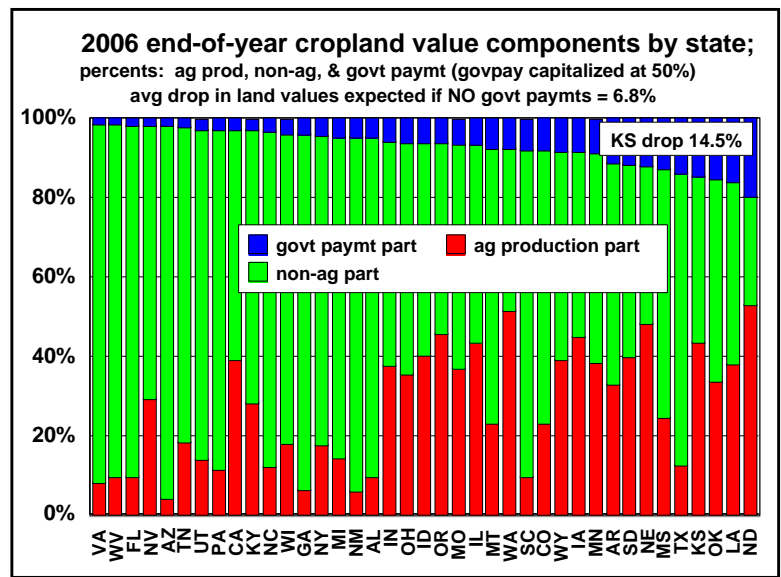
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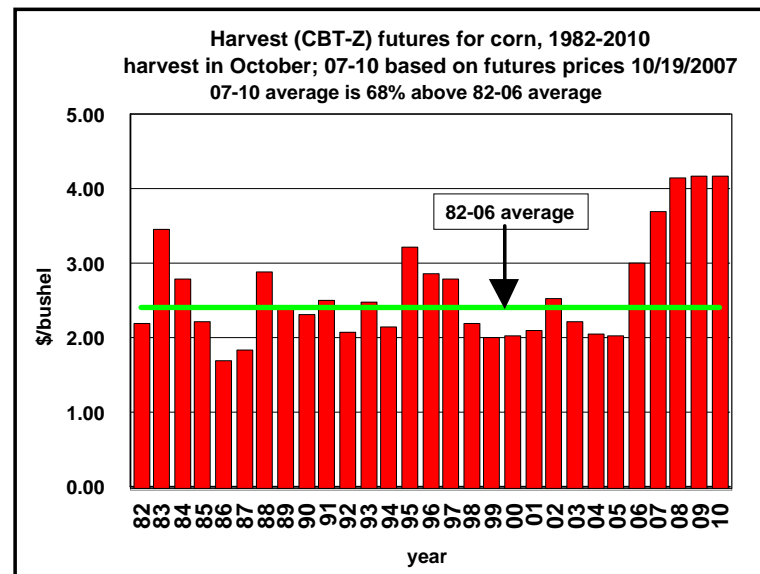
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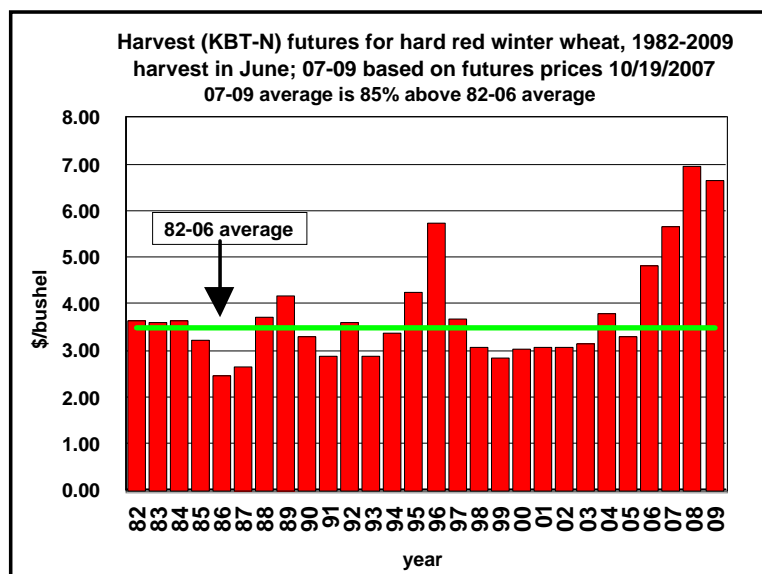
Future land values?

