

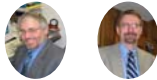
## Strategic Management for Growing Farms

### Economies of Size and Trends in Agriculture

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## 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)

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## 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

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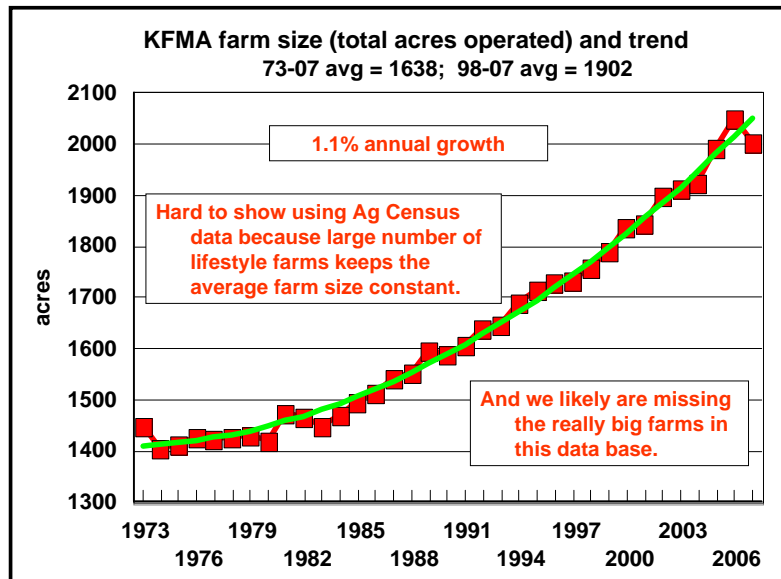
## Is EOS for real?

- 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 manager?

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## Is EOS for real?

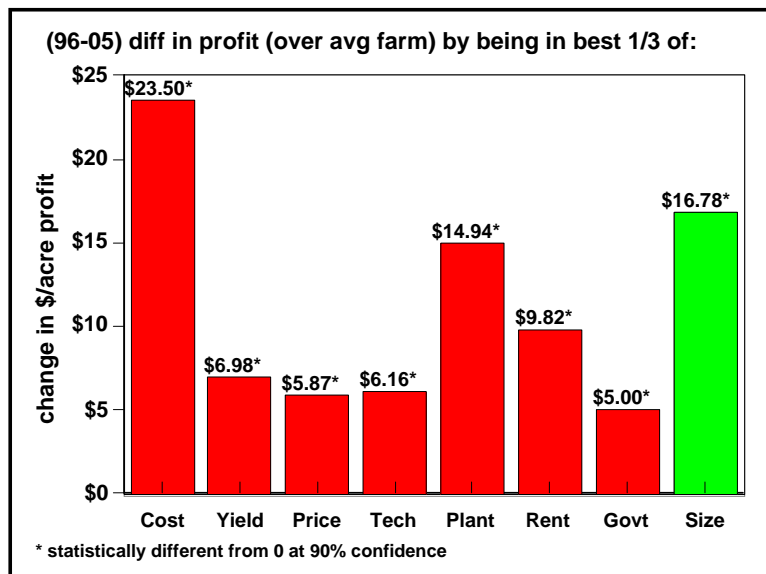
- Hard to distinguish effect of good management and other factors from the effect of size
- Statistical regression is one way to do it
  - After you correct or adjust for the impact of other factors, is there still a positive impact on profit associated with size?



