

# Which way land prices?

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## Factors/issues impacting land values

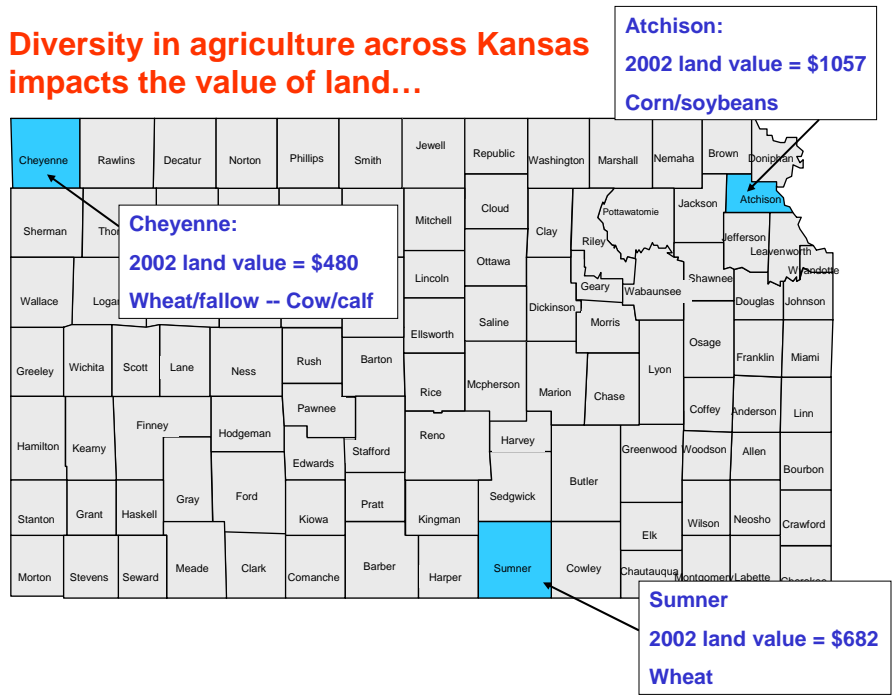
(alphabetical order)

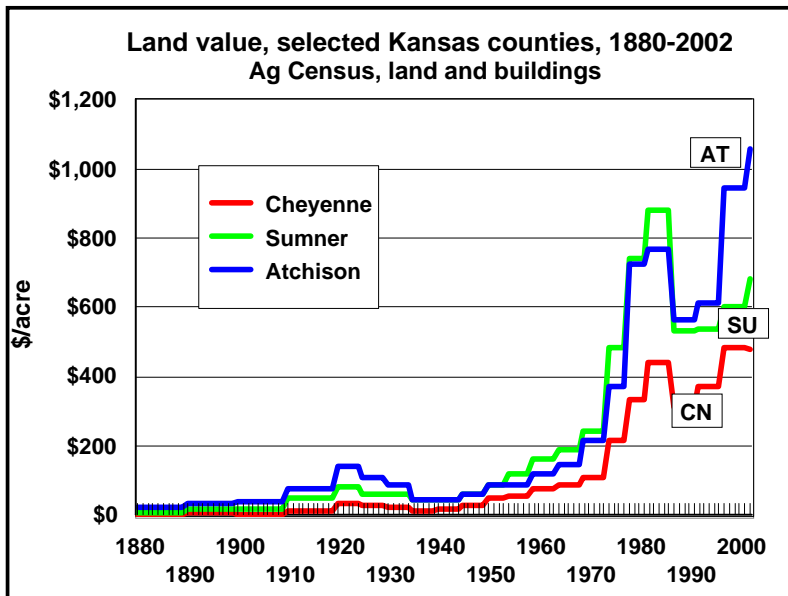
- Farm profitability
- Farm size
- Government programs
- Input costs (e.g., fuel and fertilizer)
- Interest rates
- Outside investors (i.e., stock market money)
- Recreation uses (e.g., hunting)
- Renewable fuels (ethanol and bio-diesel)
- Section 1031 tax exchanges
- Technology (e.g., no-till, precision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

## Land is Unique

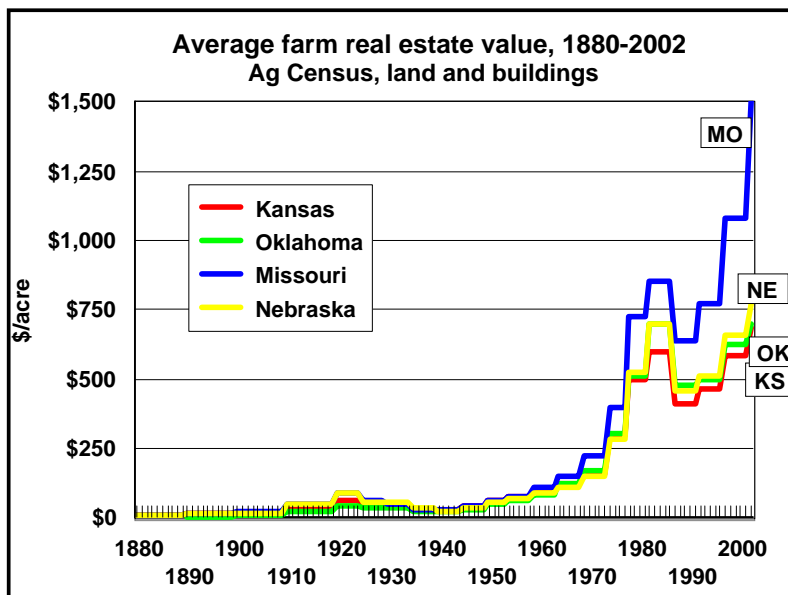
- **Most fixed of farming assets**
  - Residual claimant
  - Capitalizes government subsidies
  
- **Often is taxed**
  - Favorably or unfavorably
  
- **Has non-ag benefits that may be pecuniary**
- **Has non-pecuniary benefits**
- **A long term investment involving long term expectations – history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

