

## Land Values and Land Buying Principles

Kevin C. Dhuyvetter -- [kcd@ksu.edu](mailto:kcd@ksu.edu) -- 785-532-3527  
Terry L. Kastens -- [tkastens@ksu.edu](mailto:tkastens@ksu.edu) -- 785-532-5866

Department of Agricultural Economics  
Kansas State University

Winter 2006-07 meetings



### Purpose of land talks

- Develop an understanding of the underlying economic principles and management aspects of land ownership and leasing
- Trying to reduce decisions to numbers
- Two decision tools:
  - *KSU-Lease.xls*
  - *KSU-Landbuy.xls*

Related papers are found at  
[www.agmanager.info](http://www.agmanager.info)

## **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)

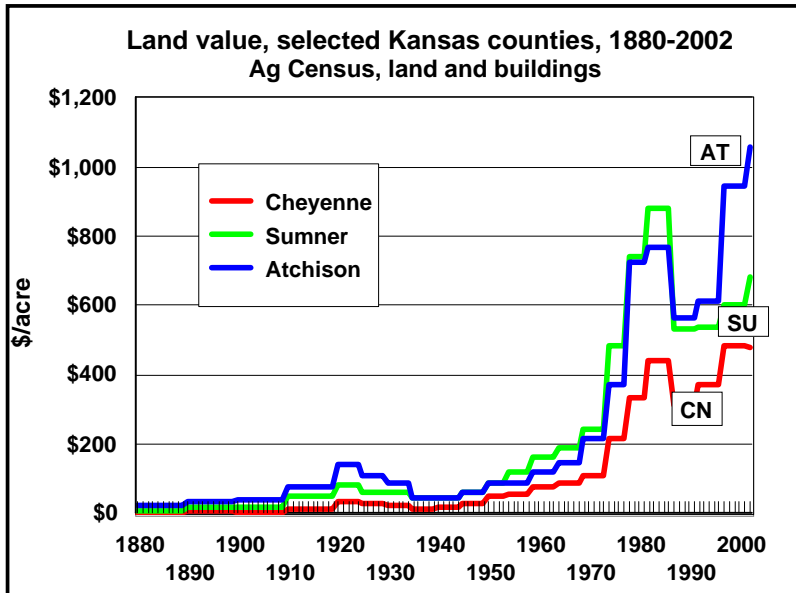
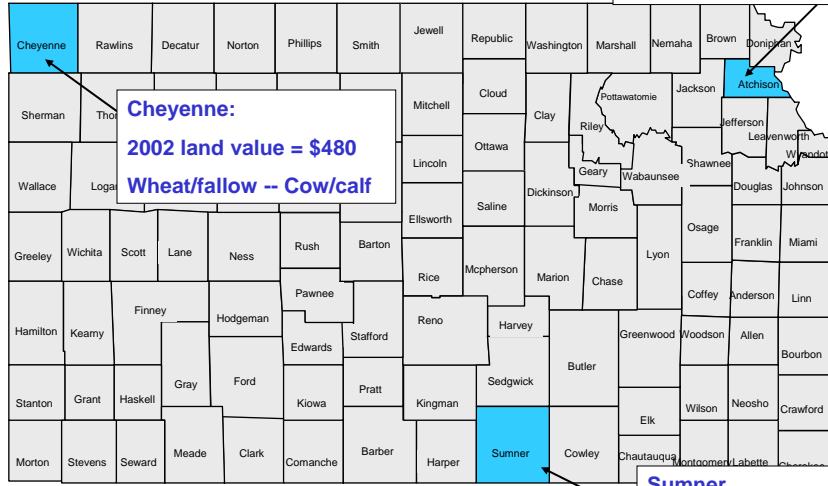
3

## **Land is Unique**

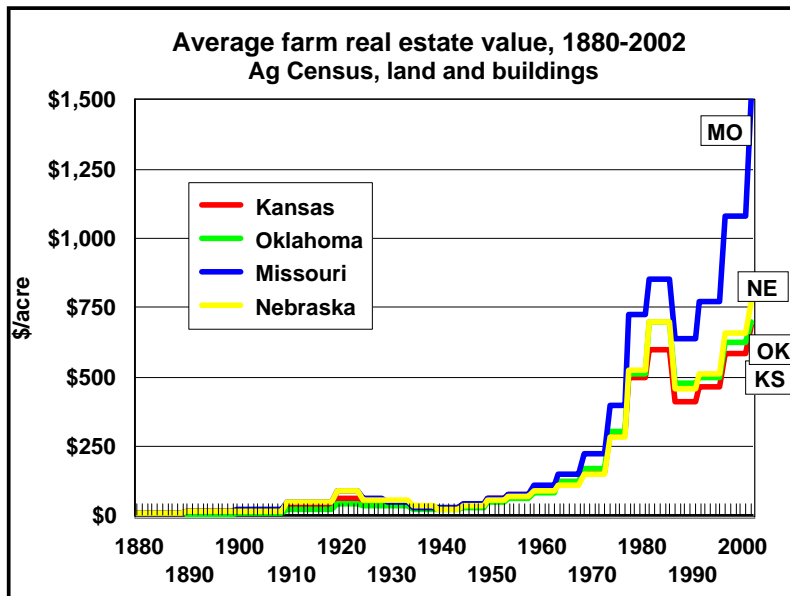
- **Most fixed of farming assets**
  - Residual claimant
  - Capitalizes government subsidies
- **Often is taxed**
  - Favorably or unfavorably
- **Has non-ag benefits that may be pecuniary**
- **Has non-pecuniary benefits**
- **A long term investment involving long term expectations – history is a guide**

4

**Diversity in agriculture across Kansas impacts the value of land...**



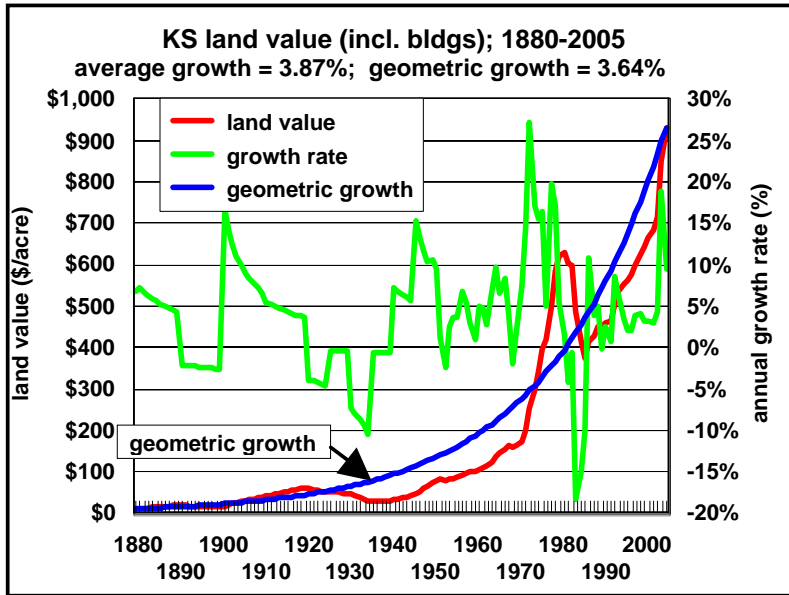
... but diverse location land values follow similar patterns over time.



