Future of Agriculture
Economies of Size and Trends in Agriculture

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Presented at a producers meeting of The Citizens State Bank
Hesston, KS, February 22, 2007

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MAST

MAST (Management, Analysis, and Strategic Thinking)

- Two days on campus in November
- 37+ hours of video viewing
- Chat rooms and message board
- Two days on campus in March
- Can enroll for 4 hours of college credit
  - Undergraduate or graduate credit
  - Most do not

MAST Modules

- Land
- Machinery
- Financial analysis
- Labor
- Tax management and policy
- Risk management
- Marketing
- Analytical tools

Not a "futurism" discussion . . .

- Futurism
  - About cool things way in the future
  - Fun to talk about
  - Daydreaming, the mind wanders and wonders
  - Can hear about it and forget it
- Nearby future
  - Our lifetimes (and what happens at our death)
  - Often painful realities upon us
  - May have to make decisions today
  - Probably won't go away
  - Consider that which is statistically probable
  - That which is driven by economic forces

What motivates farmers?

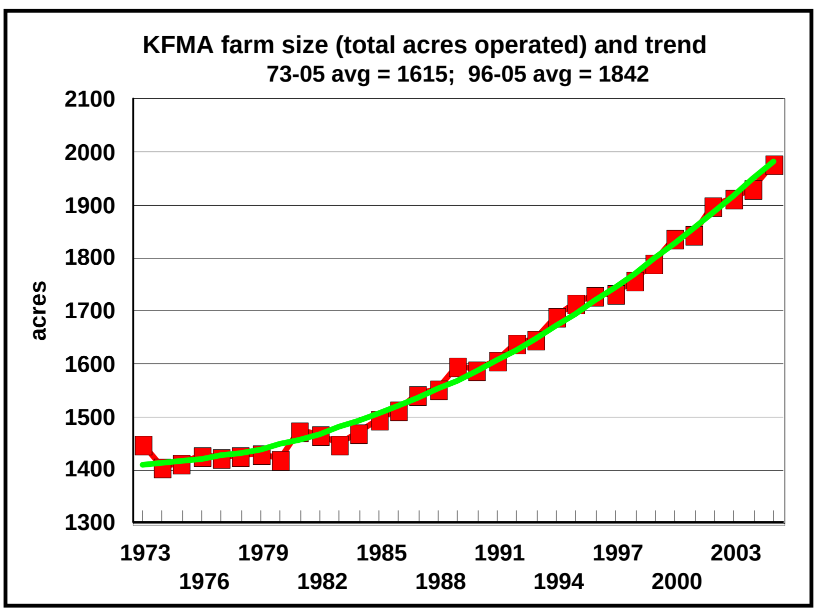
- Farming: profit or lifestyle?
- About what will make *some* farms profitable in the future
  - The ones that will be around in commercial ag
- One part of a bigger picture
  - What to do with wealth
  - What to do with human capital (personal skills)

Economies of size: the driving force

- Per-unit costs fall as a firm gets bigger
  - Essentially about spreading fixed costs
  - May mean higher prices instead

Is EOS for real?

- Is there a benefit to targeting growth and size?
- Or, is growth an accident of good management (plowing profits back into the farm or business)?
  - Walmart: size, or a good retailing idea??
  - Why don't we observe numerous small packing plants?
  - Why don't we observe many small farms with a common investor?



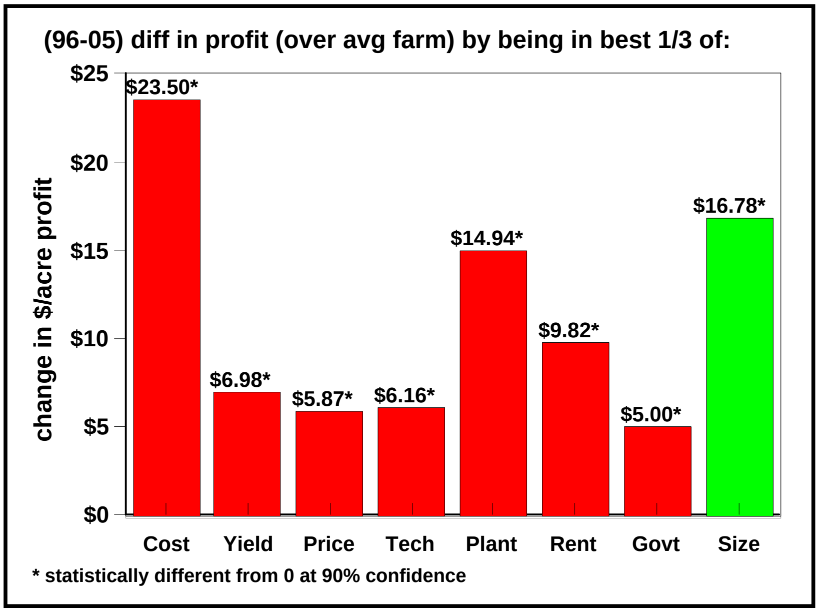
Farm size has been increasing at an increasing rate

Is EOS for real?

- EOS doesn't mean you have to be big to be low cost
  - Many small farms have low costs
  - But, it's harder to be low cost if you are small
    - EOS is an "on average" phenomenon
- Little evidence of big, high cost, farms
  - They've gone broke

Is EOS for real?

- Hard to distinguish effect of good management and other factors from effect of size
- Statistical regression is one way to do it
  - After you correct or adjust for the impact of other factors, is there still a positive impact on profit associated with size?

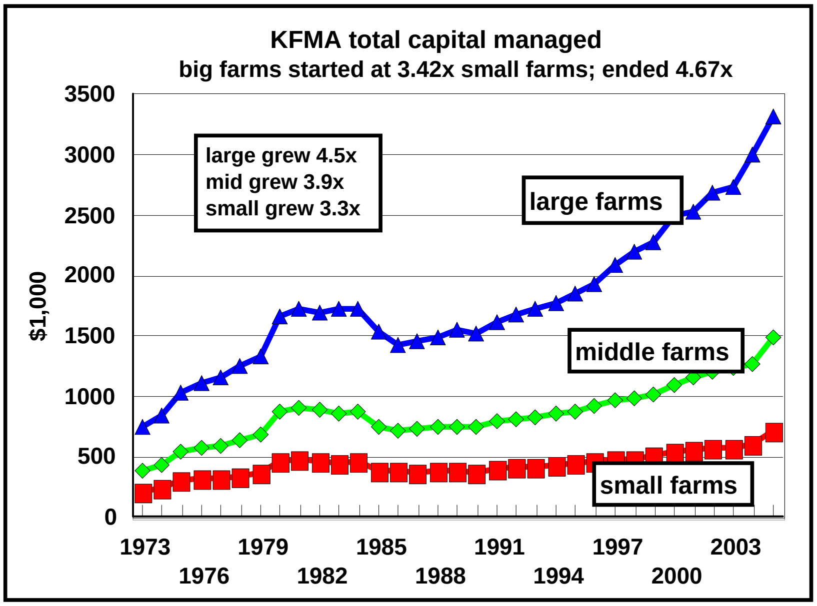


A size effect remains – evidence that EOS is for real

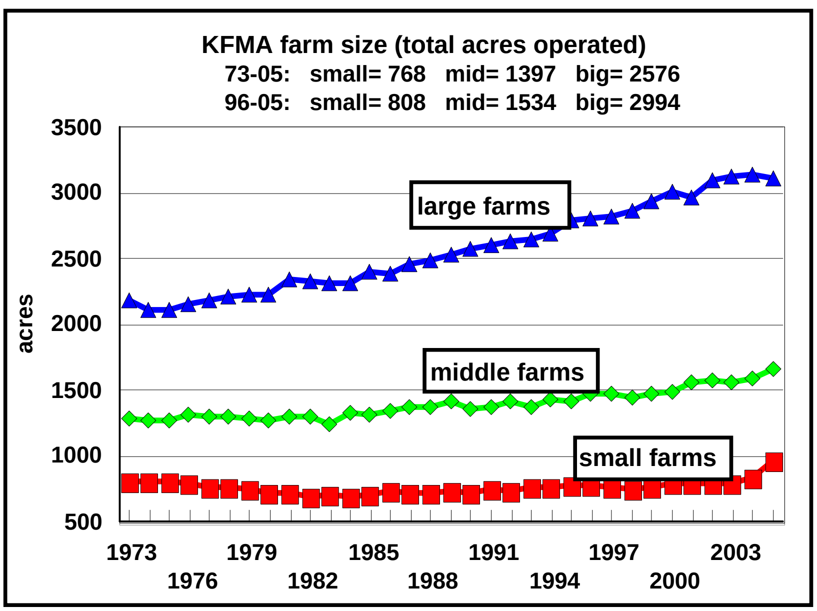
Why are large farms more profitable?

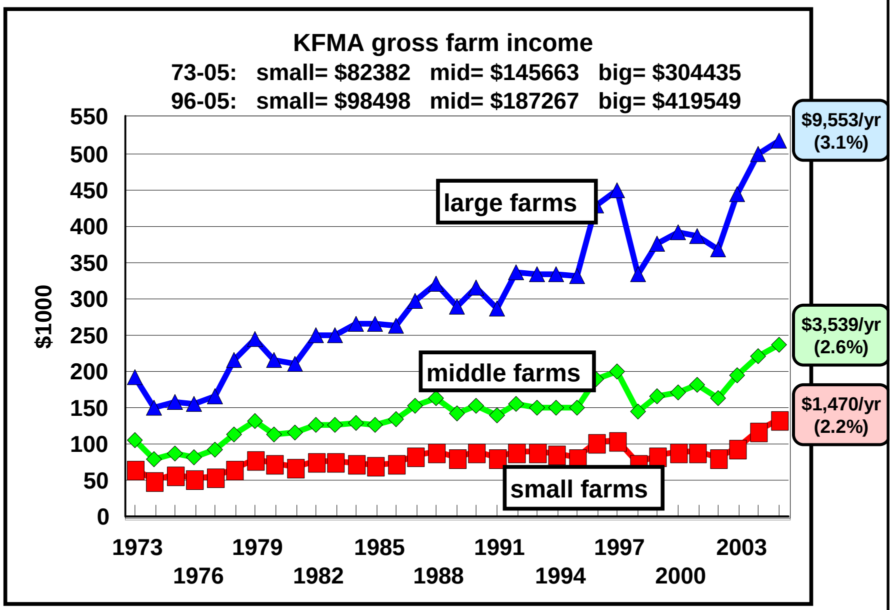
- Lower cost is the obvious benefit, but other benefits arise from the research

- Larger farms:
  - Have much lower costs
  - Get somewhat higher yields
  - Get slightly higher prices
  - Farm more intensively
  - Are much faster adopters of technology, for example, less-tillage