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





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

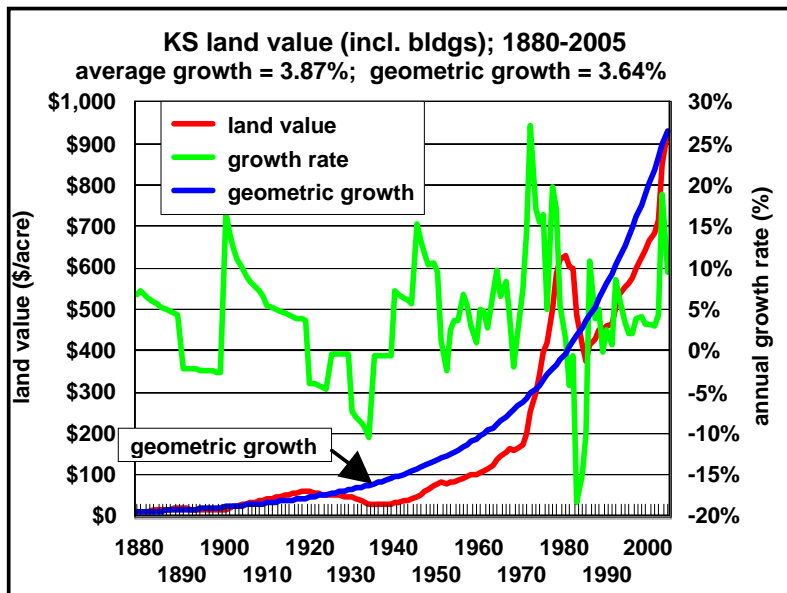


Land is a regional/national market ...