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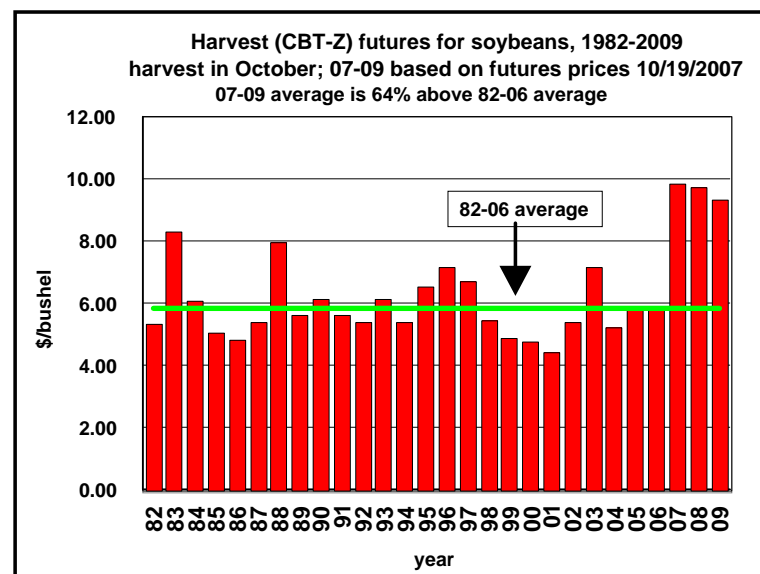
Unprecedented opportunity in corn production – even 4 years out!

83



But, wheat will be impacted as well . . .

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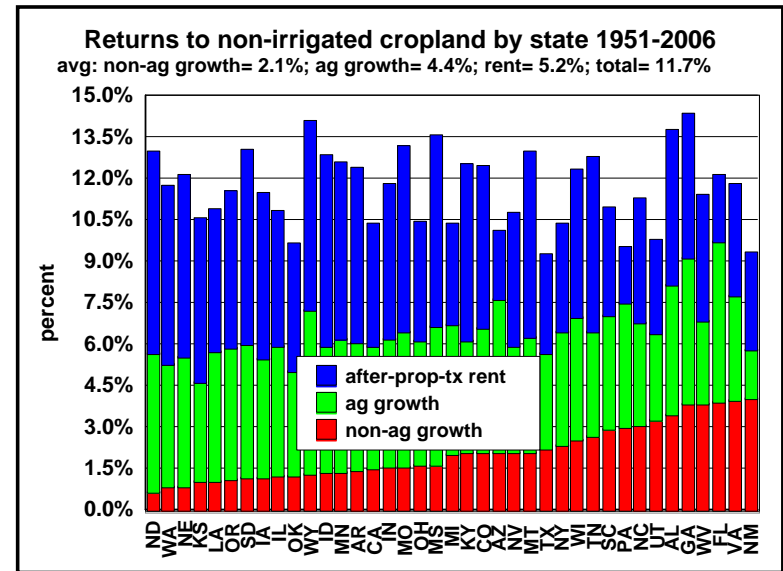


As will be soybeans . . . as acres are drawn to bio-fuel crops

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Relationship between yields and crop prices and rents and land values (1950-2006)