Land is a regional/national market ...

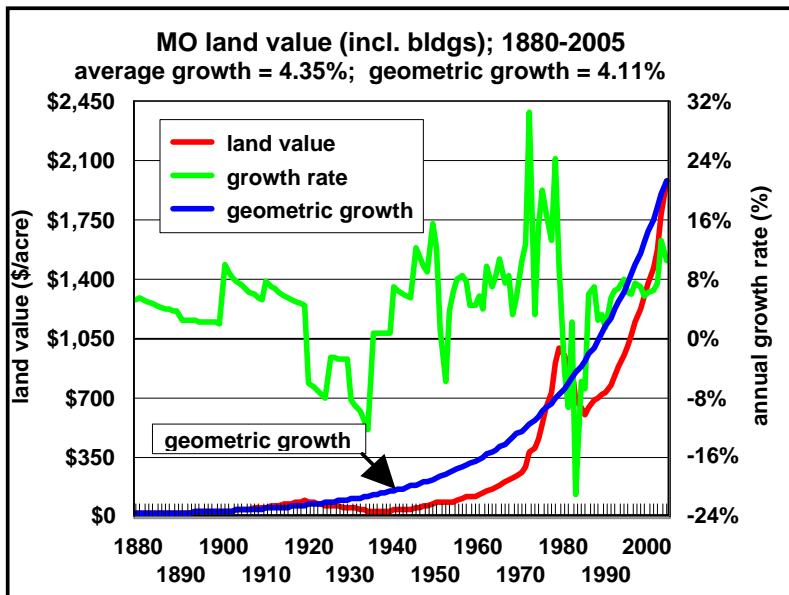
**Long-term land growth rates  
(e.g., capital gains)**

Long-term growth rates in Kansas



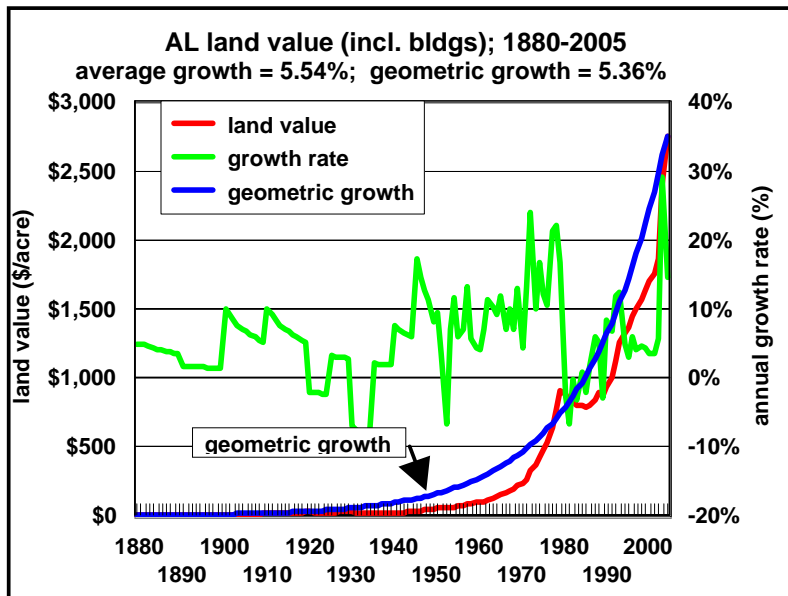
1879 starting land value for Kansas was \$10.30

Long-term growth rates in Missouri



1879 starting land value for Missouri was \$13.10

Long-term growth rates in Alabama

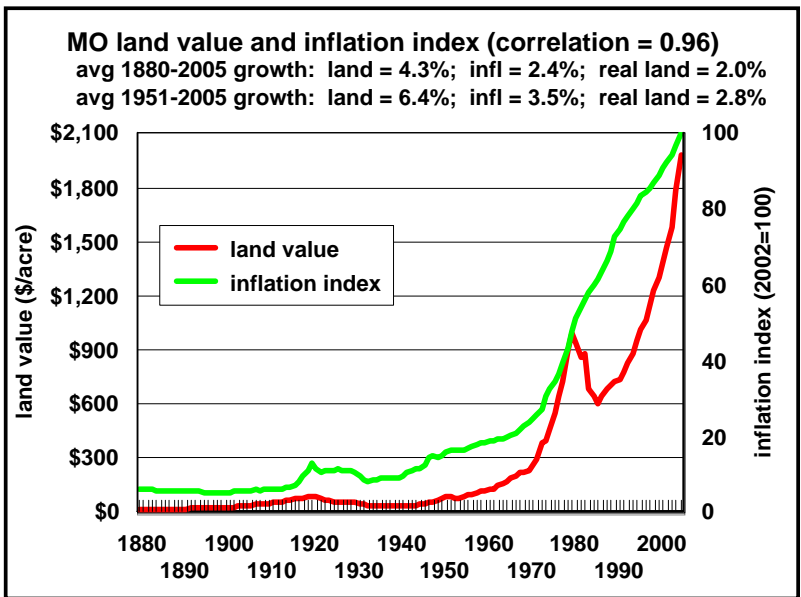
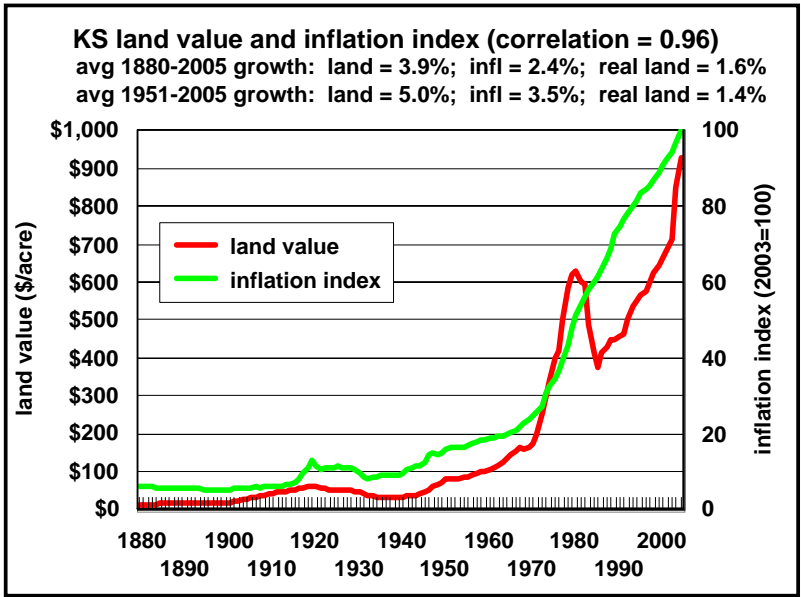