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

11

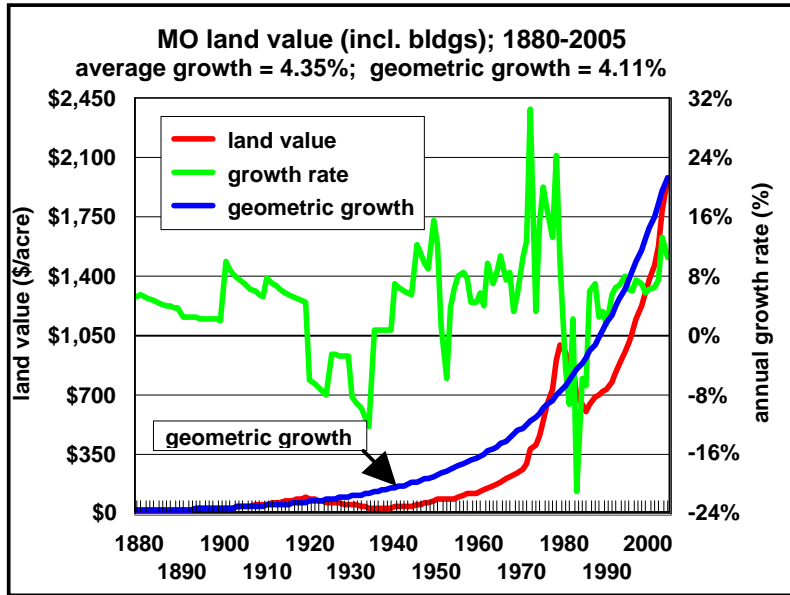
### Long-term growth rates in Kansas



1879 starting land value for Kansas was \$10.30

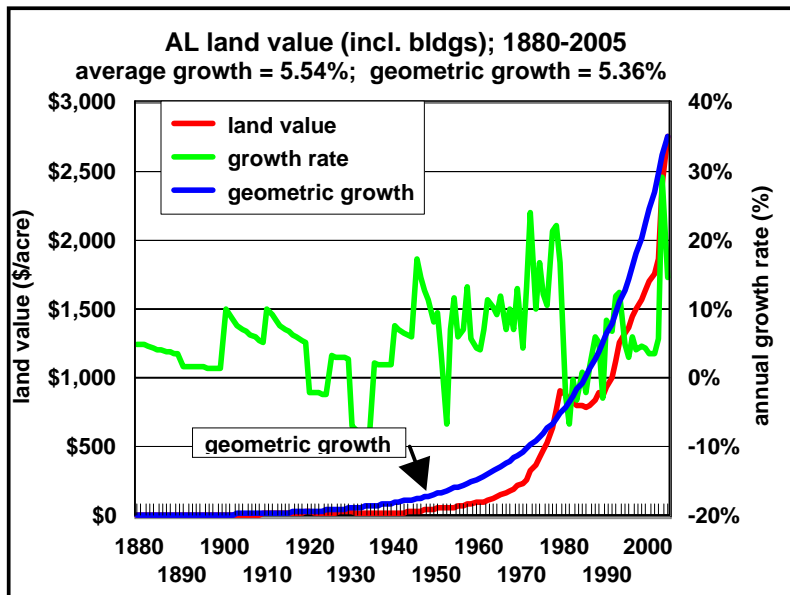
13

Long-term growth rates in Missouri



1879 starting land value for Missouri was \$13.10

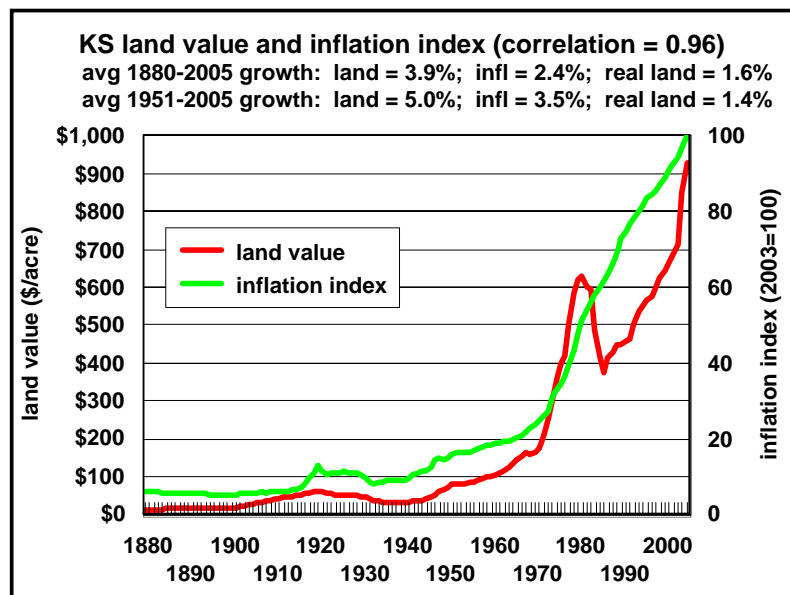
Long-term growth rates in Alabama



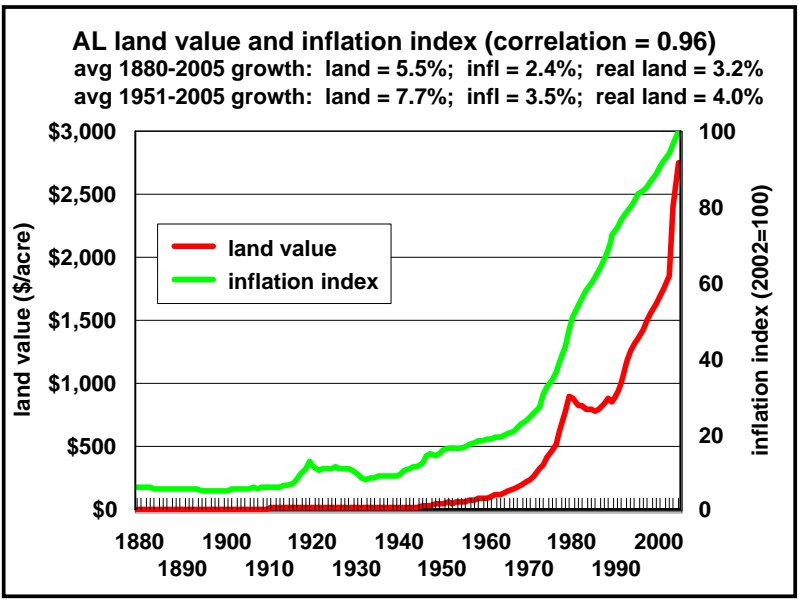
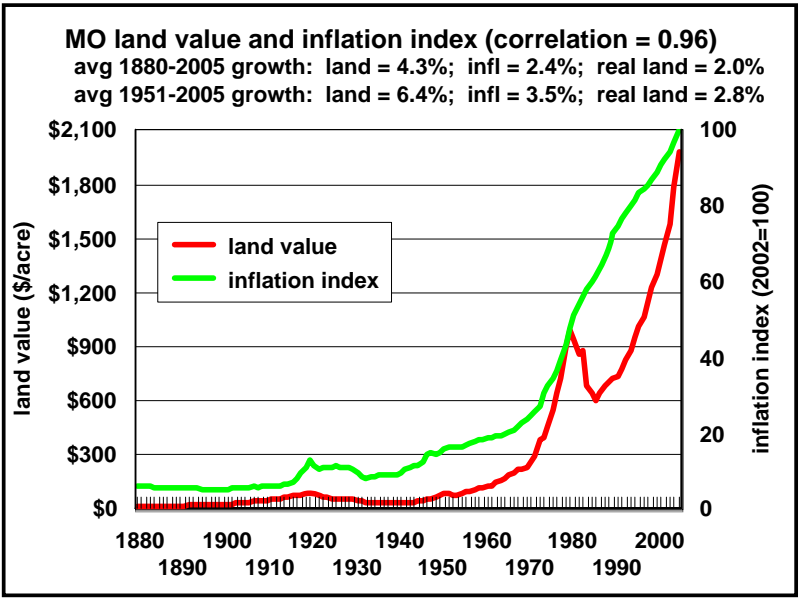
1879 starting land value for Alabama was \$3.82