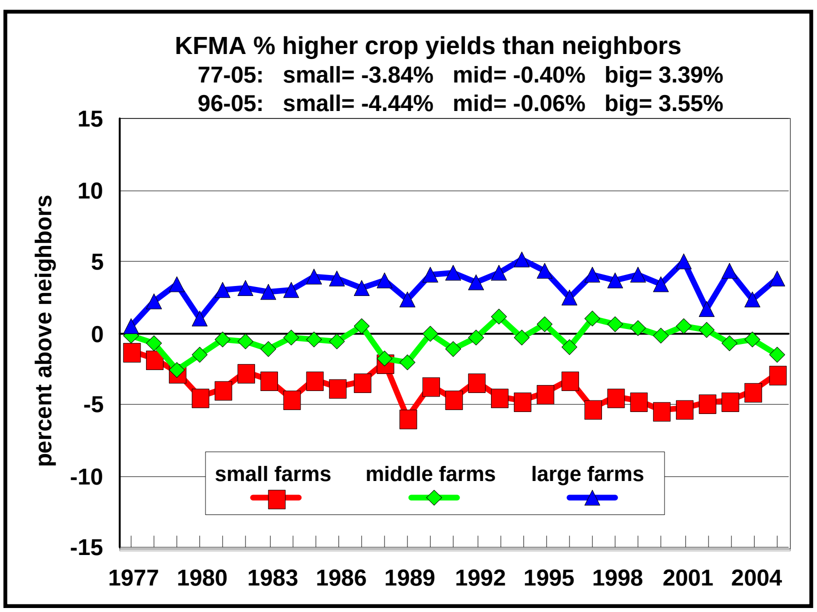


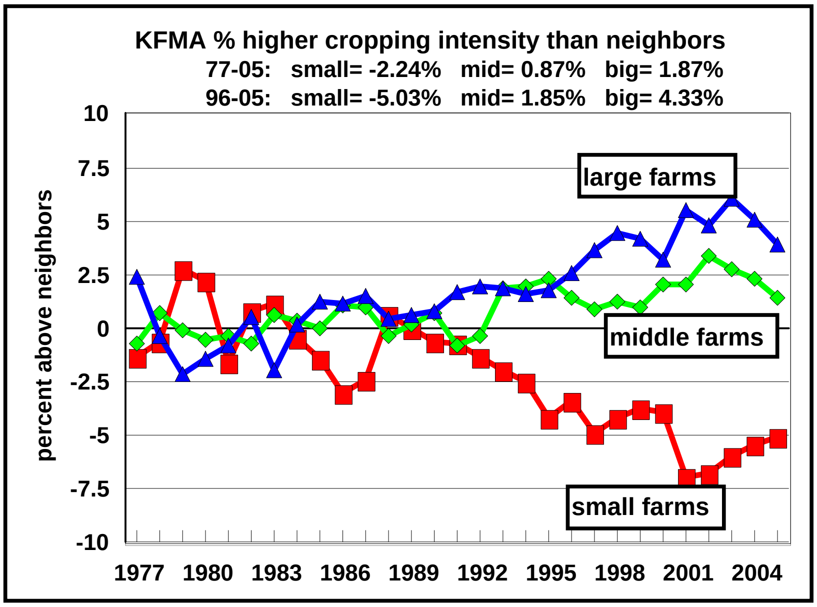
A portion of growth in $ values is inflation



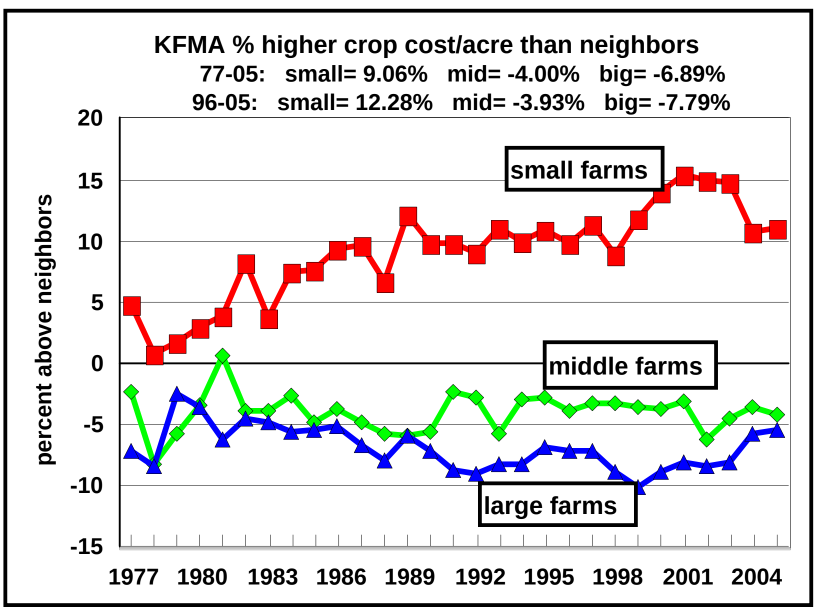


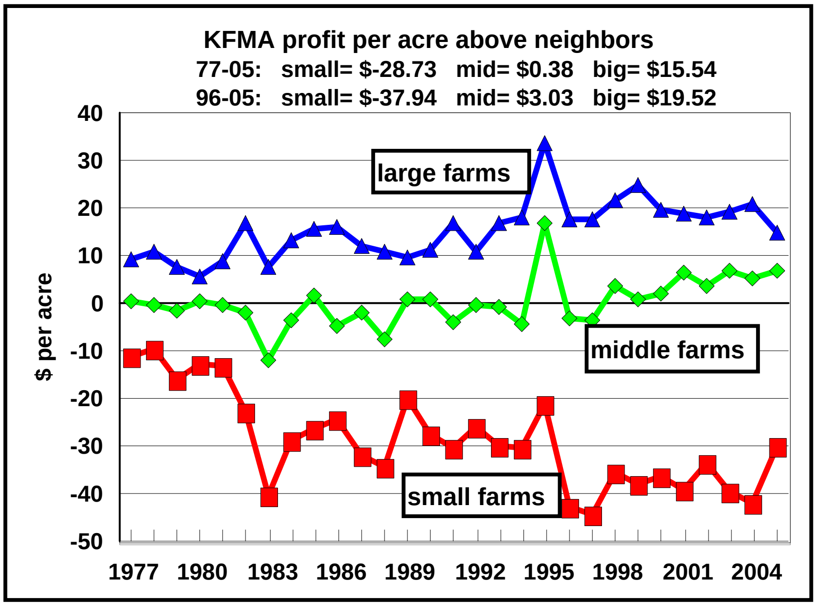
Even the "big" farms aren't all that big!





Big and small really departing from each other in last 15 years



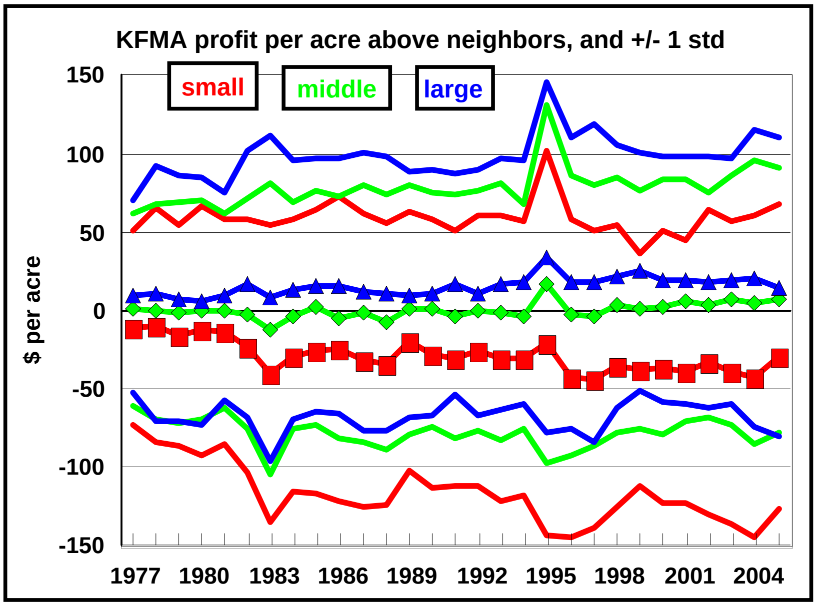


The characteristic differences across farm sizes result in profit differences

Large farms are not only more profitable

- The disparity between large and smaller farms has been growing over time.
- Will the traditional one-family family farm soon be a thing of the past?
  - The family farm will go on but it will be an extended family

More important to be good than to be big …

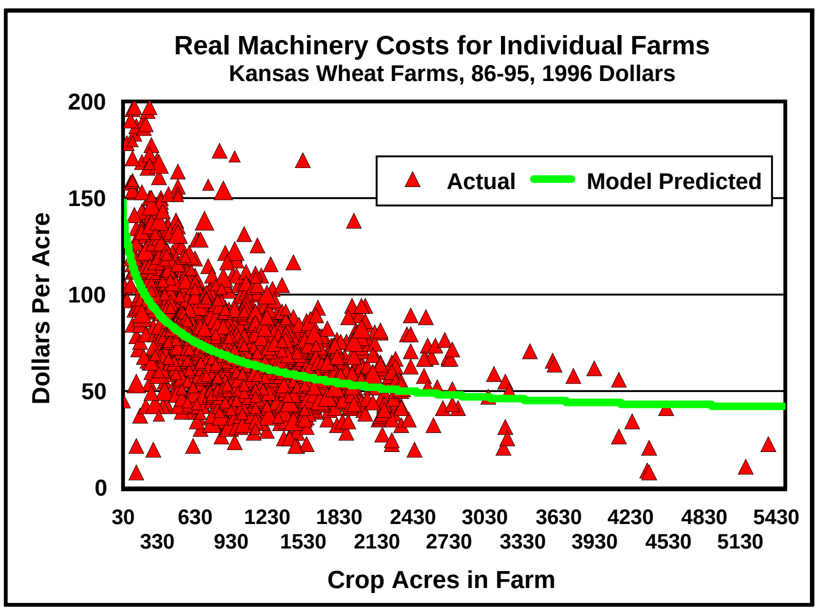


… so don't use inadequate size as an excuse to be unprofitable

No right to profit from size

- Being large does not ensure profitability
  - Inherited, but poorly managed (inattentive to size and growth issues), farms are an example. Though it might take years, such farms eventually disappear.
- A poor-managing heir would be better off:
  - Investing his/her wealth elsewhere
  - Renting the land portion to a good manager

Do EOS turn to diseconomies at sufficiently large size?



You be the judge! But where are the 10,000 acre farms and what might their machinery costs be?

Do EOS turn to diseconomies at sufficiently large size?

- Government payment limitations?
  - Business structure
  - Willingness to share ownership and management

- Large farms often are targeted for…
  - environmental concerns (EPA)
  - crop insurance audits
  - terrorism?

- Can management handle size and growth?

What about niche farming? Do we really need to get on the EOS bandwagon?

- Targeting a niche is a risky game plan

- Perceived niches not immune to EOS

  "Remember, every niche is a commodity in the making." Vincent Amanor-Boadu

- Becoming a large commercial farm also is a risky plan

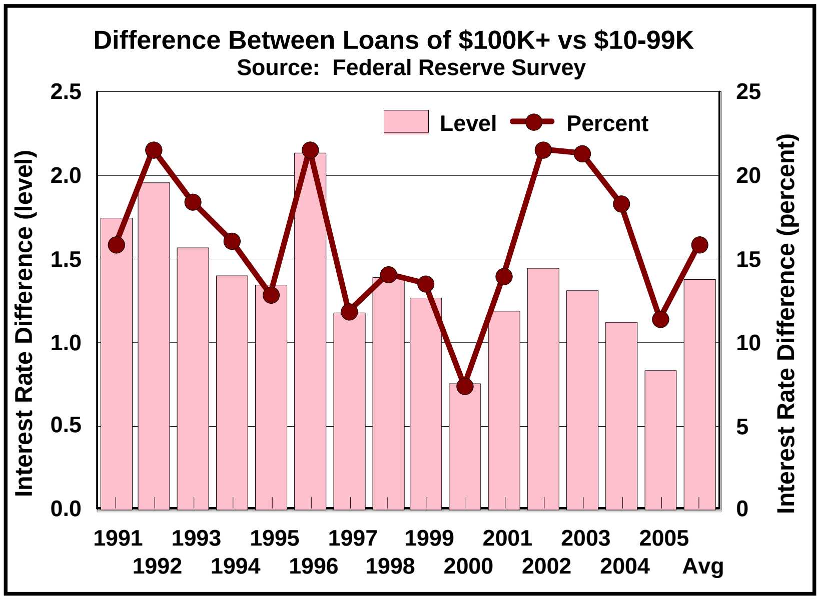
- Recognize your comparative advantage

Changing EOS features across farm size

- Labor first
  - Labor is fixed and it pays to be fully employed
- Machinery second
  - Bigger machines are less expensive per unit of capacity

Changing EOS features across farm size

- Other things third
  - Management can be spread over still more acres
    - e.g., marketing, hybrid selection, technology evaluation, assessing FSA or crop insurance opportunities
  - Quantity price discounts or premiums
    - Crop sales
    - Machinery and crop input purchases
    - Larger loans mean lower interest rates



Bigger loans have lower interest rates

Changing EOS features across farm size

- Less direct things fourth
  - Large geographical spread
    - Less yield and profit risk
    - Quicker reliable inferences from farm level data
    - More opportunities to rent additional land
  - Business image: landlords favor large farms
    - Or is it youth, longevity, profitability, technological advancement, and community viability?