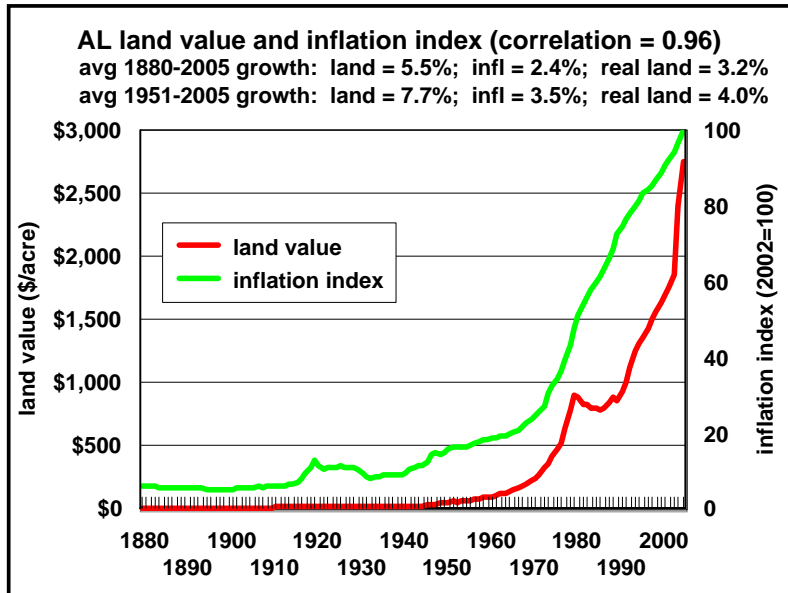
1879 starting land value for Missouri was \$3.82

16

How do historical land growth rates compare to historical inflation indices?