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

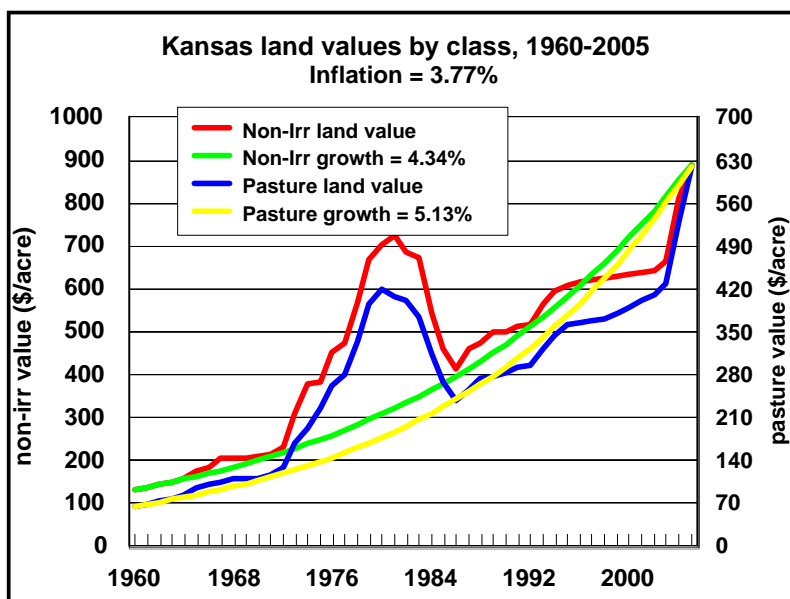
16



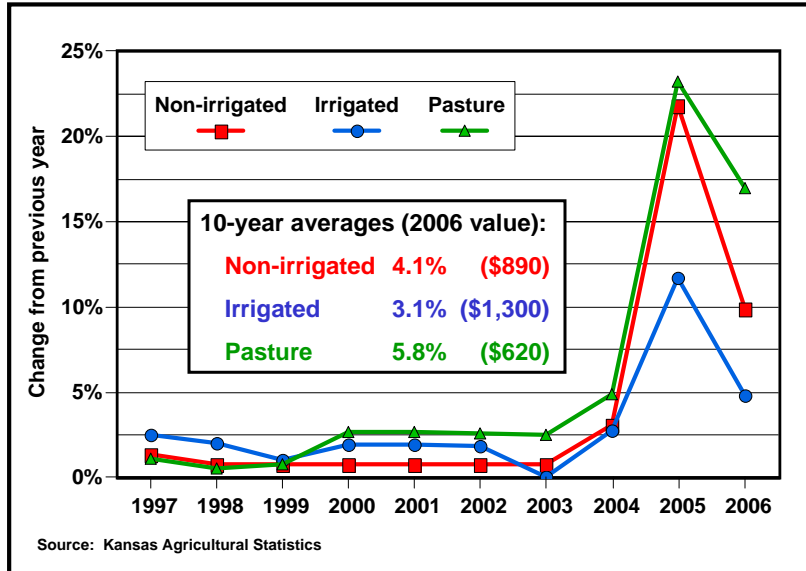
17



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

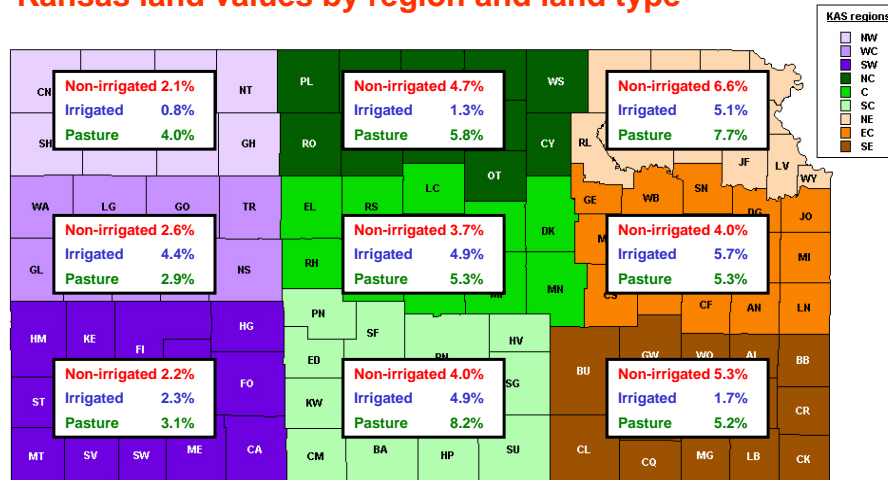


## Kansas year-to-year land value changes ... (i.e., annual growth rates)



22

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



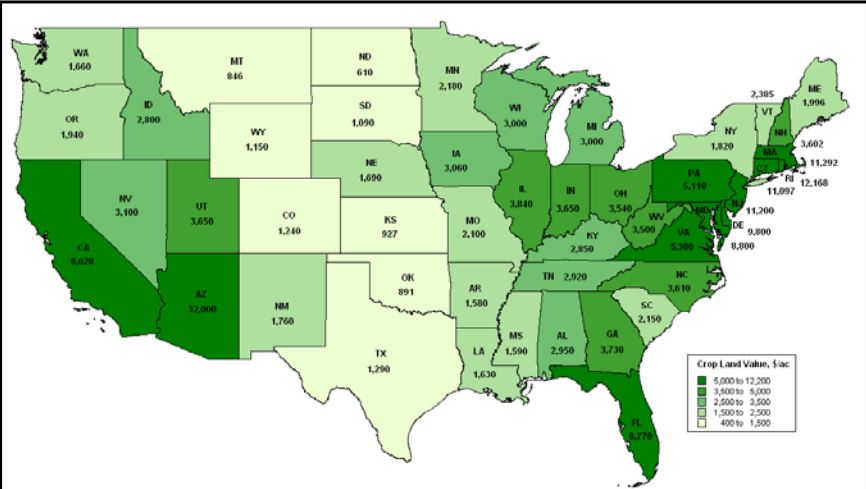
Both a regional and land type effect on growth rates over the last ten years.

What's driving these differences?