EOS implications: equity

- It takes so much to get started today!
- Internal profits (reinvest profits)
- Vertical accumulation
  - Family wealth across generations
  - Diverging goals of heirs and forebears
- Horizontal accumulation
  - Family or non-family contemporaneous equity
  - Minority shareholders have poor protection
- Successful farms will overcome the equity hurdles

EOS implications: debt

- Capital is equity OR debt
- Debt often is the least-cost capital source
- If equity growth is internal:
  - Farms using debt have an advantage for EOS
- Recommendations to “pay down debt” are a vestige of traditional life-cycle thinking
- Successful farms will consider
  - Divorcing the business from the individual
  - Targeting a debt-to-assets ratio rather than a debt level (think of agri-businesses)

EOS implications: labor

- Technologies have been labor reducing
  - Farms have not acquired human resource skills
  - Farms prefer labor saving technologies
    - No-till grows because it saves labor
  - But, labor EOS play out
- Recent technologies are not labor-saving
  - Precision ag
    - Guidance/assisted steering is labor saving
    - Intensive input management is not labor saving
      - … but is, at some scale, following large fixed cost investment
- Successful farms will
  - Think of labor as an investment in human capital
  - Value employee skills besides management

EOS implications: labor

- Successful farms will be innovative
  - A farming heir wants to hold onto the family farm
  - A growing farm needs good employees
  - Rent the farm and hire the farmer
    - The exiting farmer
      - saves face as a landlord
      - preserves the family farm
      - retains much of what he/she enjoys about farming
      - retains the place of residence
      - makes a smooth career transition
    - The growing farm
      - acquires an excellent employee with little training
      - grows the farm to capture EOS
  - Think about painless transitions

Capturing EOS without growth

- Formal and informal business arrangements to capture EOS
  - Machinery partnerships among farms
  - MachineryLink and other rental services
  - Custom farming services
  - Input buying groups
- Here to stay….?
  - Transaction & timeliness costs may be too high
  - Possibly transitional only – ultimately one partner likely will emerge as dominant (but important transition)
  - Custom operators will give preference to size
- Successful farms will become
  - Astute assessors of costs for asset ownership and use
  - Astute price negotiators (to retain the related EOS)

Trends . . .

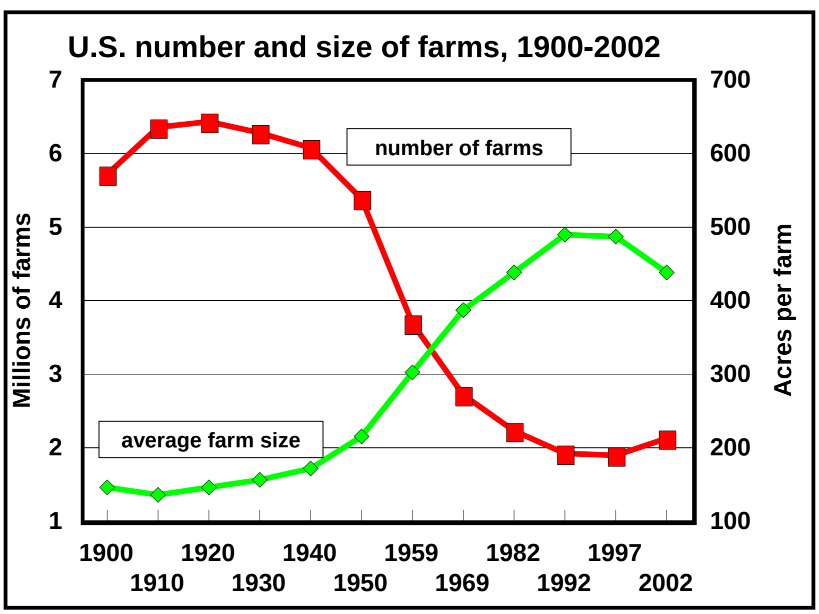
1. Increasing consolidation
2. Rapid technological change
3. Greater connections to the non-ag world
4. Increased computer work and paper work
5. More reliance on people with specialized skills

   – Trends go hand in hand with economies of size

1. Consolidation

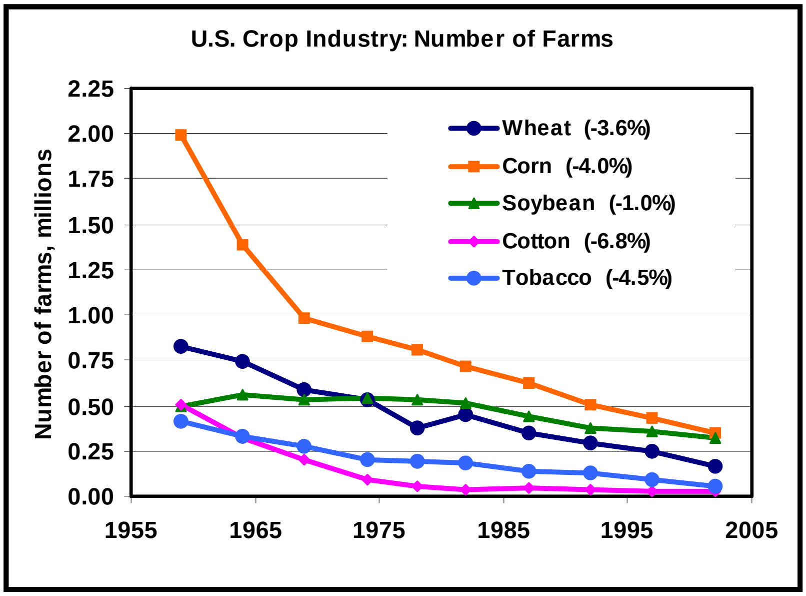
- The same or more business conducted by fewer firms
  - Cars started with Ford, numerous by 1940's, consolidated by 1970's
  - Many dry goods retailers, now Walmart
  - Currently mostly Deere and CNH in US
  - Fewer packers, cattle feeders, dairies, swine operations, and crop farms
  - But also fewer lenders, machinery dealerships, grain elevators, and crop/livestock input providers

  - Driven by economies of size



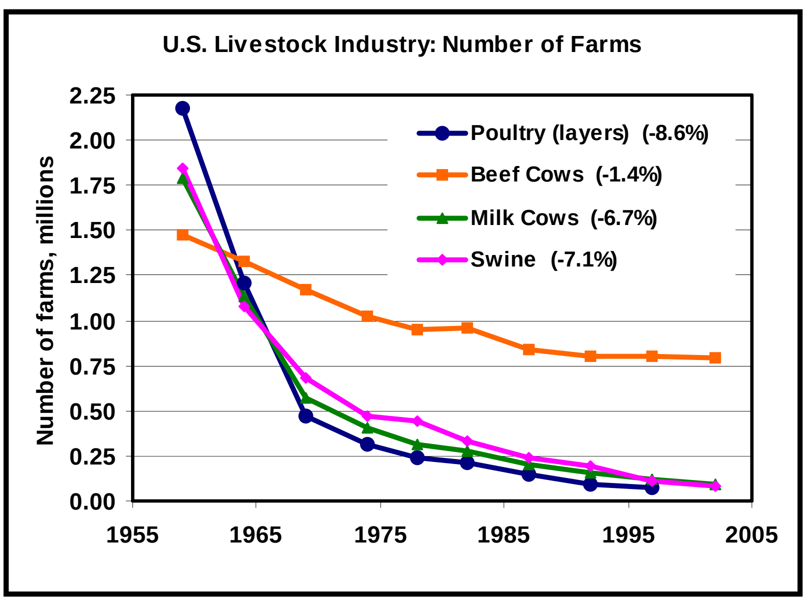
Source: Census of Agriculture

Trends in crop farm numbers . . .



Source: Census of Agriculture

Trends in livestock farm numbers . . .



Source: Census of Agriculture

Concentration of U.S. animal agriculture in 2005 . . .
(production from approximately 10% of operations)

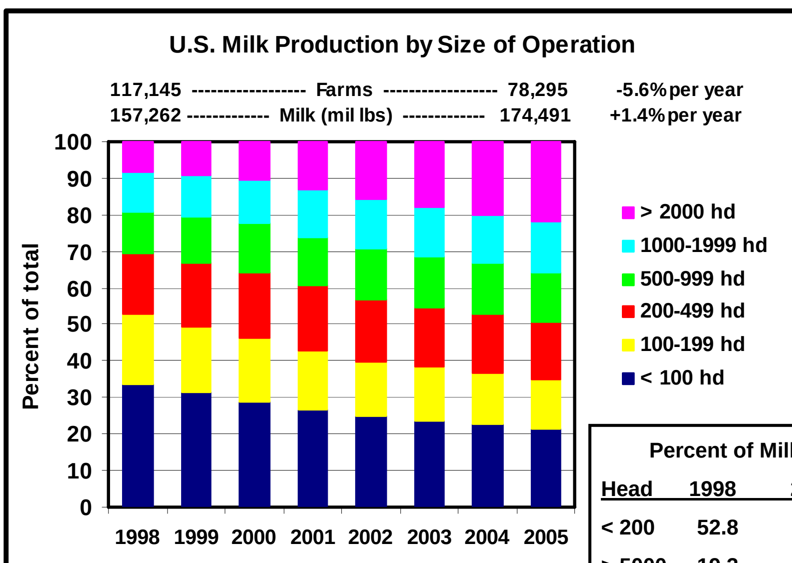
	Size of operation (hd)	Percent of operations	% of I, M, or P*
Beef cows	100+	10.2%	55.5% (I)
1000+ head Feedlots**	24,000+	8.4%	60.7% (M)
Dairy	200+	9.9%	64.9% (P)
Swine	2,000+	11.3%	79.0% (I)

* I = Inventory, M = Marketings, P = Production

** Feedlots with 1000+ head represent 2.5% of all feedlots and account for 86.0% of marketings

Source: USDA NASS and K-State

Average farm sizes don't tell the whole picture . . .

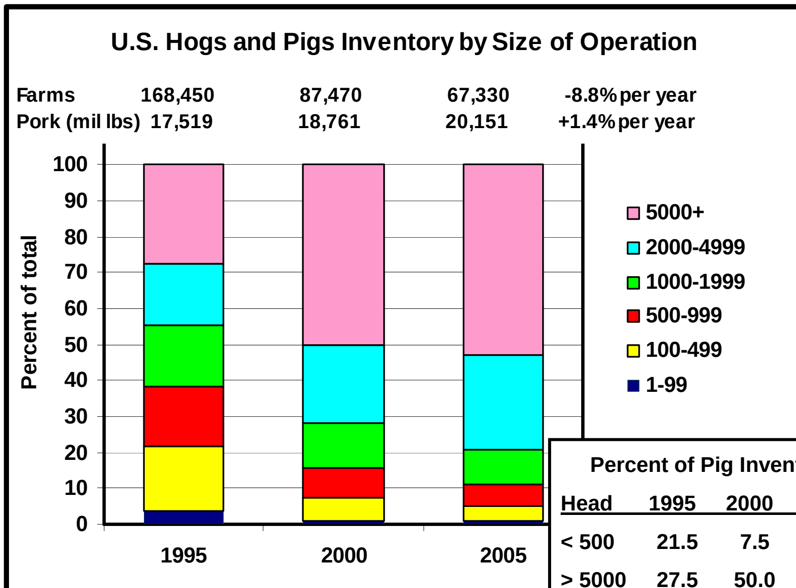


Percent of Milk

Head	1998	2005
< 200	52.8	35.1
> 5000	19.3	36.0

Source: USDA NASS

Average farm sizes don't tell the whole picture . . .



Percent of Pig Inventory

Head	1995	2000	2005
< 500	21.5	7.5	5.0
> 5000	27.5	50.0	53.0

Source: USDA NASS

Will consolidation in *crop production* speed up?