17



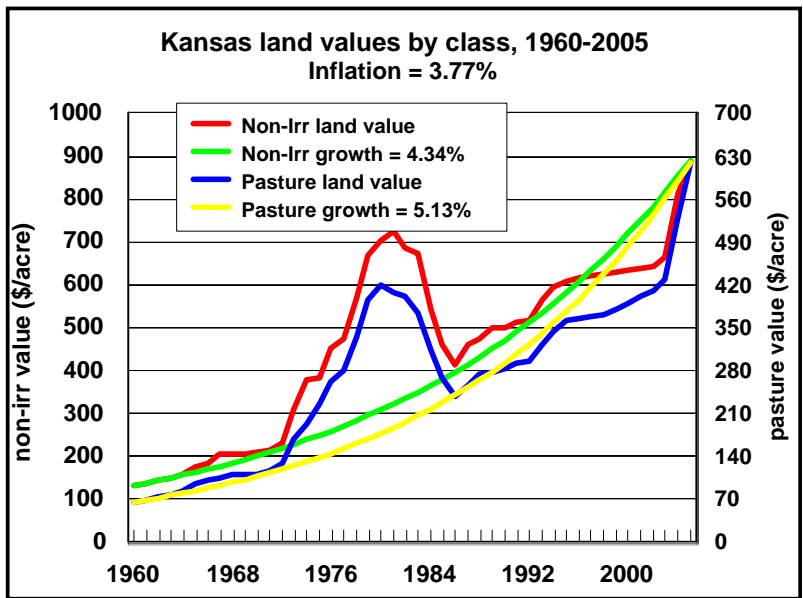


20

**How do growth rates for different classes of land (e.g., crop versus pasture) compare?**

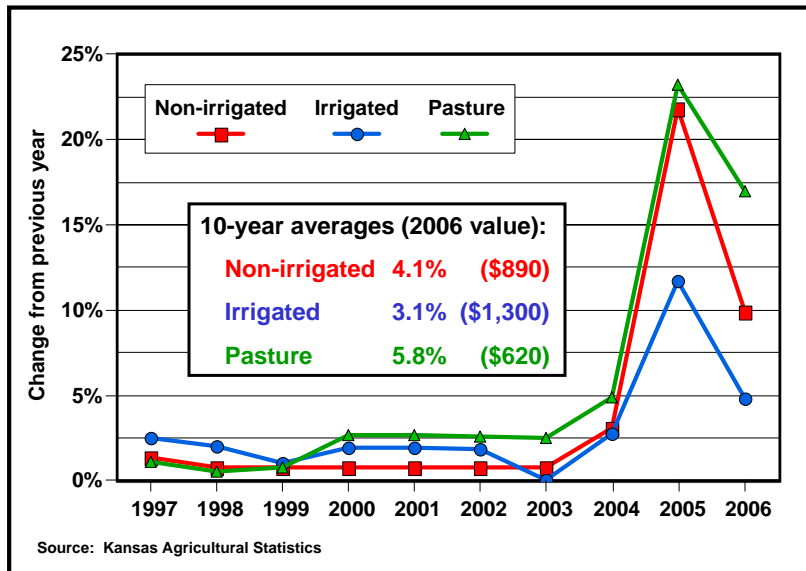


21



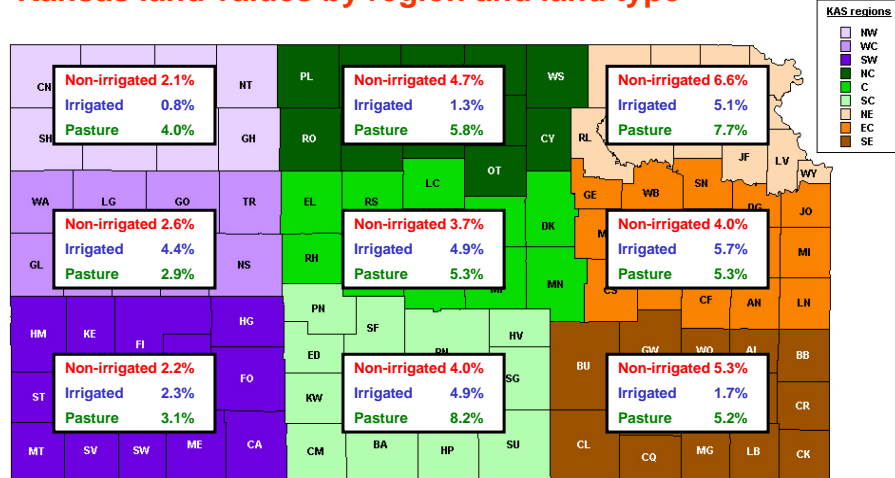
22

### Kansas year-to-year land value changes ... (i.e., annual growth rates)



23

## 10-year (1997-2006) average annual growth rate in Kansas land values by region and land type



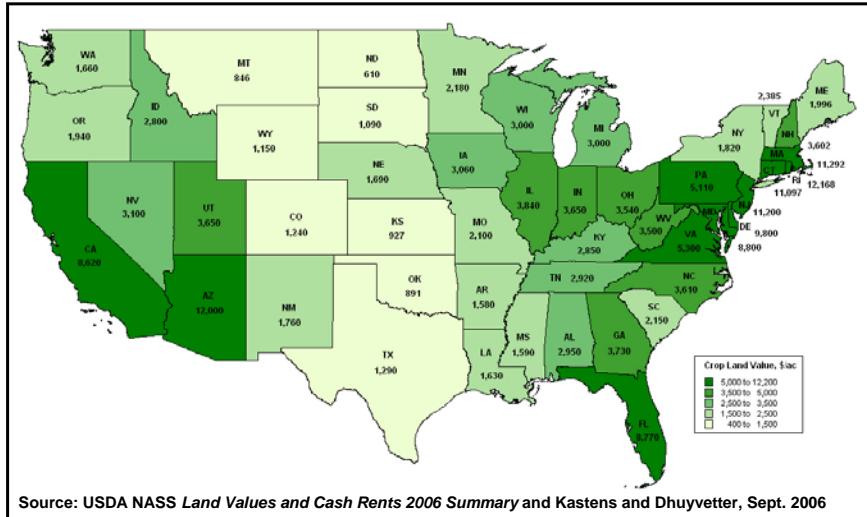
Both a regional and land type effect on growth rates over the last ten years.  
What's driving these differences?

24

How do trends in land values compare across the country?

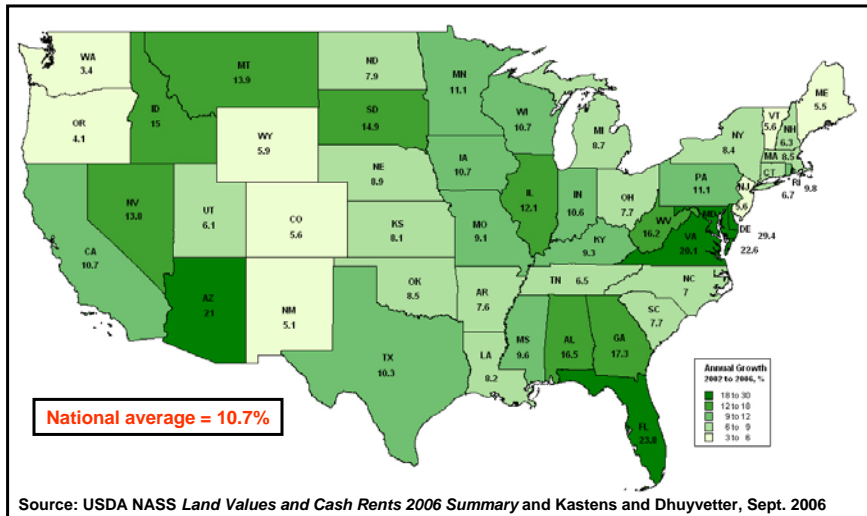
25

## Crop Land Average Value per Acre by State January 1, 2006



26

## Crop Land Average Annual Growth Rate by State 2002 to 2006, percent



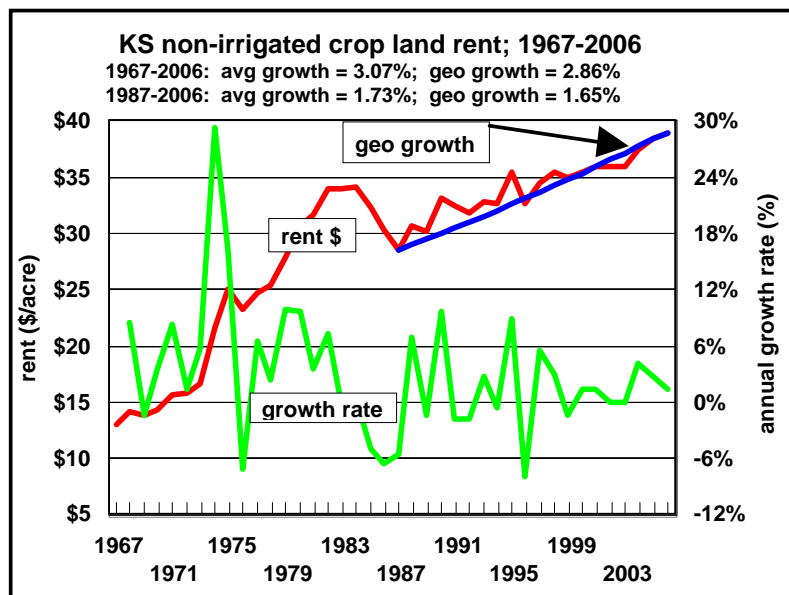
27



## Returns to land

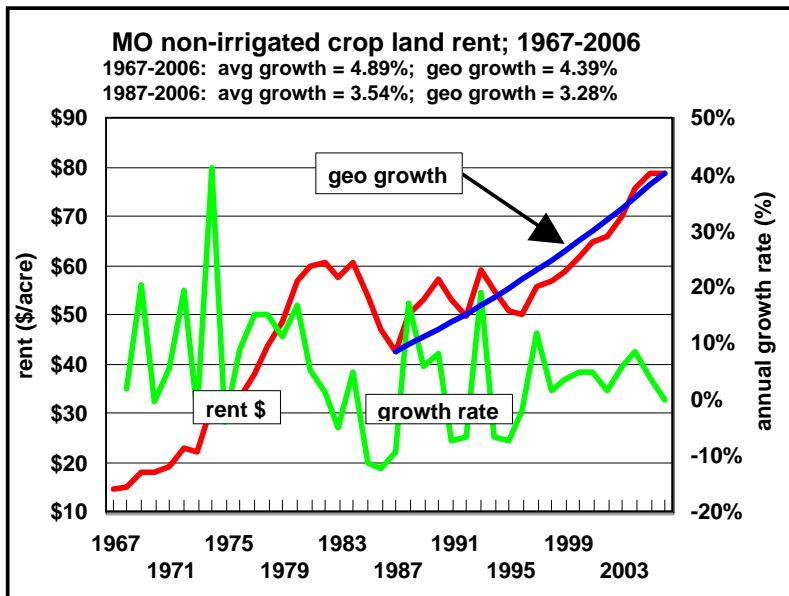
- Capital gains (growth)
- Cash returns (rent)
- The two returns to land are similar to other investments such as the stock market (capital gains and dividends)