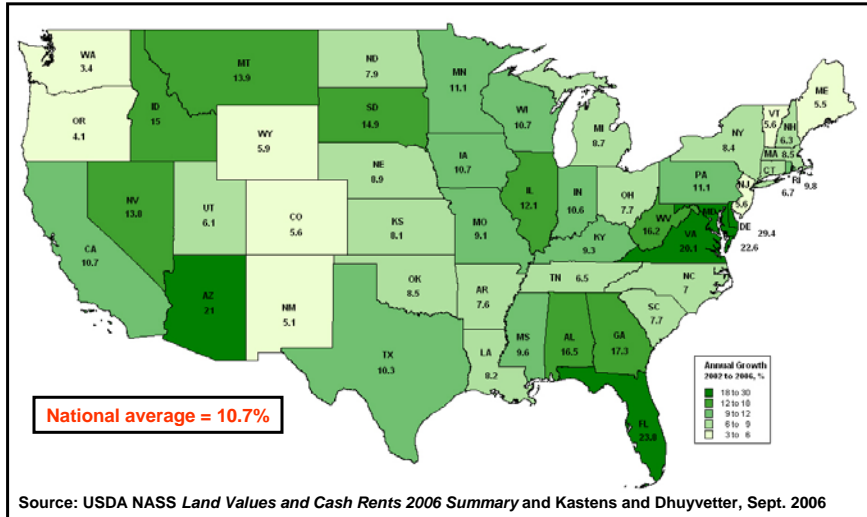
23

**How do trends in Kansas and Missouri land values compare with the rest of the country?**

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

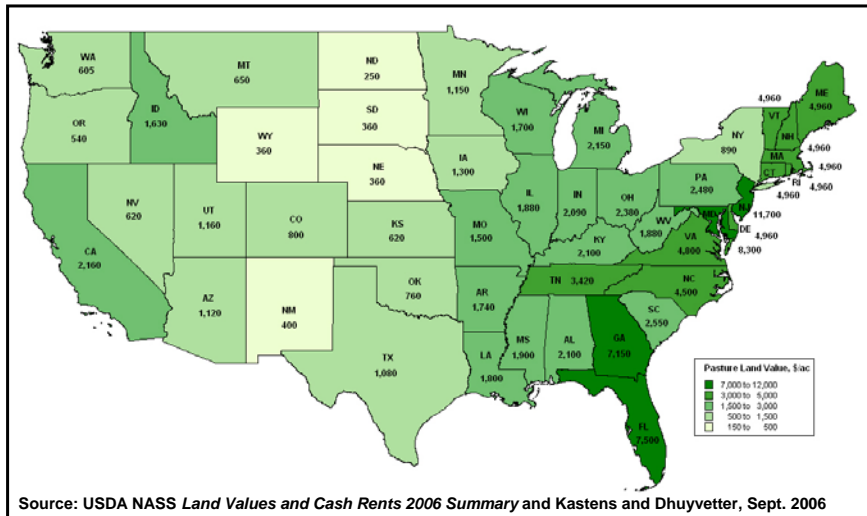


## Crop Land Average Annual Growth Rate by State 2002 to 2006, percent



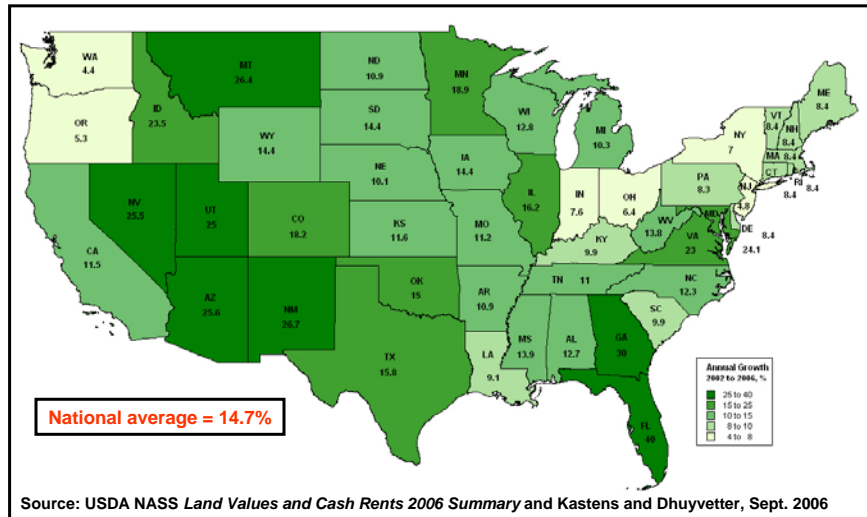
26

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



27

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

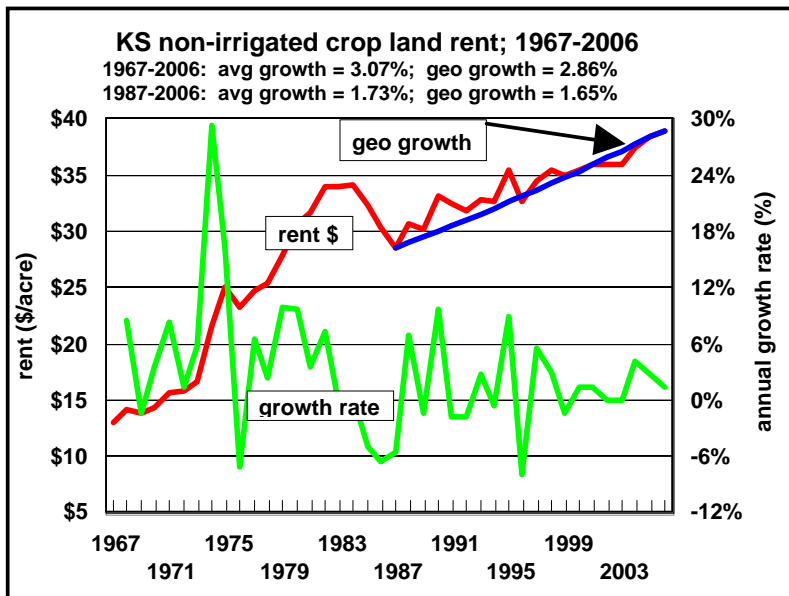


28

## Returns to land

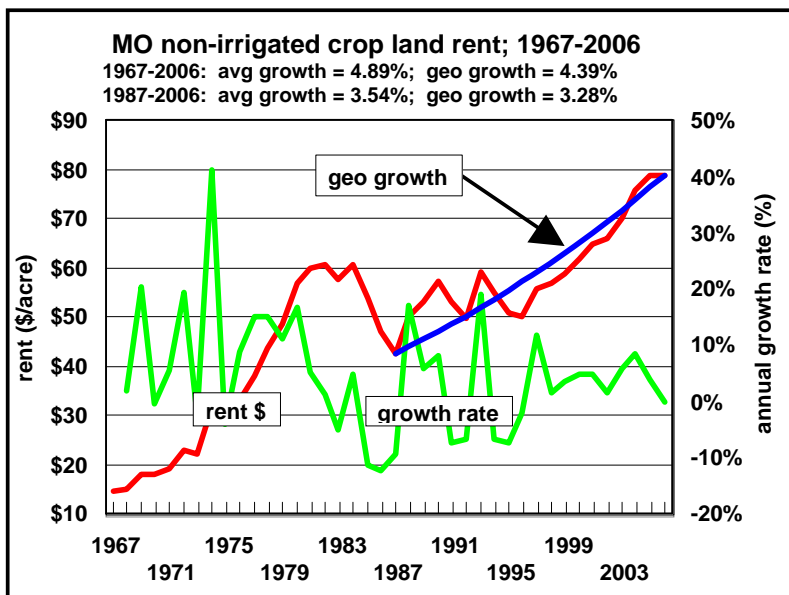
- Capital gains (growth)
- Cash returns (rent)
- The two returns to land are similar to other investments such as the stock market (capital gains and dividends)

29



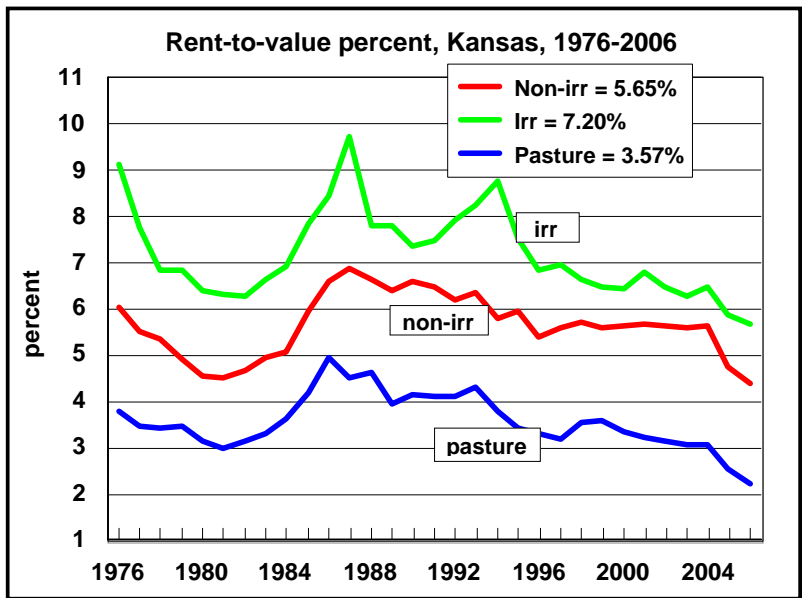
Suggested expected ag growth rate = 2.40%