- **Farm machinery:**
  - More like a fixed investment in factory facilities
  - Sophisticated, expensive, for round-the-clock use
- **People:**
  - Skills required are becoming more specialized
    - often requiring different people (like other businesses)
  - Management becomes fixed cost
  - Business continuity means a management team
    - Even larger fixed cost
- **Remember, we never saw the rapid consolidation in poultry, swine, and dairy coming either**

Implications of consolidation

- Fewer companies, not fewer choices
  - Product differentiation is a natural outcome
  - Few brands but many classes and features
  - Few grain buyers but many marketing packages
  - Few bankers but many loan/interest rate packages
- Transactional (market) price less informative
  - Must improve people skills
    - Farm managers will need to establish interpersonal relationships with other farm managers, so that reliable information on product prices, features, and availability can be gained through communication and consensus.

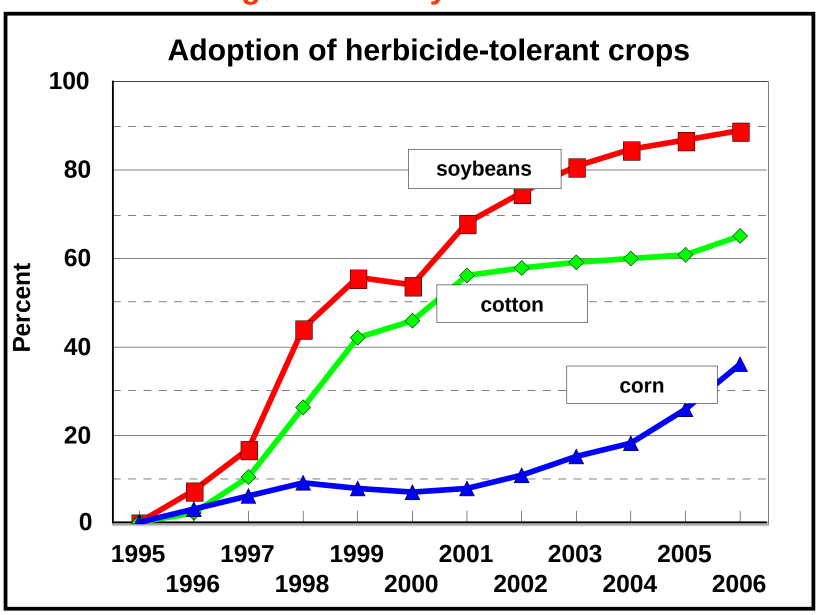
2. Technology

- Early adopters get the profits
  - Bid into cash rents and land values
  - Higher rents mean higher costs and non-adopters find themselves going broke in the face of rents they perceive as "too high"
- Speed of adoption depends on:
  - A) magnitude of expected profitability
  - B) degree of confidence in the expected profit
  - C) size of investment

Technology: speed of adoption

- Big and obvious gains probably non-existent
- Small, obvious, gains along with small investment implies fast adoption
  - "belly-button" or "duh" technologies
  - Roundup-Ready soybeans

Some technologies are fairly obvious . . .

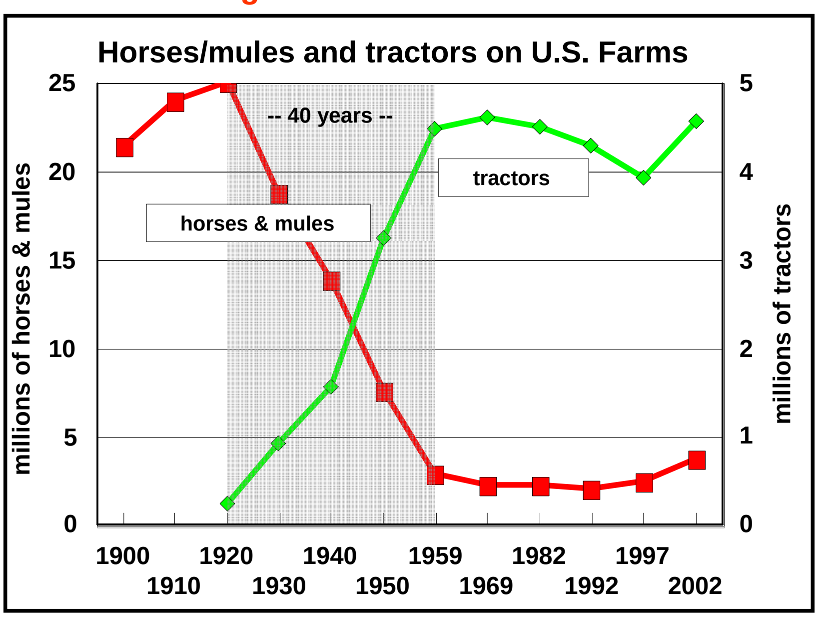


Source: USDA/ERS

Other “duh” technologies (most farms)

- Lightbars (GPS guidance)
  - Gains against overlap and marker alternatives are easy to assess
  - Do take a little more investment so less adopted by small farms
- Tractor cabs
  - Hard to measure gain in $ but know it’s there
- GPS-assisted steering
  - Larger investment than lightbars but still easy to measure advantage
  - Aspects like tractor cabs (reduces stress)

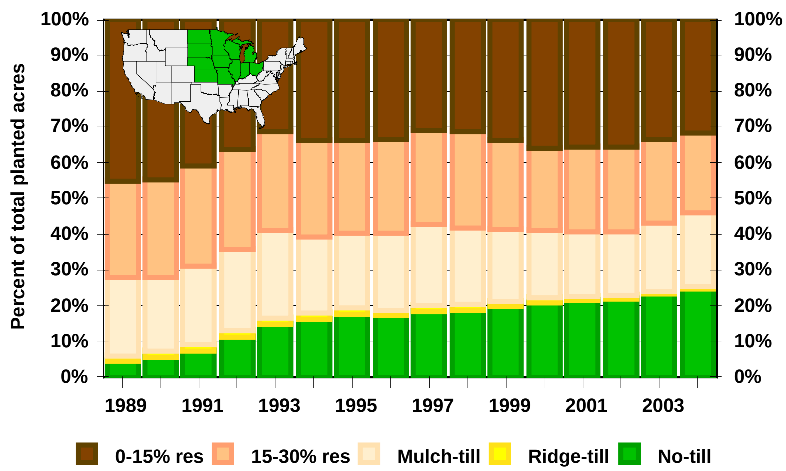
Some technologies aren’t so obvious . . .



Source: U.S. Census of Agriculture

Some technologies aren't so obvious . . .

Distribution of tillage systems in Midwest -- All crops

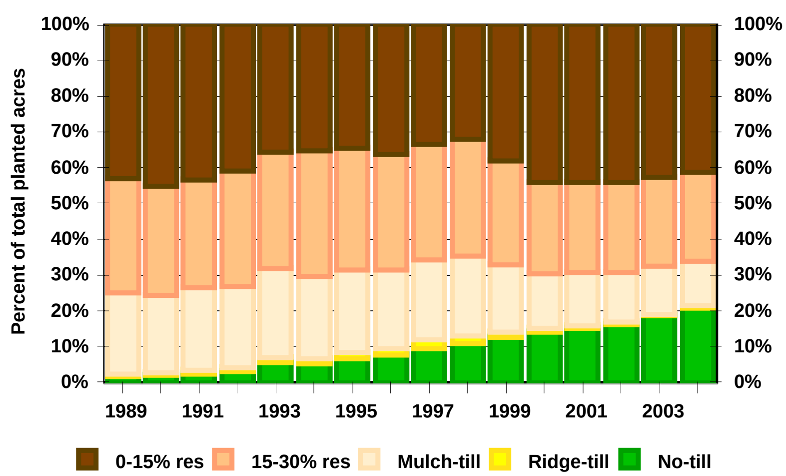


Source: CTIC, Crop Residue Management Survey (1999, 2001, and 2003 interpolated)

Midwest covers much of Corn Belt (much wetter climate)

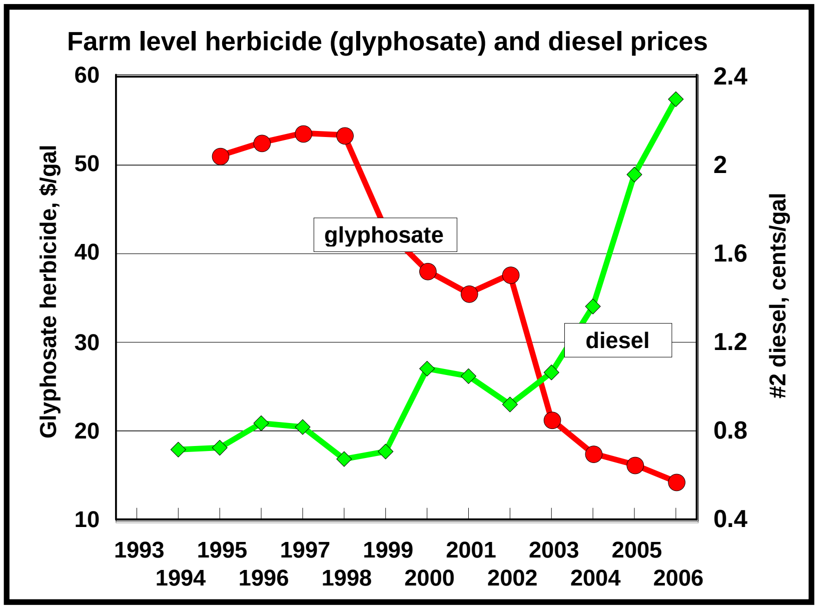
Some technologies aren't so obvious . . .

Distribution of tillage systems in KS -- All crops



Source: CTIC, Crop Residue Management Survey (1999, 2001, and 2003 interpolated)

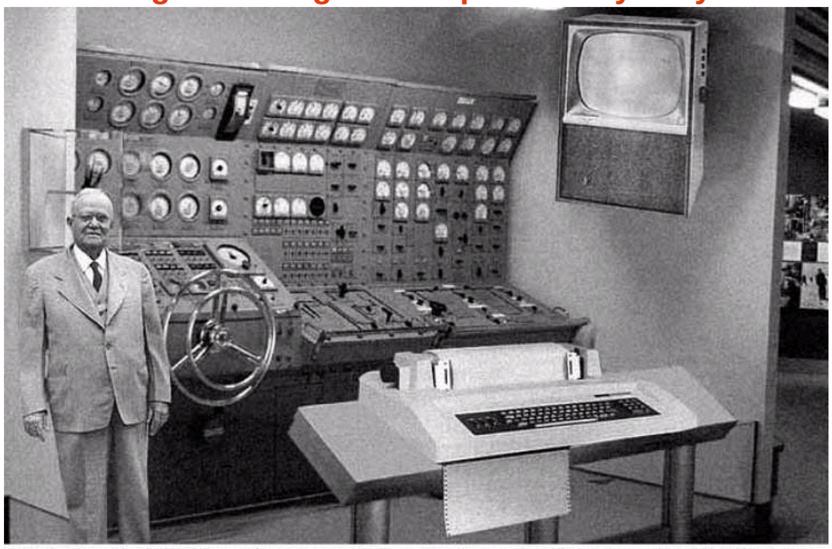
Will adoption of NT speed up?



Technology: how to get an edge

- Invest in the "duh" technologies quickly
  - You don't have a choice
- Invest in the slow moving technologies
  - The profits will last for years
- Invest in technologies that DO NOT save labor
  - Most people do not; hence the gains last for years
- Must look beyond the neighbors
  - Not many specialized machines around
  - Consider the web for contacts

Predicting technologies isn't particularly easy . . .



Scientists from the RAND Corporation have created this model to illustrate how a "home computer" could look like in the year 2004. However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require not yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems. With teletype interface and the Fortran language, the computer will be easy to use.

Popular Science, 1954

4. More paperwork (computer work?)

A. improved accrual accounting

B. better capital asset management
   - land and machinery

C. improved production data mgmt & analysis
   - precision ag / on-farm research

D. better day-to-day decisions on complex issues

Day-to-day decisions improved

- Crop insurance is an example
  - Many policies and choices
  - Talking to neighbors won’t cut it
- Land rental agreements is another example
  - New rotation and tillage programs complicate
  - Talking to neighbors won’t cut it
- Need to be able to objectively and numerically analyze decisions
  - “Management by numbers”

5. Need folks with specialized skills

- Financial management
  - Agricultural economics and accounting
- Production management
  - Agronomy and animal science
- Machinery understanding and management
  - Agricultural engineering
- Spatial data management
  - Geography
- Computer specialists
- Legal counsel

Folks with specialized skills

- Recognize the need
- Do specialized consultants exist
  - Are they worth their pay?
- In house?
  - Should I get trained?
  - Should an employee get trained?
  - Formal degree program, workshop, or what?
  - Should I hire ready-made folks?