30

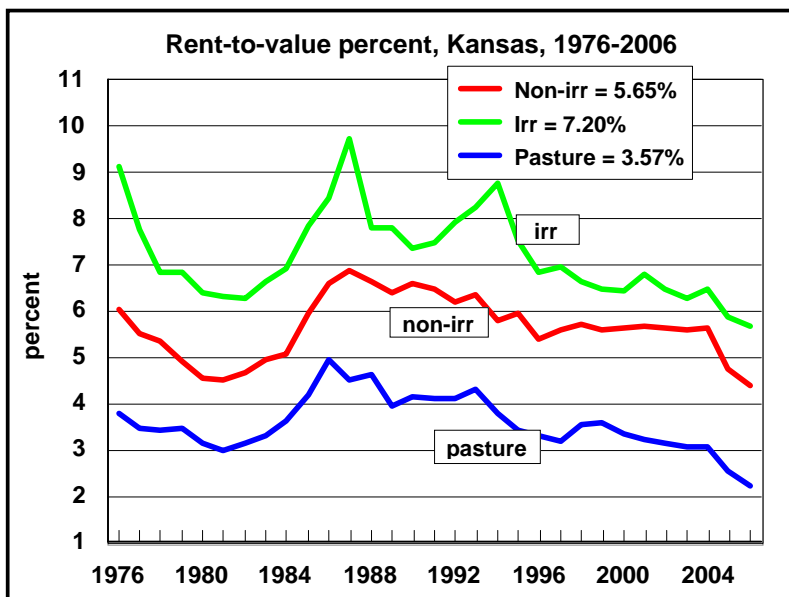


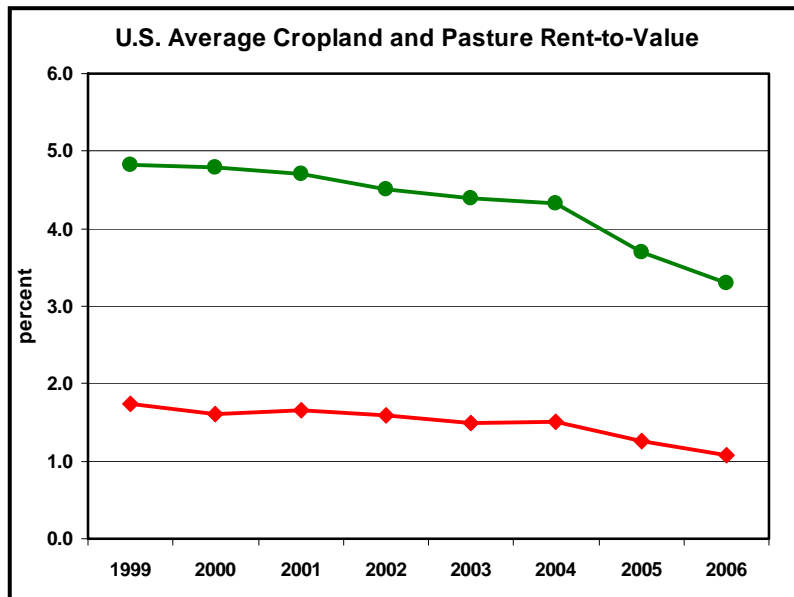
Suggested expected ag growth rate = 2.40%

31



Suggested expected ag growth rate = 4.22%





What are implications of falling rent-to-value ratios?

36

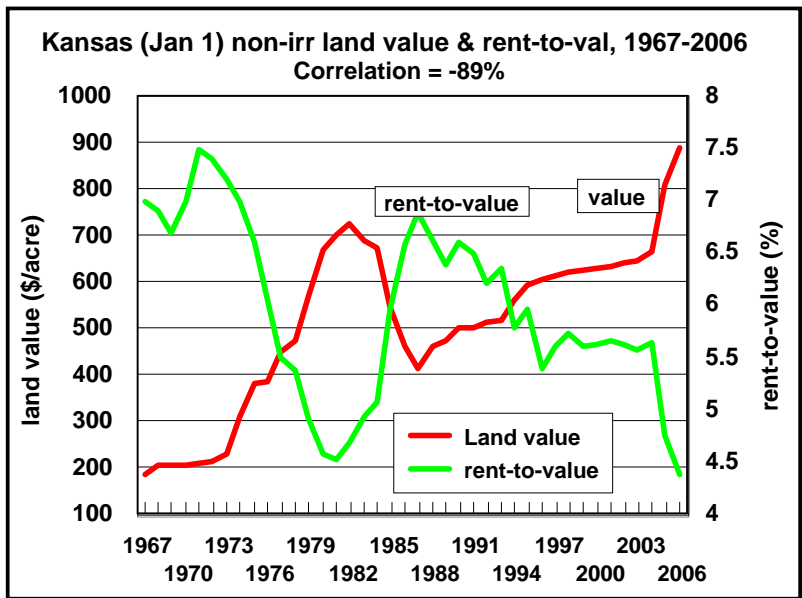
## Buying and owning land – considerations

(paper on [www.agmanager.info](http://www.agmanager.info))