30

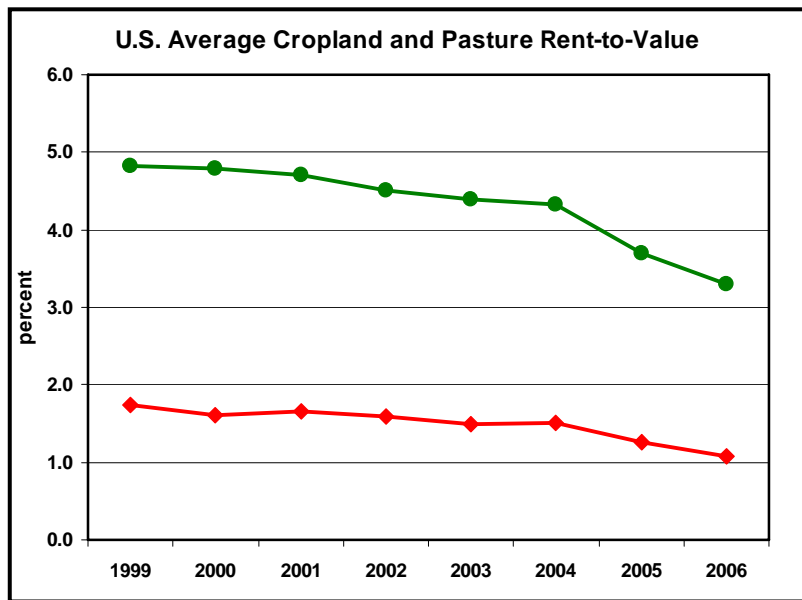


Suggested expected ag growth rate = 4.22%

32



34



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

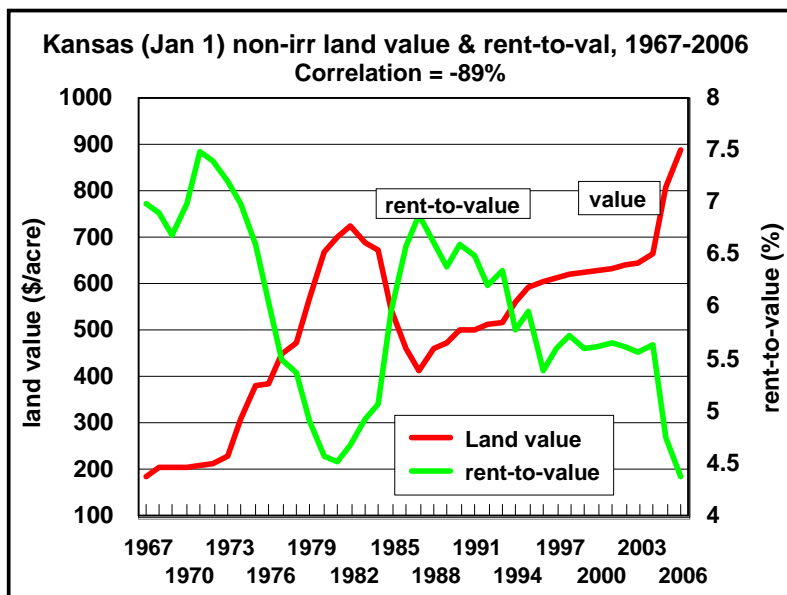
35

## Buying and owning land – considerations

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

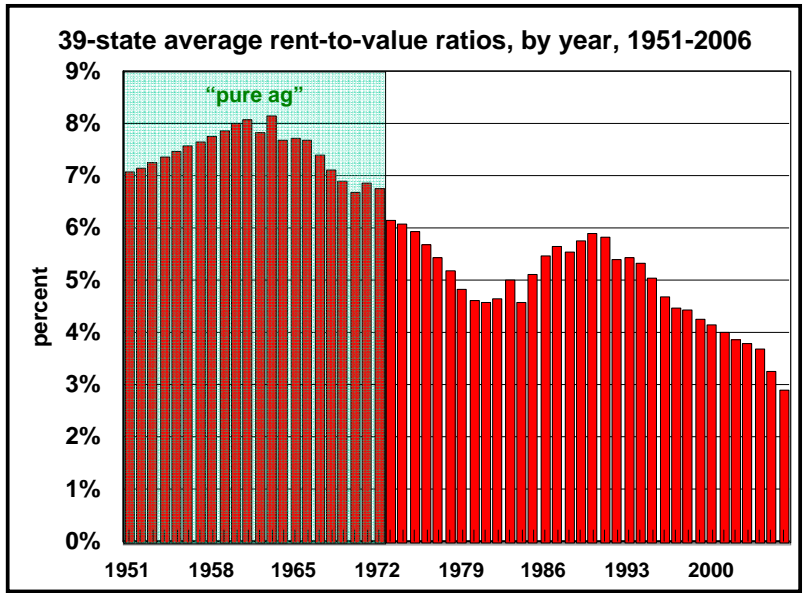
- Total return = rent + capital gain
- Land doesn't cash flow when purchased
  - i.e., rents don't cover a 100% loan
  - cash flow is not the same as profitability
  - rents grow, loan payments don't (land eventually cash flows)
- Government payments impact rents
- Income tax and capital gains tax rates 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

36

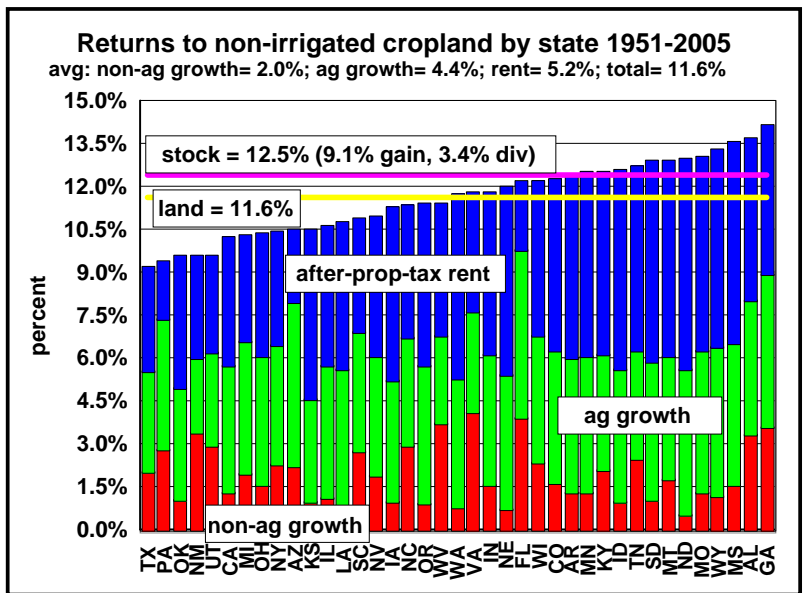


Is a land value correction in order?