3. More connections with non-ag

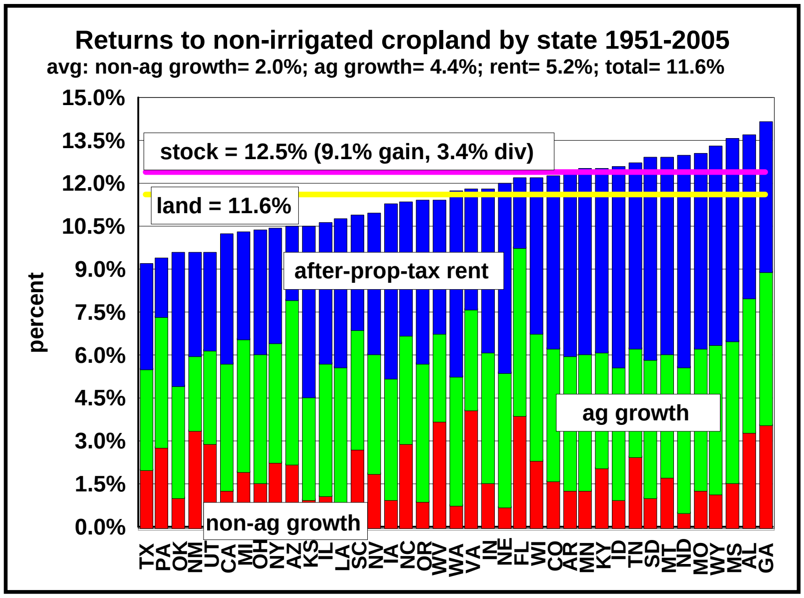
- More opportunities for non-farmers to invest on-farm (e.g., landowners)
- More opportunities for farmers to sell services to non-farmers (e.g., lease hunting)
- More opportunities for farmers to invest off-farm (e.g., ethanol)

Land is Unique

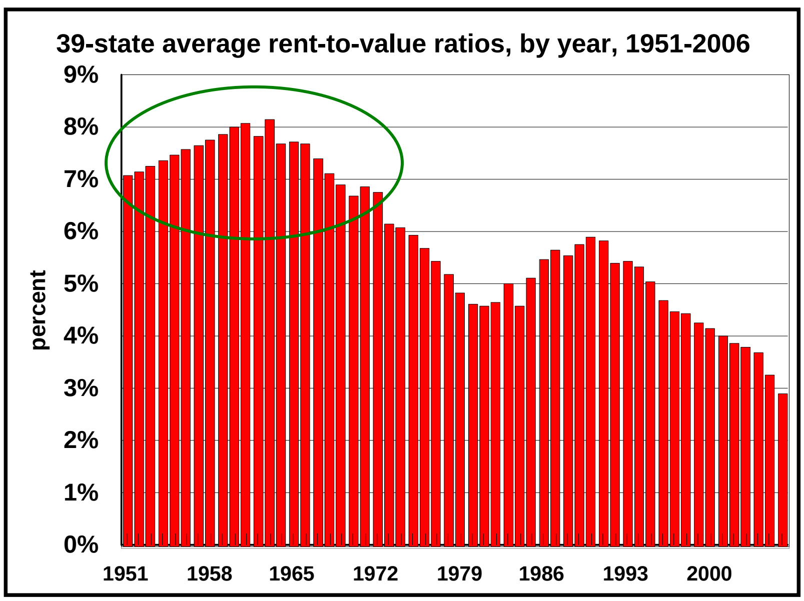
- Most fixed of farming assets
  - Residual claimant
  - Capitalizes government subsidies
- Often is taxed
  - Favorably or unfavorably
- Has non-ag benefits that may be pecuniary
- Has non-pecuniary benefits
- A long term investment involving long term expectations – history is a guide

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)



39 states ranked by total returns to land



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%

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)

Agricultural Market Value of Agricultural Land using Alabama as an example

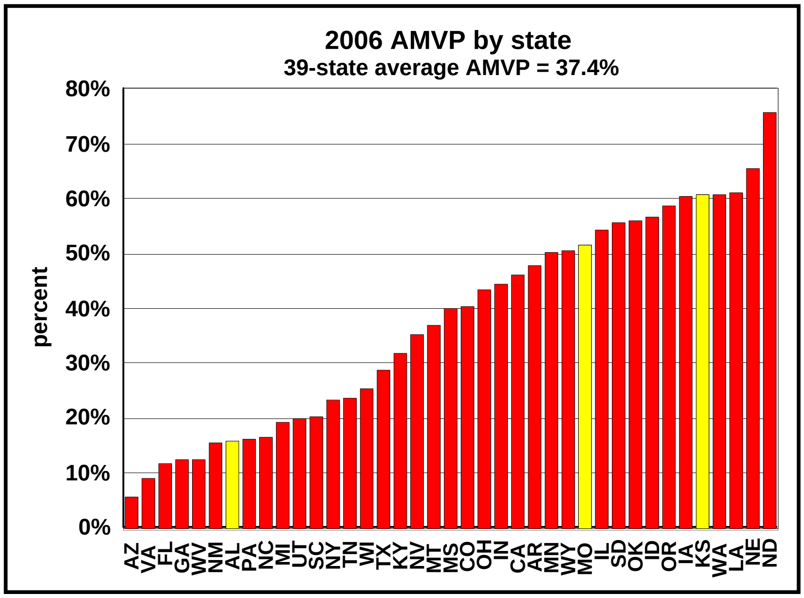
- Jan. 1, 2006 crop land value = $2950 /acre
- Cash rent for 2006 = $39.00 /acre
- 2006 property tax = $1.31 /acre
- 2006 after-property-tax rent = $37.69 /acre
- $37.69 / 0.0803 = $469.36 /acre

- AMVP = $469.36 / $2950 = 0.159 = 15.9%

Agricultural Market Value of Agricultural Land using Missouri as an example

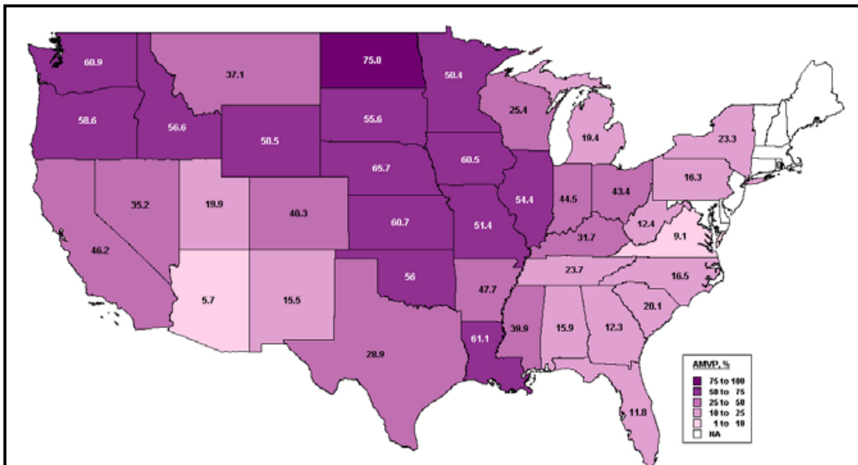
- Jan. 1, 2006 crop land value = $2100 /acre
- Cash rent for 2006 = $79.00 /acre
- 2006 property tax = $1.29 /acre
- 2006 after-property-tax rent = $77.71 /acre
- $77.71 / 0.0720 = $1080/acre

- AMVP = $1080 / $2100 = 0.159 = 51.4%



percent of land value that is due to agriculture

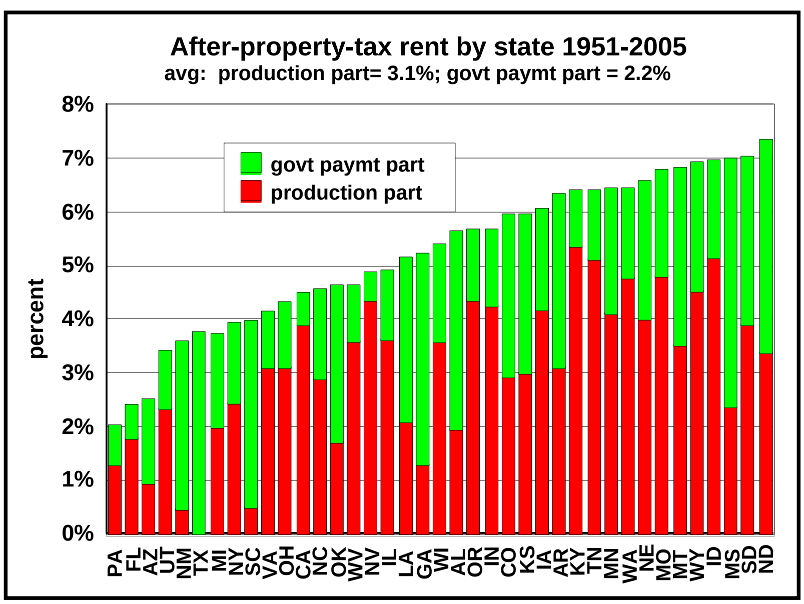
Portion of Land Value Attributed to Agricultural (AMVP) (production and government payments)



Source: Kastens and Dhuyvetter, September 2006

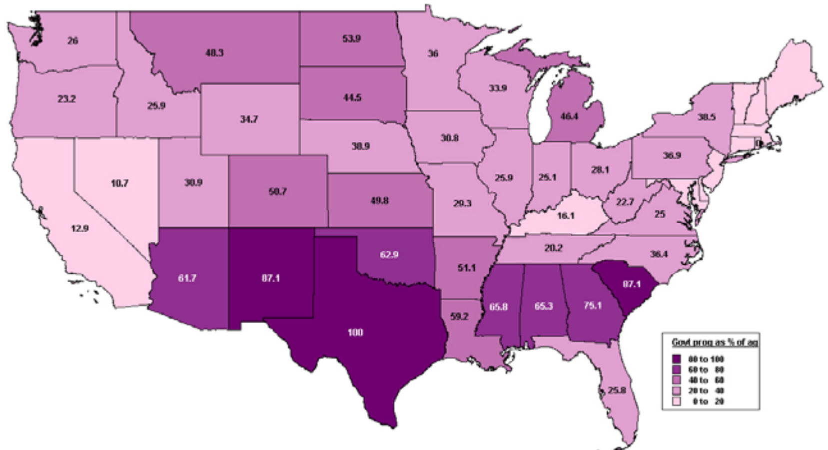
Government Program Payments

- 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 (agricultural rent only!)