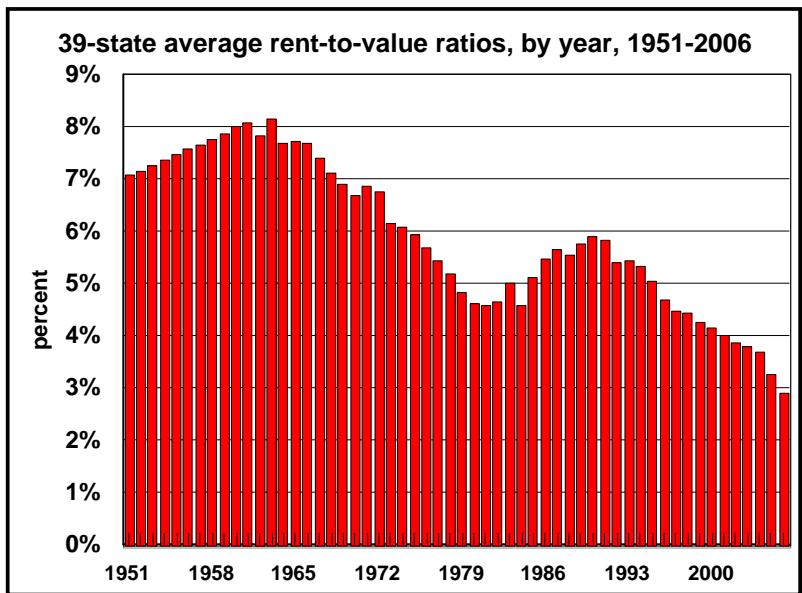
- **Total return = rent + capital gain**
- **Land doesn't cash flow when purchased**
  - i.e., rents don't cover a 100% loan
  - cash flow is not the same as profitability
  - rents grow, loan payments don't (land eventually cash flows)
- **Government payments impact rents**
- **Income tax and capital gains tax rates matter**
- **There could be non-ag rents**
  - e.g., leasing your land to hunters, mineral rights, wind
- **There could be a non-ag land value growth**
  - e.g., expectations of future development

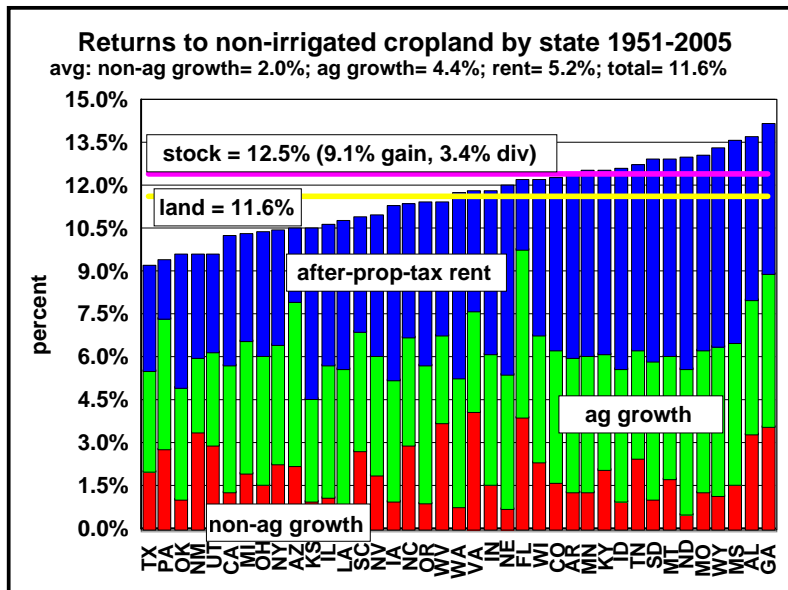


37



Is a land value correction in order?





44

## 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
- Kansas ag cap rate = 6.64%
- Missouri ag cap rate = 7.20%
- Alabama ag cap rate = 8.03%
- 39-state average cap rate = 6.57%

45

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

- Jan. 1, 2006 land value = \$890 /acre
- Cash rent for 2006 = \$39.00 /acre
- 2006 property tax = \$3.11 /acre
- 2006 after-property-tax rent = \$35.89 /acre
- $\$35.89 / 0.0664 = \$540.51 /acre$
  
- $AMVP = \$540.51 / \$890 = 0.607 = 60.7\%$   
(non-irrigated)

46

### **Agricultural Market Value of Agricultural Land using Alabama as an example**

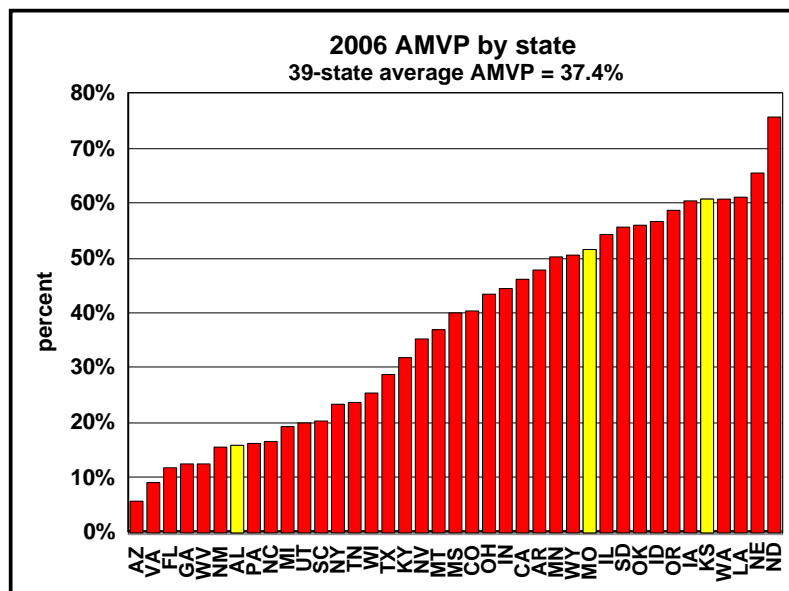
- Jan. 1, 2006 crop land value = \$2950 /acre
- Cash rent for 2006 = \$39.00 /acre
- 2006 property tax = \$1.31 /acre
- 2006 after-property-tax rent = \$37.69 /acre
- $\$37.69 / 0.0803 = \$469.36 /acre$
  
- $AMVP = \$469.36 / \$2950 = 0.159 = 15.9\%$

47

## Agricultural Market Value of Agricultural Land using Missouri as an example

- Jan. 1, 2006 crop land value = \$2100 /acre
- Cash rent for 2006 = \$79.00 /acre
- 2006 property tax = \$1.29 /acre
- 2006 after-property-tax rent = \$77.71 /acre
- $\$77.71 / 0.0720 = \$1080/\text{acre}$
  