37



38



39 states ranked by total returns to land

43

## 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%

44

## 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)

45

### **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
- $\$37.69 / 0.0803 = \$469.36 /acre$
  
- $AMVP = \$469.36 / \$2950 = 0.159 = 15.9\%$

46

### **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
- $\$77.71 / 0.0720 = \$1080/acre$
  
- $AMVP = \$1080 / \$2100 = 0.514 = 51.4\%$

47

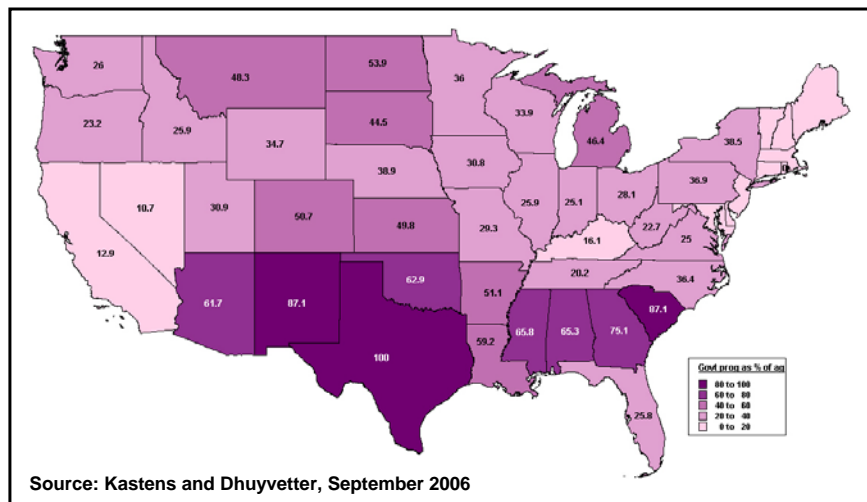


## Government Program Payments

- 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

50

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



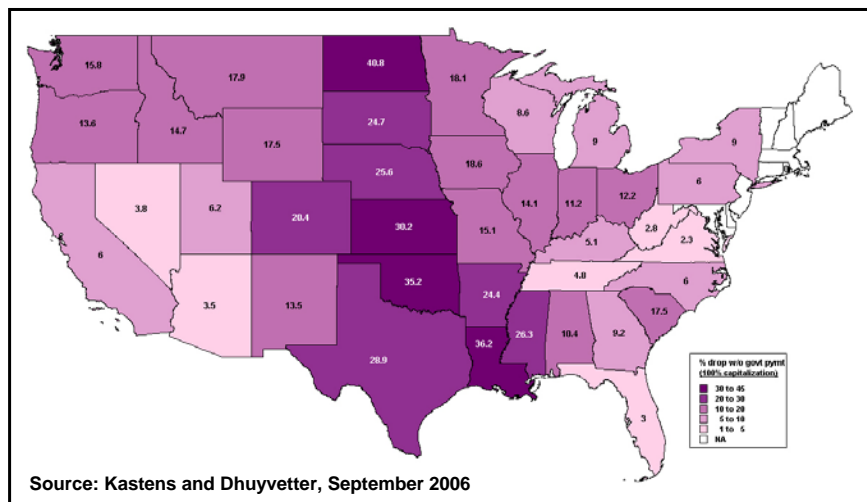
government payments as a percent of agricultural rent

52

## 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)

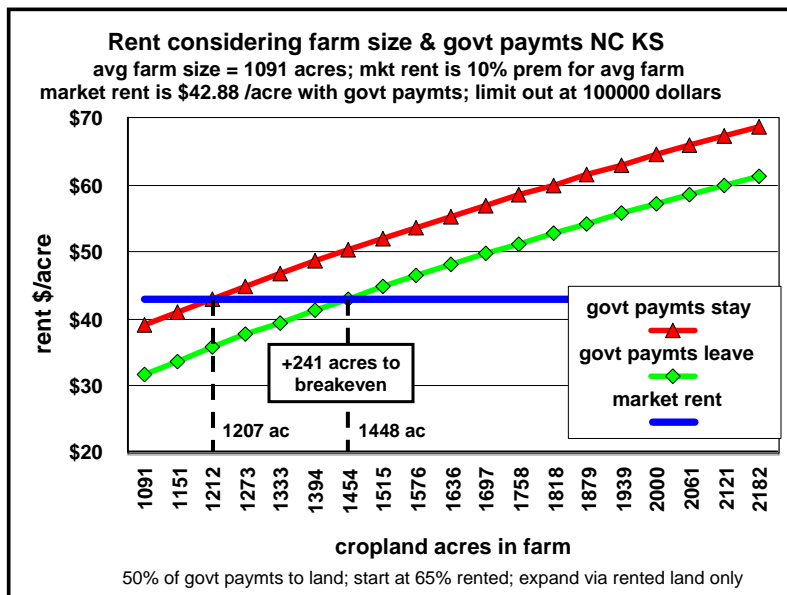


reduction is proportional to capitalization rate (e.g., KS=15.1% with 50% cap)

## 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 gov't payments
  - Increased competition would bolster rents

56



With a 100% of gov't paymts to land, farm size needs to increase 510 acres to breakeven.