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



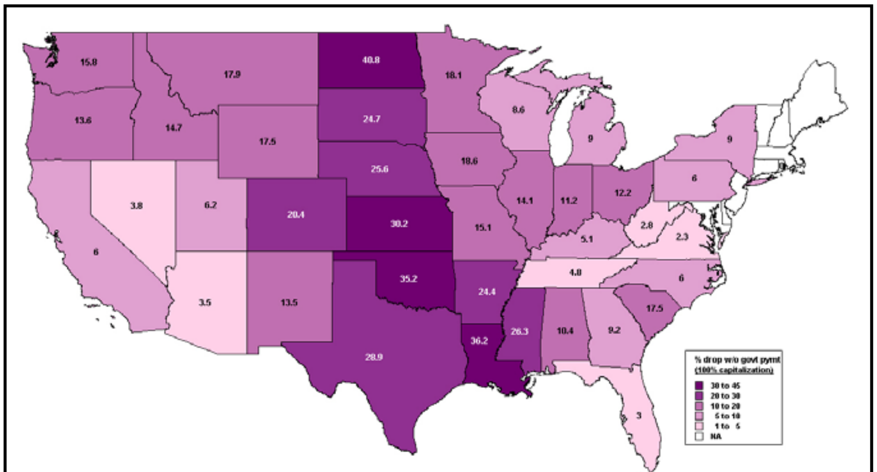
Source: Kastens and Dhuyvetter, September 2006

government payments as a percent of agricultural rent

Government Program Payments

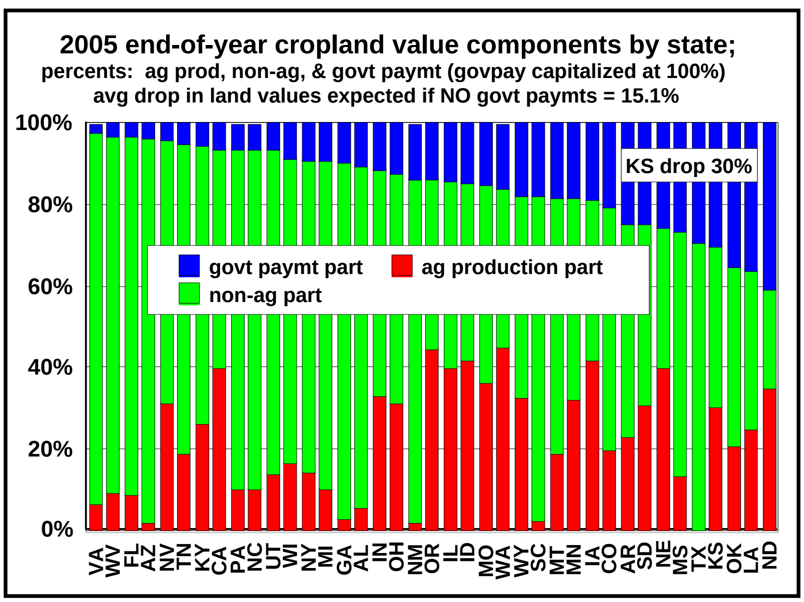
- States whose land values have substantial non-ag components would not suffer as much in the absence of payments
  - Alabama and Georgia are notable Southern states
  - Great Plains states don't have that advantage

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



Source: Kastens and Dhuyvetter, September 2006

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

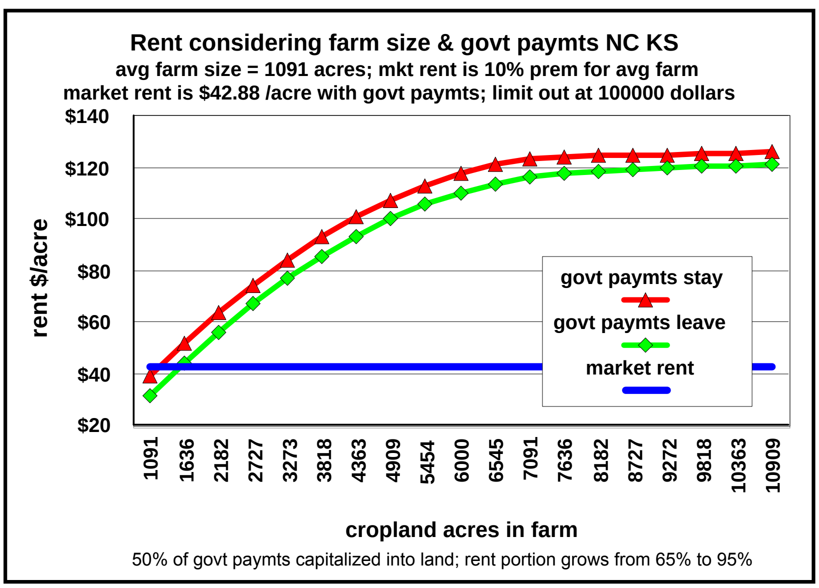


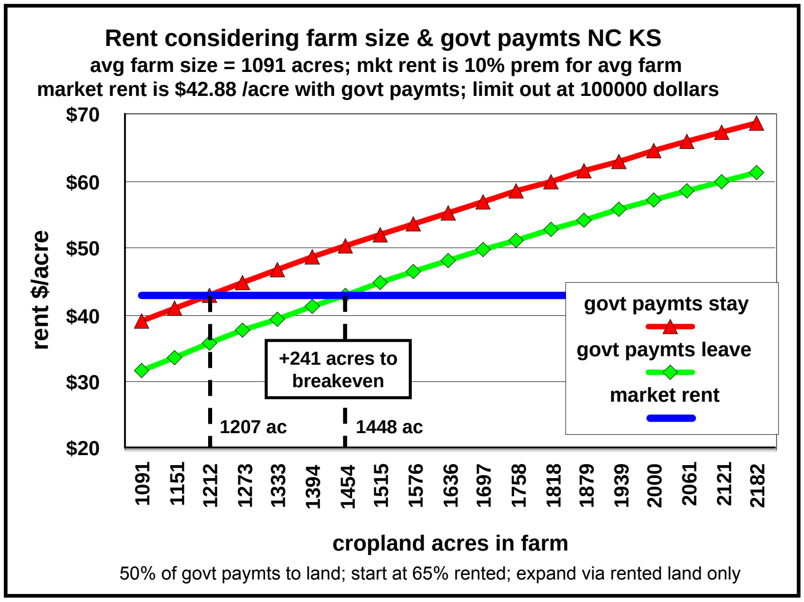
ranked by percent of land value that is due to government program payments

Would land values really fall that far?

- Tract-specific sales and rent prices indicate that gov't payments are not fully capitalized
  - But perhaps different on the bottom than the top side
- 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

Farm size vs. government payment:
Impact on land rents/values





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

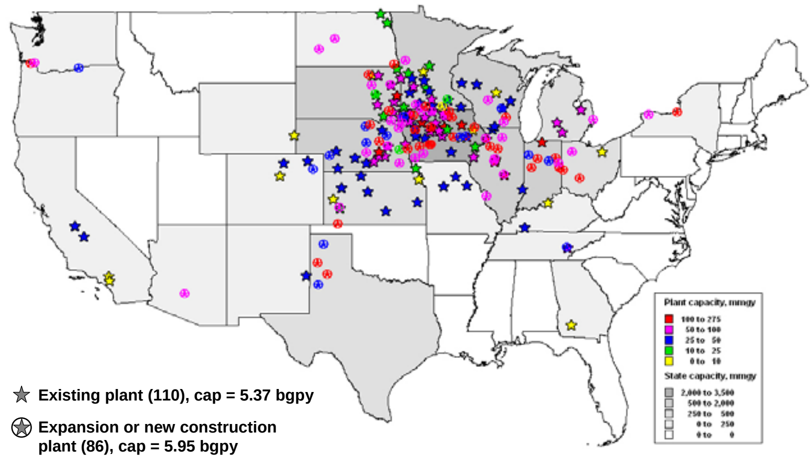
Factors impacting agricultural land values…

- 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

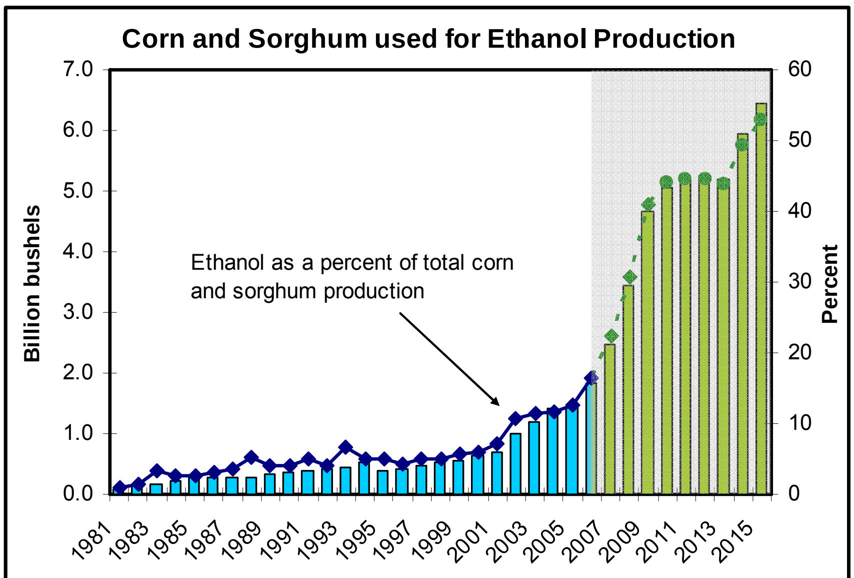
Existing and new ethanol plants

Source: Renewable Fuels Association (RFA), Kansas State University

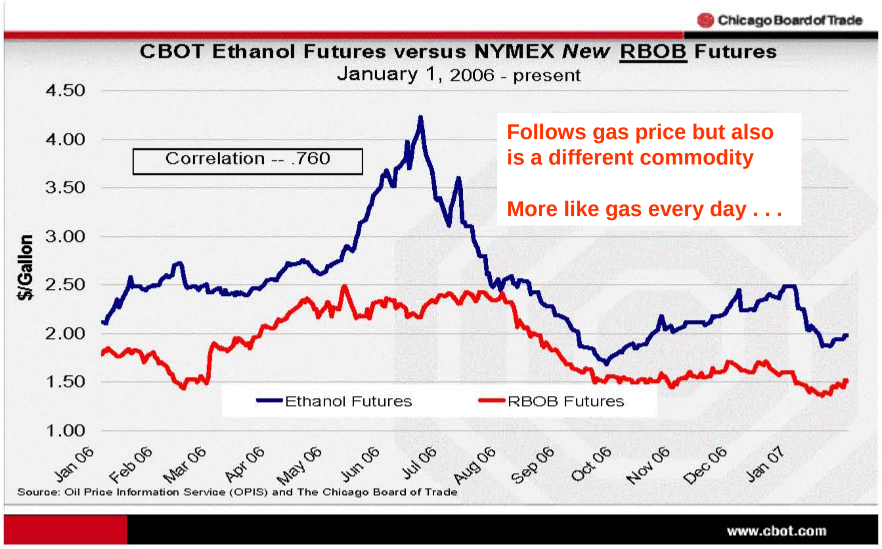


(182 plants with an annual capacity of 11.3409 billion gallons – 12/29/06)

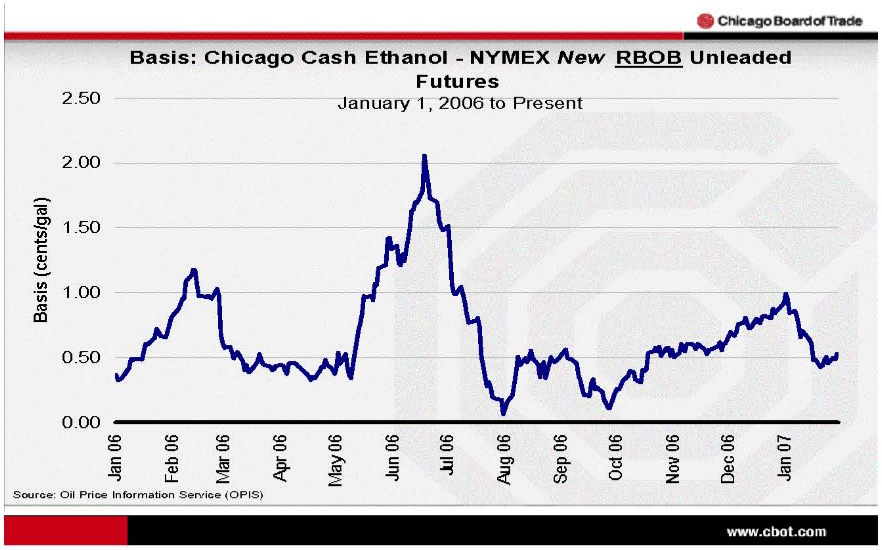
(143 plants with an annual capacity of 7.27 billion gallons – 7/26/06)