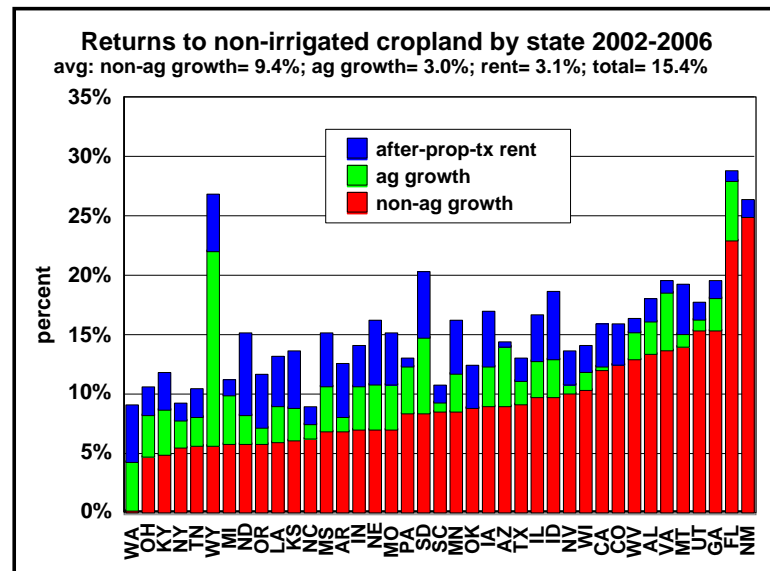
	Rent (% change)	Value (% change)
Yield (1% change)	0.70	0.77
Price (1% change)	0.71	0.99



39 states ranked by non-ag growth

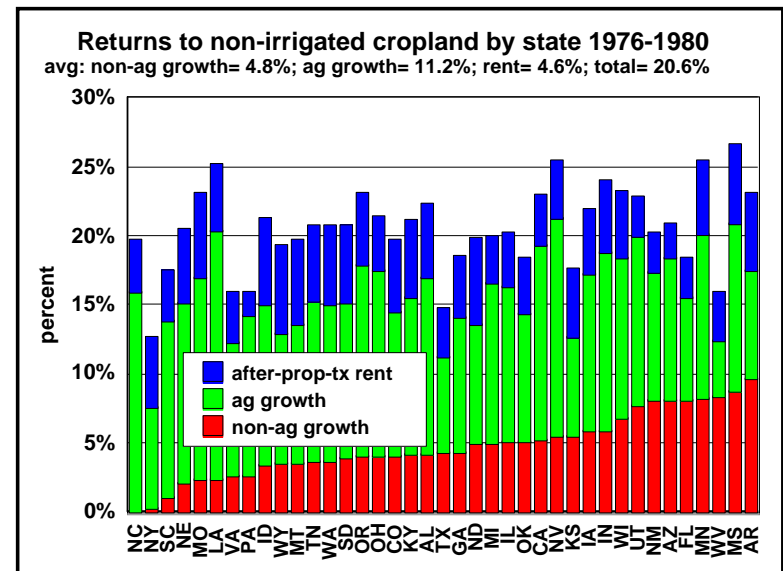
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Non-ag growth much more important lately; total returns not especially high

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Dominated by growth in ag rents (inflation); total returns very high

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Factors impacting agricultural land values...

- **Ag factors**
 - Ag portion of agricultural land has been diminishing
 - Reduced ability to cash flow traditional land loans with value of agricultural production
 - Is this about to change due to ethanol?
- **Non-ag factors**
 - Urbanization, recreational use of land, etc.
- While agricultural land may continue to be a good investment, producers need to decide if they want to tie up equity in land versus other assets
- Increasingly difficult to analyze/evaluate land purchases/prices

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The screenshot shows the AgManager website (www.agmanager.info) in a Windows Internet Explorer browser window. The website's header includes the AgManager logo and navigation links such as 'About', 'Contributors', 'Useful Info', 'Site map', and 'Feedback'. The main content area is titled 'A Website Providing Information and Tools For The Competitive Business' and features a central graphic with the URL 'www.agmanager.info'. Below this, there are several article teasers and advertisements, including one for 'MAST: A PROGRAM FOR PROGRESSIVE PRODUCERS AND MANAGERS'. On the right side, there is a 'Site Updates' section listing recent articles and their authors. A large black box with the word 'Questions?' is overlaid on the bottom center of the screenshot.