60

## 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).

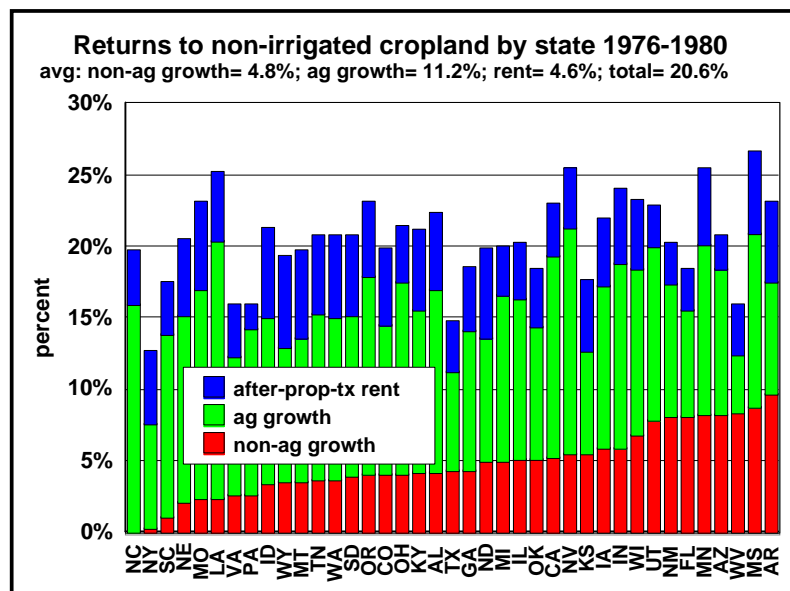
- **Non-ag factors**

- 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**

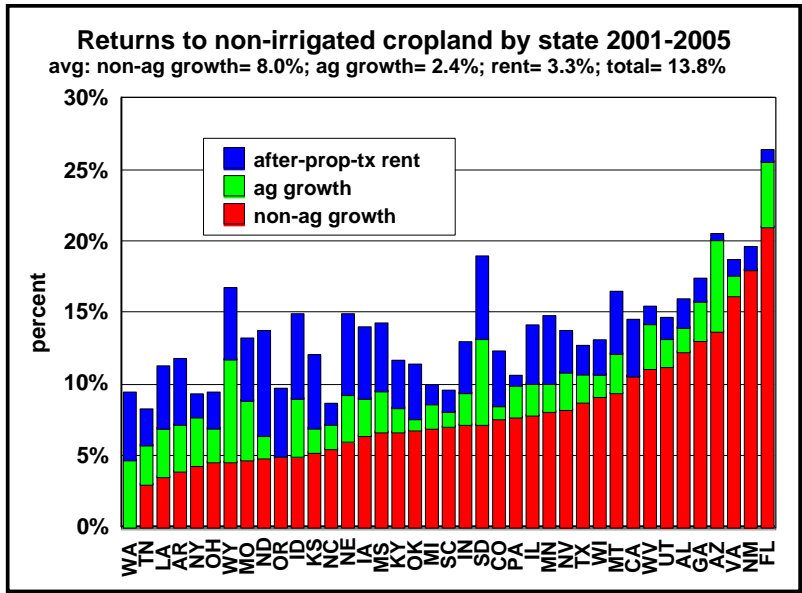
- **Increasingly difficult to analyze/evaluate land purchases/prices**

61

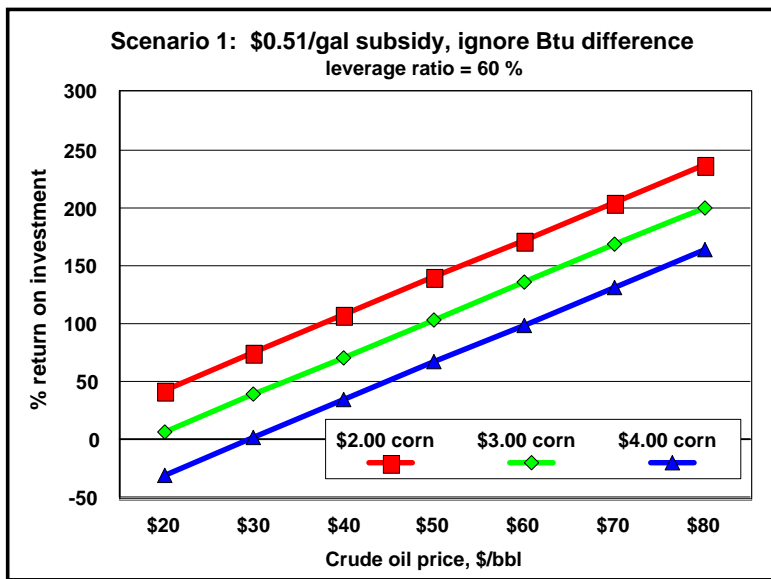


Dominated by growth in ag rents (inflation); total returns very high

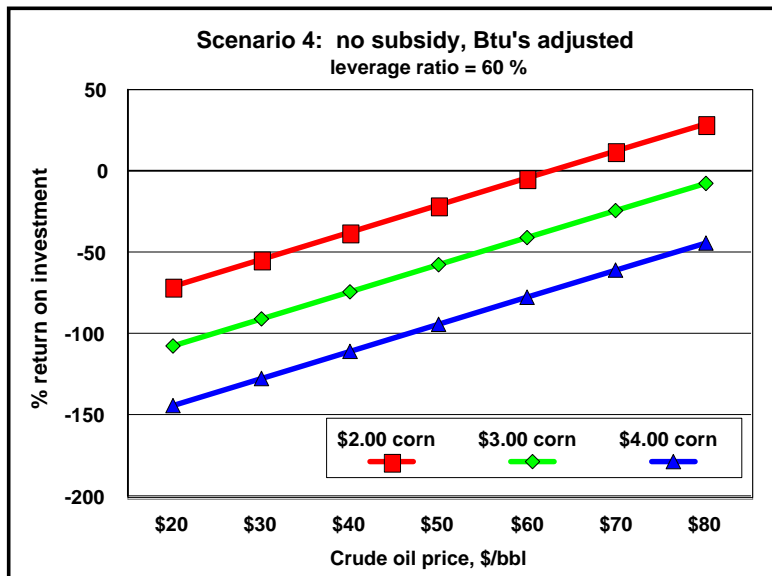
62



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



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

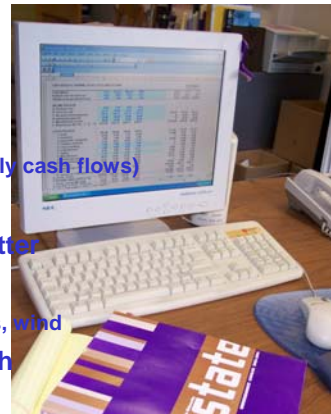


No subsidy, no premiums (ethanol truly a gasoline substitute)

67

## Buying and owning land – considerations

- Total return = rent + capital gain
- Land doesn't cash flow when purchased
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  - 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))

68

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

http://www.agmanager.info/

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