- $\text{AMVP} = \$1080 / \$2100 = 0.159 = 15.9\%$

48

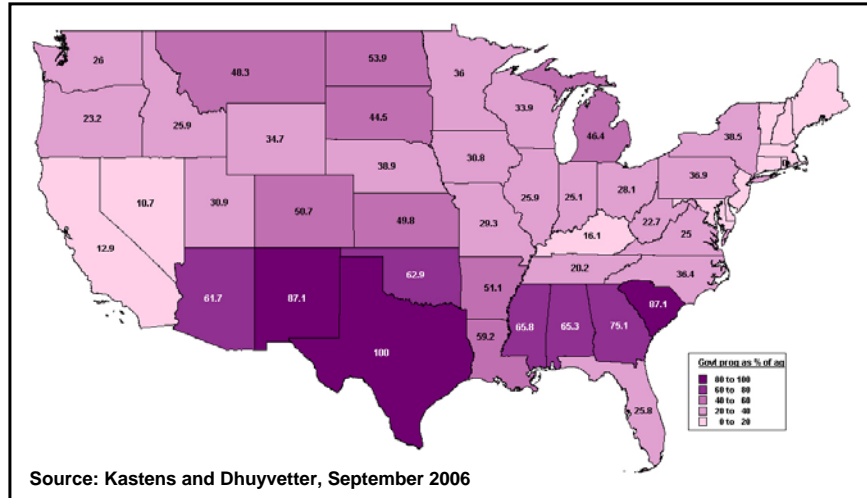


percent of land value that is due to agriculture

49



## Percentage of Agricultural Value (rent) Attributed to Government Program Payments



government payments as a percent of agricultural rent

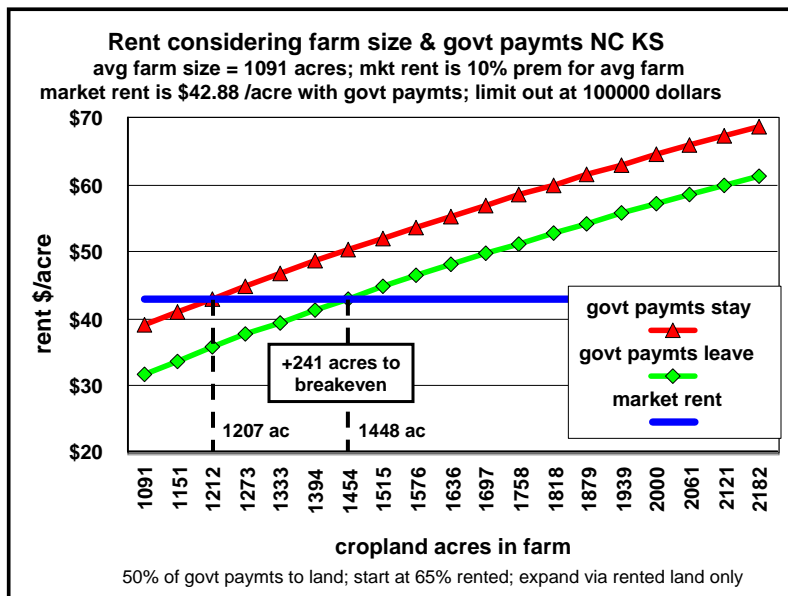
53

## 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

54



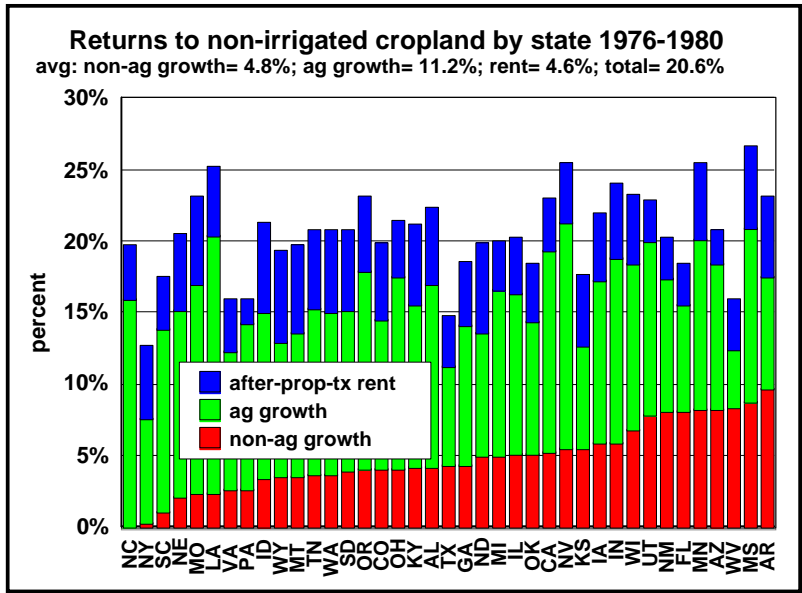


With a 100% of govt paymts to land, farm size needs to increase 510 acres to breakeven.

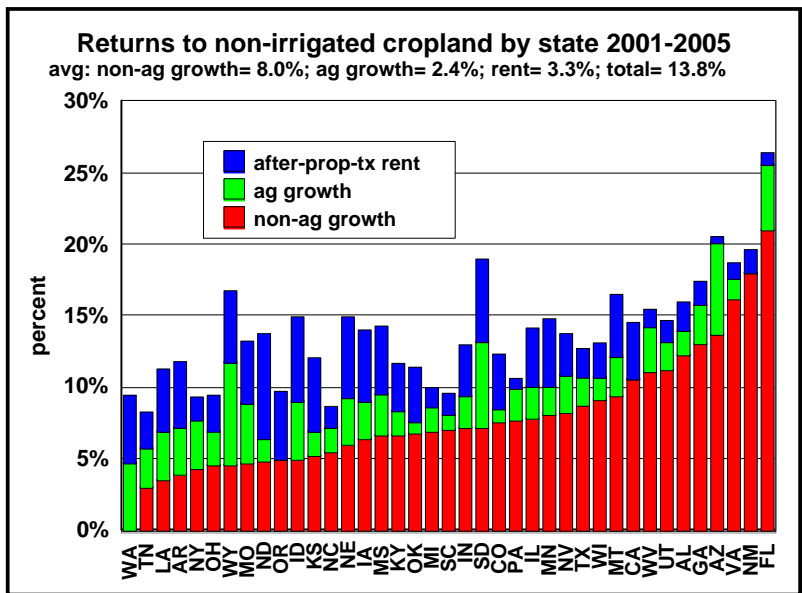
## Factors impacting agricultural land values...

- **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?
 