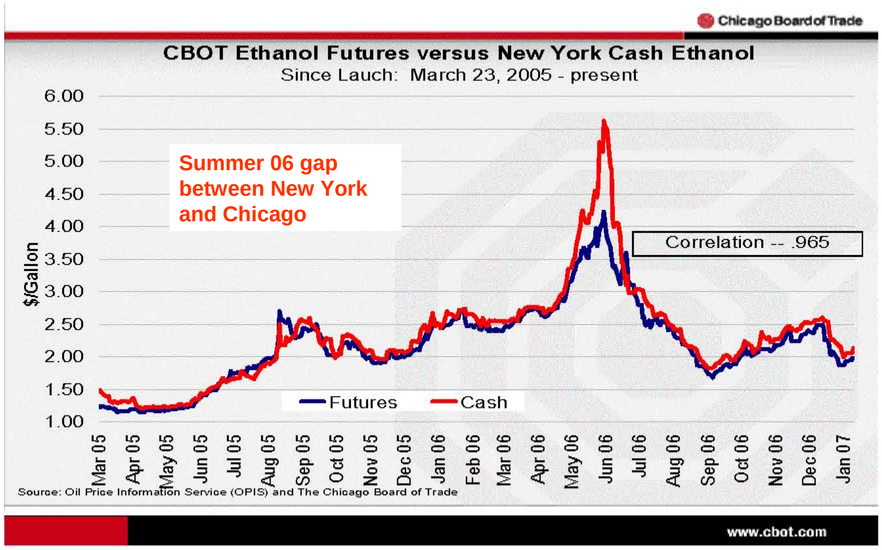


Fairly obvious why we will need considerably more corn acres



RBOB (reformulated blendstock for oxygenate blending); RFG w/o oxygenate; will completely replace RFG (which contained oxygenate) as gasoline being traded





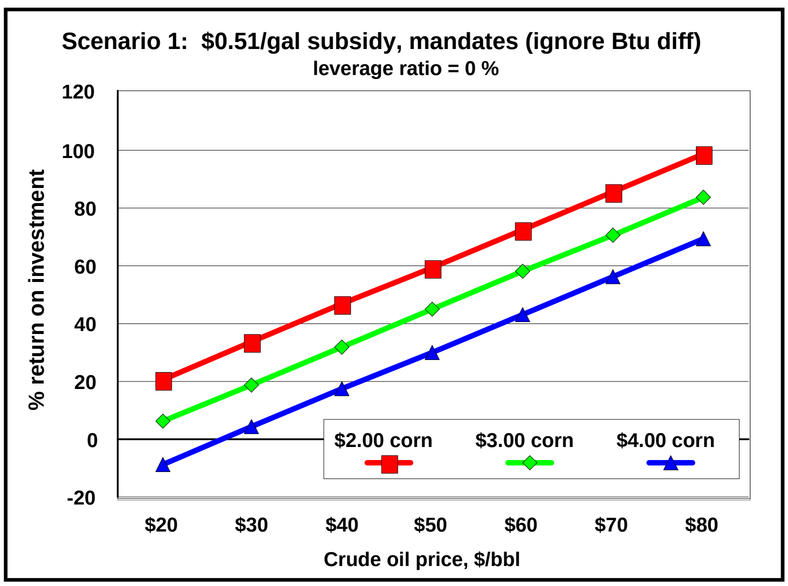
Ethanol shortage in places like NY allowed for exorbitant ethanol profits in summer 2006

Ethanol Profitability

Ethanol Assumptions

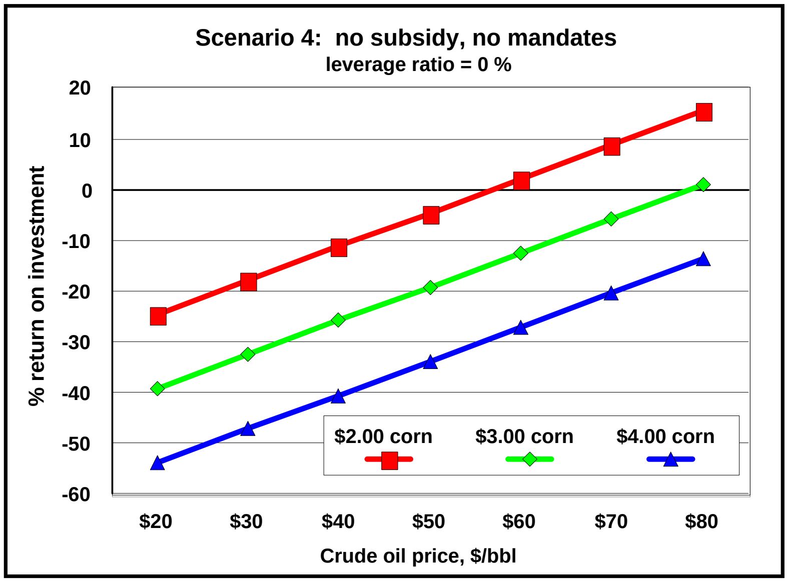
- 2.75 gal ethanol/bu of corn
- 18 lb DDG/gal ethanol
- DDG valued at 1.0263 of corn price
- 0.038 MCF natural gas/gal of ethanol
- 0.05 gal gasoline added to a gal ethanol to make 1.05 gal
- Btu of ethanol (with denaturant) is 62.73% of gasoline
- 0.80 Kwh/gal ethanol at $0.06/Kwh cost
- $1.67/gal annual capacity is initial investment
- 6% loan interest rate
- $0.51/gal subsidy (no state subsidies)
- $0.2202/gal costs for non-corn, non-natural gas, and non-denaturant
- Natural gas and gasoline prices predicted with a statistical model using crude oil as determinant
- Ethanol price based on gasoline & subsidy & Btu adjustment

Big profits are possible in ethanol investment . . .

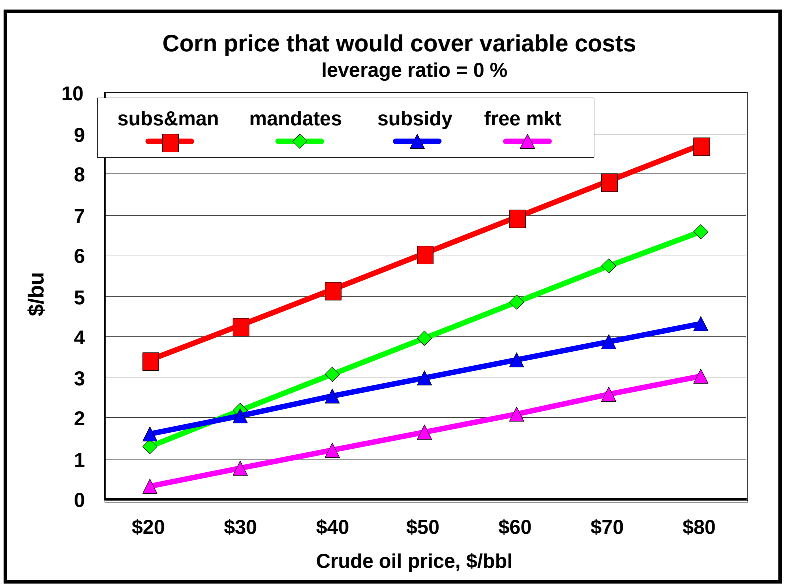


More or less today, ethanol premium due to mandates + subsidy

Profits can disappear if political support wanes . . .



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



If mothballing costs are high, effective breakeven prices are higher

Pacific Ethanol stock price

Ethanol investment does have risks . . .

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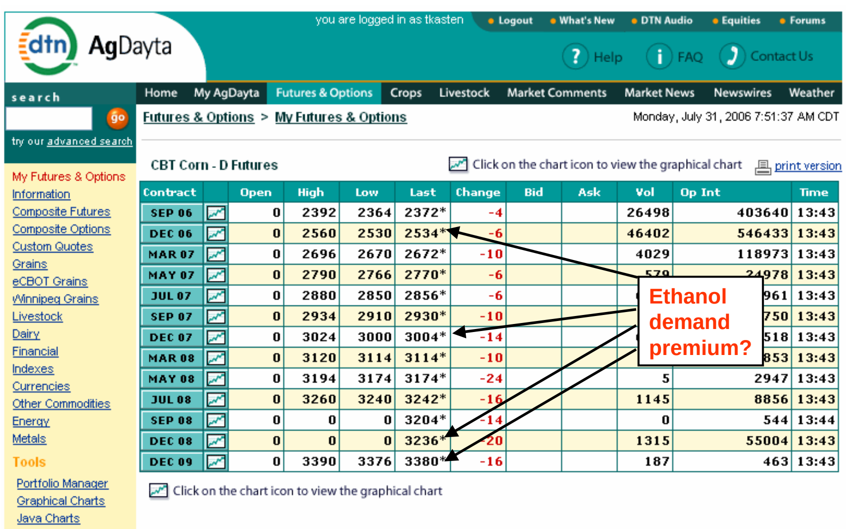
Ethanol consideration for grain producers (July 31, 2006)



Contract		Open	High	Low	Last	Change	Bid	Ask	Vol	Op Int	Time
SEP 06		0	2392	2364	2372*	-4			26498	403640	13:43
DEC 06		0	2560	2530	2534*	-6			46402	546433	13:43
MAR 07		0	2696	2670	2672*	-10			4029	118973	13:43
MAY 07		0	2790	2766	2770*	-6			579	24978	13:43
JUL 07		0	2880	2850	2856*	-6			[illegible]	[illegible]961	13:43
SEP 07		0	2934	2910	2930*	-10			[illegible]	[illegible]750	13:43
DEC 07		0	3024	3000	3004*	-14			[illegible]	[illegible]518	13:43
MAR 08		0	3120	3114	3114*	-10			[illegible]	[illegible]853	13:43
MAY 08		0	3194	3174	3174*	-24			5	2947	13:43
JUL 08		0	3260	3240	3242*	-16			1145	8856	13:43
SEP 08		0	0	0	3204*	-14			0	544	13:44
DEC 08		0	0	0	3236*	-20			1315	55004	13:43
DEC 09		0	3390	3376	3380*	-16			187	463	13:43

Click on the chart icon to view the graphical chart

Ethanol demand premium?

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Ethanol consideration for grain producers (Feb 7, 2007)

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Wednesday, February 7, 2007 8:30:37 AM CST

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CBT Corn - D Futures

Click on the chart icon to view the graphical chart · print version

Contract	Open	High	Low	Last	Change	Bid	Ask	Vol	Op Int	Time
MAR 07	0	4024	3962	3964*	-54			33597	400879	18:42
MAY 07	0	4144	4084	4086*	-56			10113	281261	18:42
JUL 07	0	4220	4150	4154*	-54			[illegible]	[illegible]	18:42
SEP 07	0	4060	4010	4014*	-40			[illegible]	[illegible]	18:42
DEC 07	0	3982	3904	3914*	-34			[illegible]	[illegible]	13:49
MAR 08	0	4036	3974	3976*	-36			[illegible]	[illegible]	18:42
MAY 08	0	4070	4020	4020*	-34			5	5654	18:42
JUL 08	0	4120	4060	4060*	-30			103	21887	18:42
SEP 08	0	3850	3830	3850*	0			6	5059	18:42
DEC 08	0	3794	3764	3766*	-10			474	84242	18:42
JUL 09	0	3862	3854	3854*	4			11	472	18:42
DEC 09	0	0	0	3582*	2			107	8653	13:49
DEC 10	0	0	0			0	3600	0	0	18:42

Ethanol demand premium?