Farm size has been increasing at an increasing rate for COMMERCIAL farms

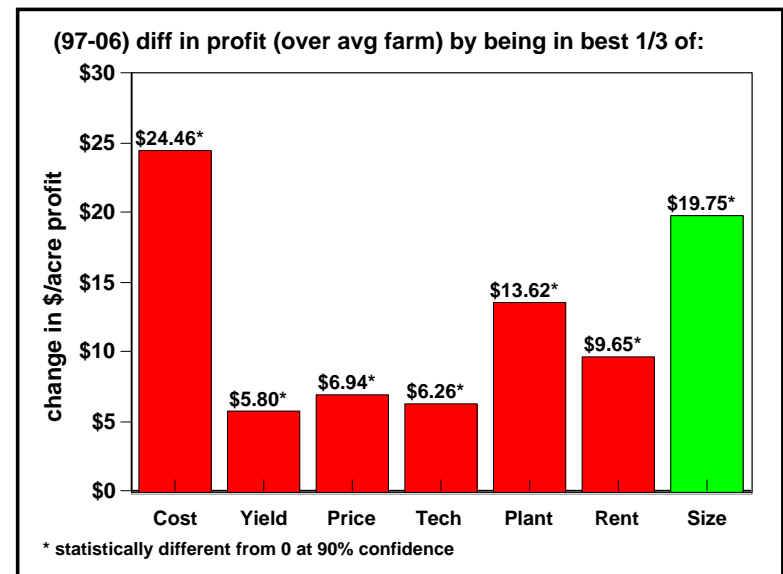
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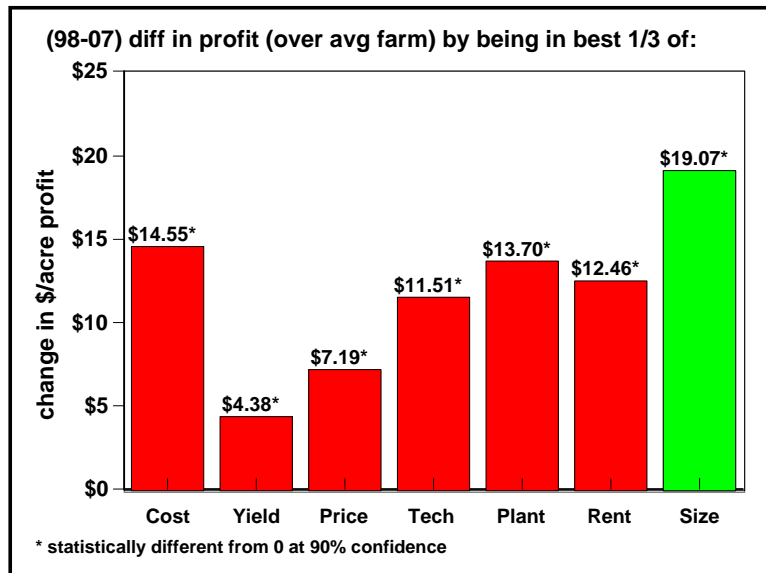
A size effect remains – evidence that EOS is for real

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EOS becoming more important, absolutely and relatively

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EOS becoming more important still -- relative to always-big "Cost"

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## 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

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## 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
- Farming will become increasingly bimodal

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## 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

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## 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

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## 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?

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## EOS implications: labor

- Show young people they can start in farming as an employee, just like what happens in every other business
  - Will happen as wages climb
- Show established owner-operators how they can transform to employee/partner types without losing face, and without sacrificing wealth and happiness

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## 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

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## 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)

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## 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

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## 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

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## 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.
  - Think of partners, not competitors!

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## 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

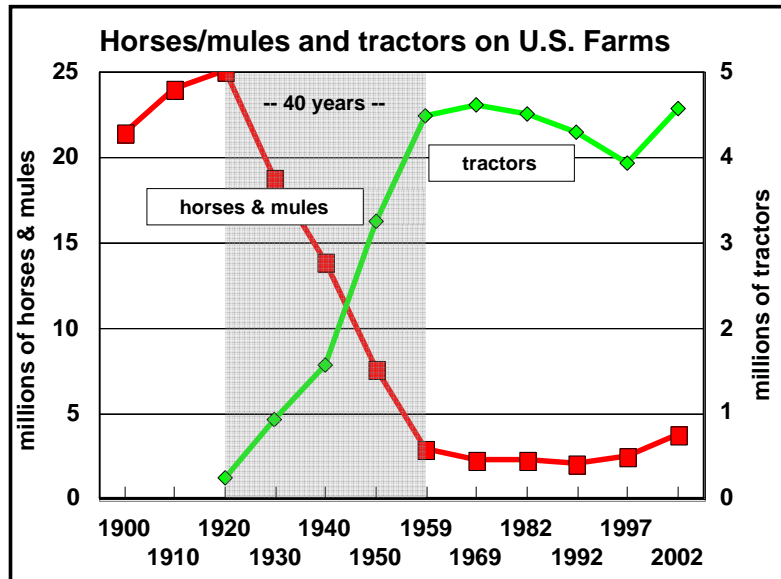
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## Other “duh” technologies (most farms)

- 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)

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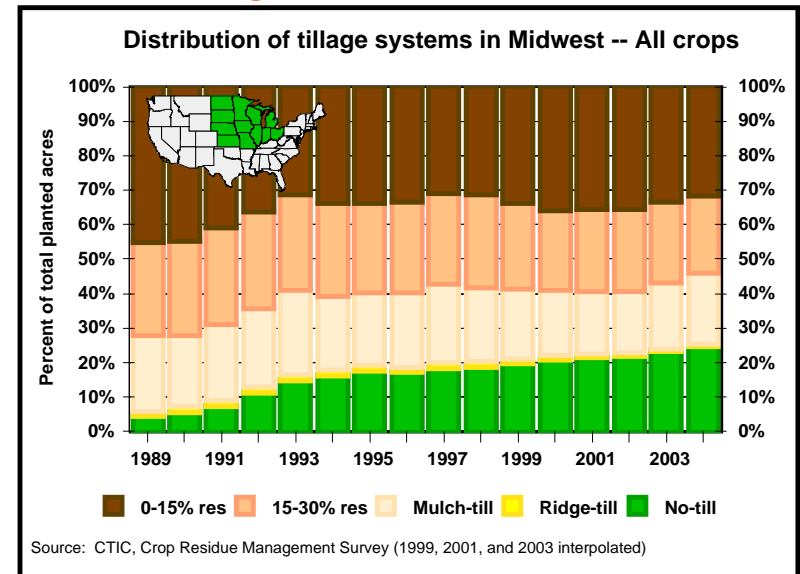
## Some technologies aren't so obvious . . .