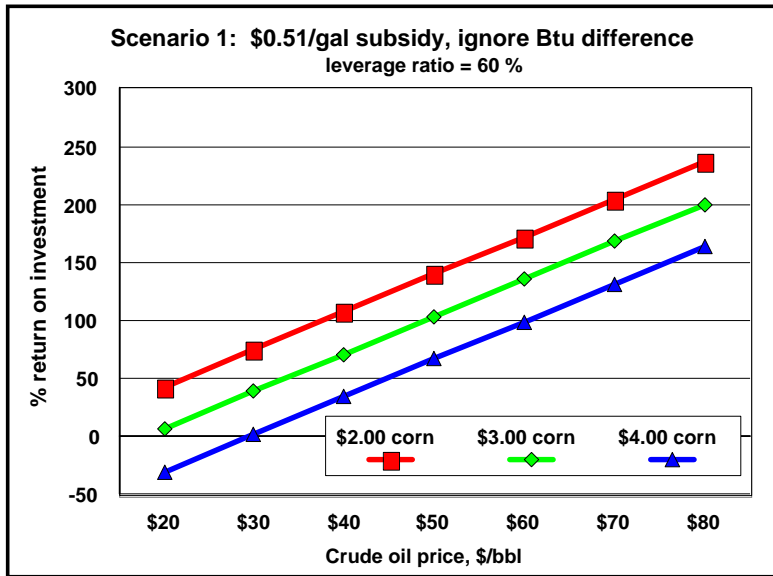
“2007 biofuel revolution will push farmland prices up 30-70% over the next two to four years and farm income up 20-60% as prices advance” (Dan Basse, president of AgResource Co, Feedstuffs, Nov 20, 2006).
- **Non-ag factors**
  - Urbanization, recreational use of land, etc.
- While agricultural land 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



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

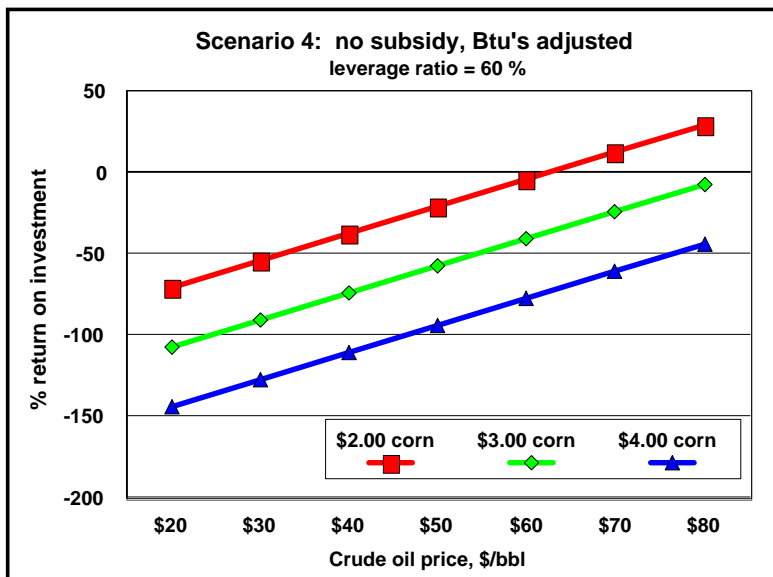


Non-ag growth much more important lately; total returns not especially high



More or less today, ethanol premium due to mandates + subsidy

65

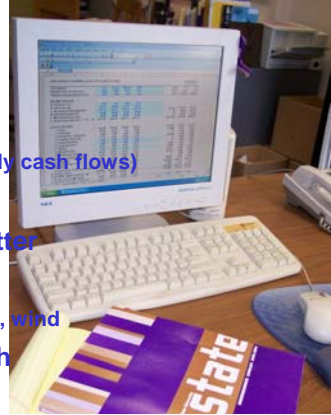


No subsidy, no premiums (ethanol truly a gasoline substitute)

68

## Buying and owning land – considerations

- Total return = rent + capital gain
- Land doesn't cash flow when purchased
  - i.e, rents don't cover a 100% loan
  - Cash flow is not the same as profitability
  - Rents grow, loan payments don't (land eventually cash flows)
- Government payments impact rents
- Income tax and capital gains tax rates matter
- There could be non-ag rents
  - e.g., leasing your land to hunters, mineral rights, wind
- There could be a non-ag land value growth
  - e.g., expectations of future development
- **KSU-Landbuy.xls** allows for these various considerations (available at [www.agmanager.info](http://www.agmanager.info))



69

AgManager: Crops, Livestock, Marketing and Outlook, Tax Law, Human Resources, and Agricultural - Microsoft Internet Explorer

Address: <http://www.agmanager.info/>

AG MANAGER INFO  
A Website Providing Information and Tools For The Competitive Business

Navigation: [about](#) [contributors](#) [useful links](#) [site map](#) [feedback](#)

Left Menu:
 

- Agribusiness
- Crops
- Energy Prices
- Farm Management
- Human Resources
- Income Tax & Law
- Livestock & Meat
- Policy
- Ag Econ News
- Contributors
- Programs
- Sponsors
- Upcoming Events

Central Content:
 

- www.agmanager.info
- 2006 Insurance Workshop (New Tools For Your Group Insurance Toolkit)
- 2006 Kansas Tax Institutes (Coming soon to a location near you)
- 2006-2007 Ag Profitability Conferences (Across the state of Kansas)

Right Content: Site Updates
 

- Livestock and Hay Charts (November 2, 2006 by Jim Minner)
- Monthly NH3 and Diesel Price Forecasts (November 2, 2006 by Kevin Dreyer)
- Livestock Outlook Radio Program (October 30, 2006 by Jim Minner, MC/Curt)
- Current Grain Outlook (October 30, 2006 by Mike Wood-vert)
- In The Cattle Markets (October 23, 2006 by Jim Minner, MC)
- 2007 Farm Cost Drivers and Implications for Producers (October 16, 2006 by Tom Farn and Troy Clum)
- Machinery Decision Tools - Excel spreadsheets to evaluate costs of owning and operating balers, combines, tractors and sprayers. (October 12, 2006 by Terry Kuesters and Kevin Dreyer)
- Seasonal Prices - Crops and Cattle (Excel spreadsheets) (October 9, 2006 by Kevin Dreyer)
- Factors Impacting Dairy Profitability in 2007 (October 3, 2006 by Kevin Dreyer and Terry Kuesters)
- Forces Shaping Change in the U.S. Beef Sector (October 2, 2006 by Jim Minner)
- Ethics of Renting Agricultural Land (September 14, 2006 by Terry Kuesters and Kevin Dreyer)
- Valuing and Buying Farmland (September 7, 2006 by Terry Kuesters and Kevin Dreyer)
- Govt Payments and Non-Ag Returns Impact on Land Values (September 7, 2006 by Terry Kuesters and Kevin Dreyer)
- CRP Decision Tool: Excel spreadsheet to evaluate expiring CRP contracts (September 6, 2006 by Rodney Jones and Kevin Herber)

Footer:
 

- Department of Agricultural Economics | State Research & Extension | College of Agriculture | Kansas State University

Overlaid Text: **Questions?**