Ethanol consideration for grain producers (Feb 21, 2007)

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Futures Detail

Refresh

DAY CORN (C) [10 minute delay] Future Symbol Search | Symbol Lookup

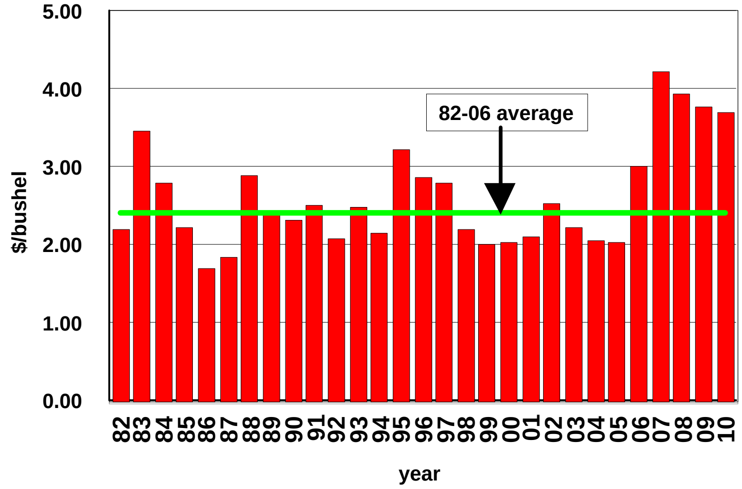
More Info	Month	Last	Chg	Open	High	Low	Volume	Open Int	Trade Time
chart options	Mar-07	426'2s	11'0	414'0	428'2	413'4	49454	186553	02/21/07 13:36
chart options	May-07	439'0s	10'6	427'0	441'2	426'2	32368	462819	02/21/07 13:36
chart options	Jul-07	448'2s	10'4	437'0	451'0	436'4	19085	259643	02/21/07 13:36
chart options	Sep-07	433'4s	9'6	423'0	435'0	422'6	1996	63827	02/21/07 13:36
chart options	Dec-07	423'0s	9'6	411'0	425'0	[illegible]	[illegible]	[illegible]	02/21/07 13:36
chart options	Mar-08	428'2s	9'0	419'4	430'0	[illegible]	[illegible]	[illegible]	02/21/07 13:36
chart options	May-08	430'4s	8'4	425'0	432'4	[illegible]	[illegible]	[illegible]	02/21/07 13:37
chart options	Jul-08	434'2s	8'2	428'0	436'4	[illegible]	[illegible]	[illegible]	02/21/07 13:36
chart options	Sep-08	404'0s	6'4	396'0	404'0	396'0	21	5450	02/21/07 13:36
chart options	Dec-08	393'0s	5'0	387'0	395'4	387'0	1309	86399	02/21/07 13:36
chart options	Jul-09	399'0s	5'4	398'4	399'0	398'0	5	535	02/21/07 13:36
chart options	Dec-09	378'4s	7'4	372'0	379'0	372'0	105	9906	02/21/07 13:36
chart options	Jul-10	384'0s	19'0	---	---	---	0	29	02/21/07 13:36
chart options	Dec-10	370'4s	7'0	366'0	372'0	366'0	41	225	02/21/07 13:36

Wed, Feb 21, 2007 9:31 PM CST *Quotes are in market time

Print

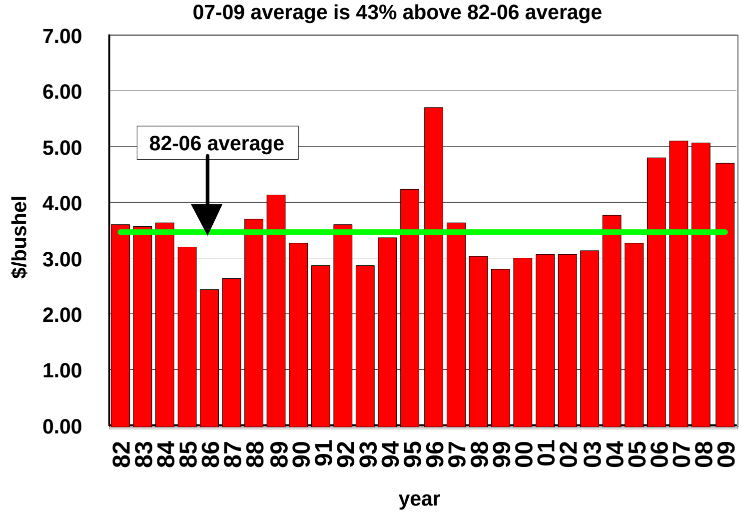
Ethanol demand premium?

Harvest (CBT-Z) futures for corn, 1982-2010
harvest in October; 07-10 based on futures prices 02/21/2007
07-10 average is 63% above 82-06 average

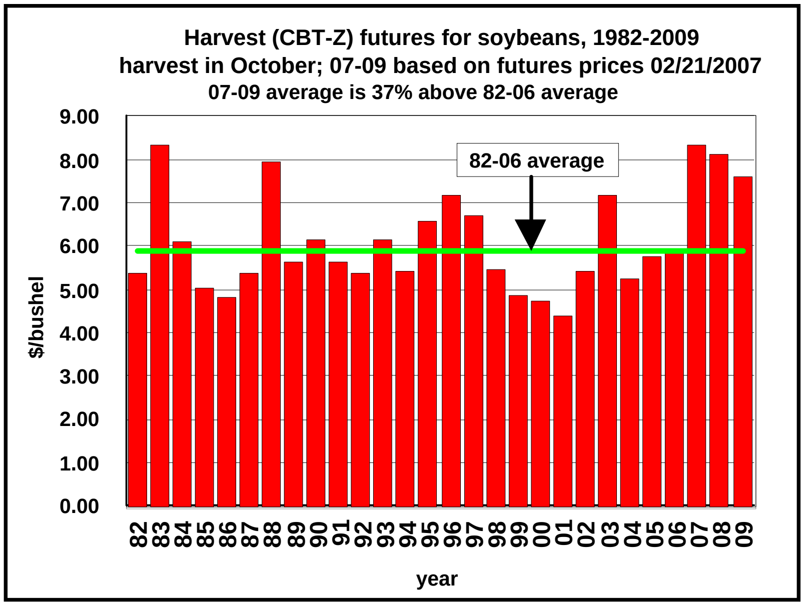


Unprecedented opportunity in corn production – even 4 years out!

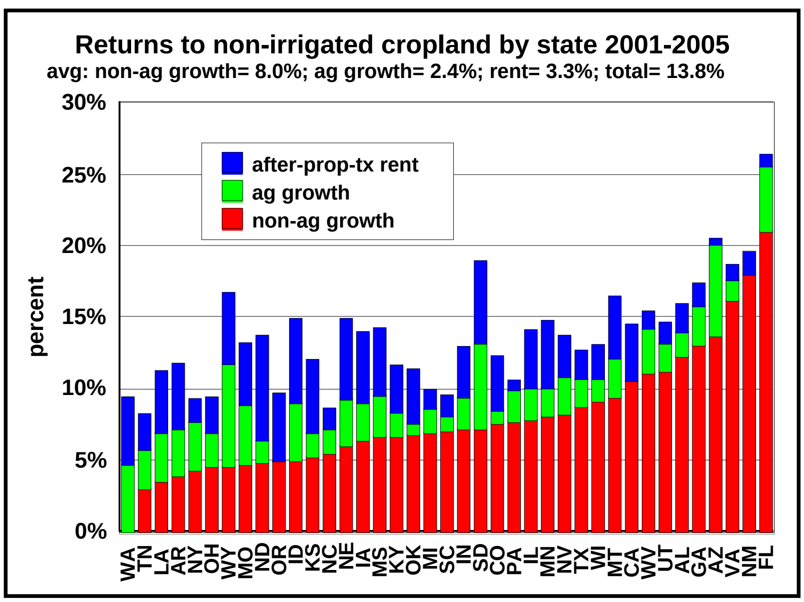
Harvest (KBT-N) futures for hard red winter wheat, 1982-2009
harvest in June; 07-09 based on futures prices 02/21/2007
07-09 average is 43% above 82-06 average



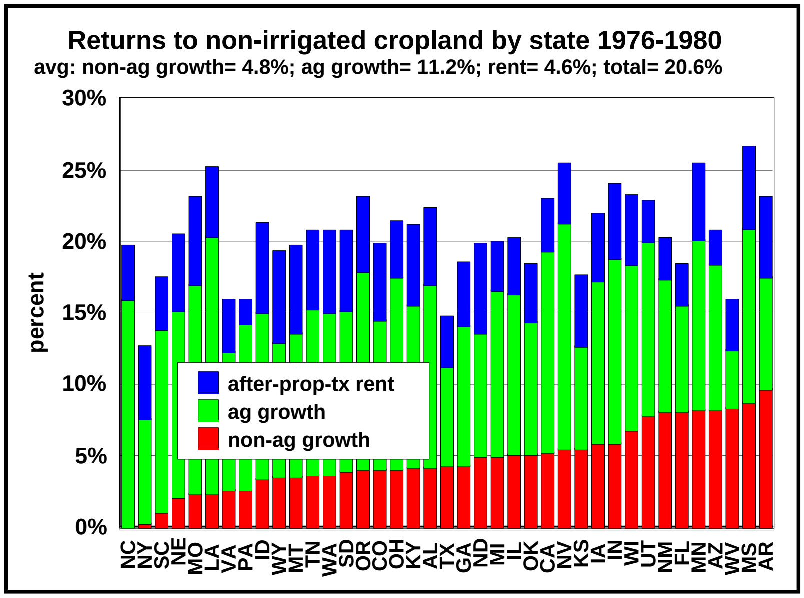
But, wheat will be impacted as well . . .



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

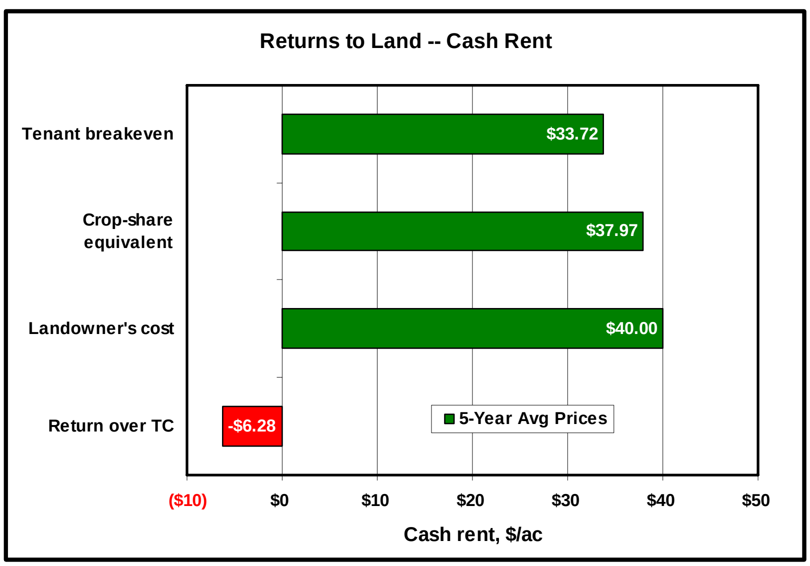


Non-ag growth much more important lately; total returns not especially high



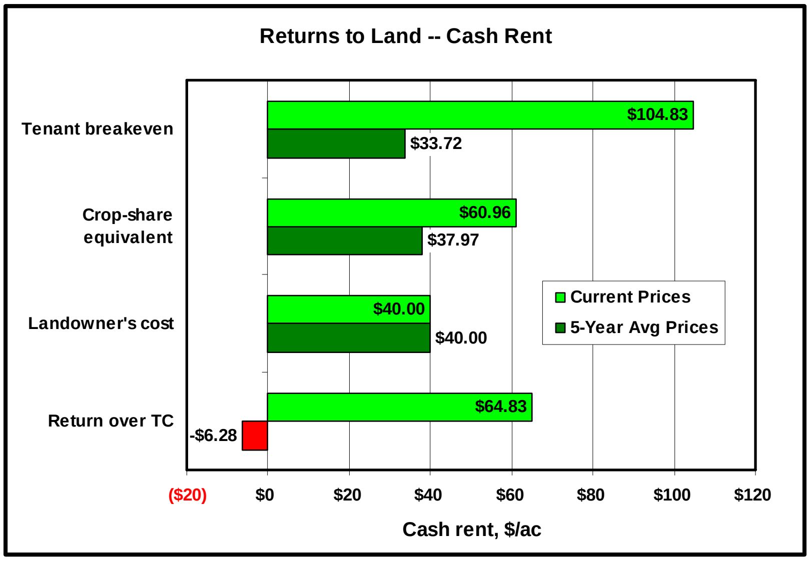
Dominated by growth in ag rents (inflation); total returns very high

Estimated cash rents for Central Kansas



Based on KSU Farm Management Guides and KSU-Lease.xls (available at www.agmanager.info)

Estimated cash rents for Central Kansas



Based on KSU Farm Management Guides and KSU-Lease.xls
(available at www.agmanager.info)

Questions ???

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