Source: U.S. Census of Agriculture

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## Some technologies aren't so obvious . . .



Midwest covers much of Corn Belt (much wetter climate)

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

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## 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

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## 3. More connections with non-ag

- 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, or the latest value added)
- More opportunities for non-farmers to invest on-farm (e.g., landowners)
  - Most important for growth
- Increase need for analytical abilities and people/communication skills

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## **4. More paperwork -- actually more computer work**

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### **A. Improved accrual accounting**

- Called by different names but allows a farm business to know at any moment in time it's net worth
- Much more than cash accounting
  - Tracks inventory & capital item values
- More frequent than end-of-year
- Forward looking as for upcoming harvest

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### **B. Better capital asset management**

- Much of farm's assets are land & machinery
  - Land's value much more than agriculture
  - Machines are high dollar items
- But, knowing when to own capital assets and when to hire services is equally important

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### **C. Improved production data management and analysis**

- What do you do with reams of yield monitor or individual animal data?
- Do you know the profitability of individual fields and farms?
- Do you have the ability to perform and interpret on-farm research?

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## D. Better day-to-day decisions on complex issues

- 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
  - Land rents can deviate by:
    - Soil fertility
    - Field size & shape and access
- Need to be able to objectively and numerically analyze decisions
  - “Management by numbers”

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## Getting an edge with more paperwork

- Office work must be valued
- The world runs on computers
  - Get yours running and keep it that way
  - Businesses underestimate cost of support
- The world runs on spreadsheets!
  - You or someone you're close to better understand

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## 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
- Production ag is becoming a people world



## 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?

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## Rapid Growth

- Be absolutely sure that someone is in charge of keeping track of the economics and allocates the necessary time to do so!
- Someone has to be sure to keep electronics and computers working
- If you're going to expand rapidly, hire extra people whether it looks like they will pay or not. Initially, don't think like "but what will I have this guy do in the off season?"

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## Rapid Growth

- Do all major planning in the off season
  - On farm research layout and analyses
  - Hybrid selection
  - Machinery decisions
  - Rental arrangement negotiations
    - Time to understand fields/farms interested in
    - Field size, shape, and location matters
  - Financial planning and loan applications
- Don't "go to Florida," but rather use this time for detailed in-depth analyses and planning
- Do the planning WITH the relevant employees

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## Rapid Growth – Data

- Automate data collection (less hands-on)
  - Precision ag
  - Monitor from a distance (grain bins, irrigation)
  - Effective software or spreadsheets?
- Automate controllers (less time deciding)
  - Fertilizer, seeding (precision ag)
- We're not particularly optimistic about integrating economic and agronomic data in software – maybe just hire more office help

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## Rapid Growth – Logistics

- Progression of field operations?
- Big machines – a lot of time not running
  - Think of moving from field to field
  - Do pickups have hitches?
- Maps for all involved?
  - Employees, custom operators, etc.
- In-field efficiency
  - Boom-section shutoffs?
  - Field size and shape matters
    - Winter analyses will guide your decisions here

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## Rapid Growth – Communication

- Embrace the new ways
  - email, cell phones, text messaging, web
  - Business band radios?
  - Wireless internet on the tractor?
- Email each other on the farm
  - Saves repeating the story over and over when folks cannot always be together
  - Eliminates errors
- Email business associates for same reasons
- Have other big farms in your email list!

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## Rapid Growth – Landlords

- Newsletters?
- Website?
  - Password protected perhaps (for specific folks)
  - Lots of pictures
- Stay flexible
  - Many landlords will better appreciate a hardcopy letter or a personal visit (know your landlord!)

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## Rapid Growth – Keeping up

- The agronomics cannot suffer
  - If you get behind, hire it done, but be sure possible arrangements have been made
- Do not pinch pennies and over-analyze in-season
  - Trust that the few bad seat-of-the-pants instinctual decisions made to keep things moving won't negate the careful planning done in the off-season
    - Applies also to opportunities that arise then

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## Rapid Growth – How to Get There?

- Low tech
  - Hire many low-paid immigrants
  - Typical of livestock, where jobs clearly defined
  - Typical of past crop farms with simple machines
- High tech
  - Hire fewer, higher-paid, more manager types
  - Partnering relationships with high-paid folks
  - More typical of today's crop farms

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## Rapid Growth – How to Get There?

- Higher-than market rents
- Excellent reporting to banks, investors, employees, and landlords
- Pay high wages and think of perks
  
- Social issues
  - Emphasize that employees are good citizens and often better off than before
  - Talk about acres or dollars per person involved
    - Often you're all just employees
  
- Only go there if you love people!

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## Questions ???



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