Analyzing Your Business: How do you know where you stand?

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Knowing where your business stands …

- **Benchmarking (internal and external)**
  - **Internal benchmarking – how has your business been doing over time?**
  - **External benchmarking – how does your business compare with your competitors?**
- **Without benchmarking it is difficult to know how your business might fare in the future**
  - **Strengths of business to capitalize on**
  - **Weaknesses of business to improve upon**

Benchmarking…

- **Businesses generally fail to adequately benchmark for one of two reasons**
  1. **They don't know their own numbers (internal)**
  2. **They don't know averages (external)**

Which is worse?

Some background information

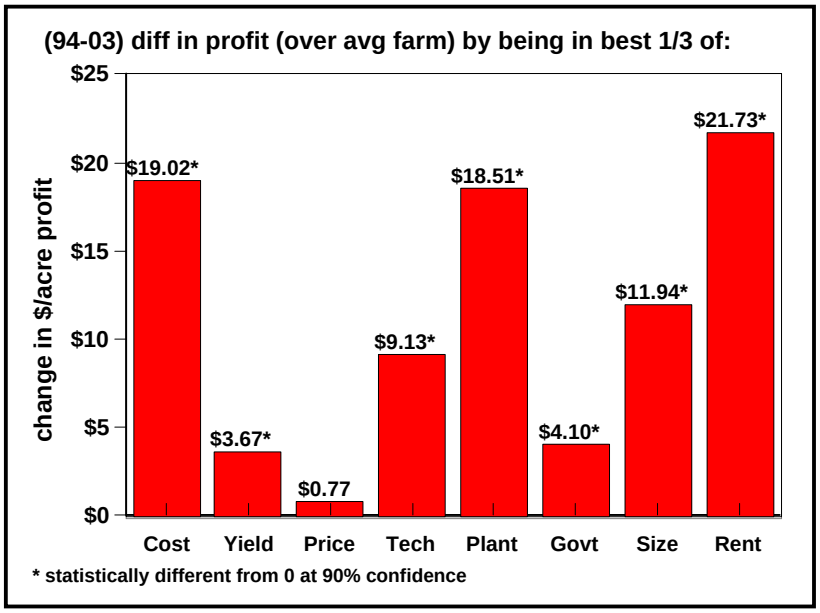
Profit is not a zero sum game

- If you make your clients profitable then you will be profitable
- So, you'd better know what makes your clients profitable

Good Management

- A well-managed firm is one that consistently makes greater profits than competing firms in the industry.
- In production agriculture, profitability has to do with persistently having higher profits than similarly structured neighboring farms.
- So, what management traits matter? What makes farmers more profitable than their neighbors?

Study of ~1000 farms in KFMA at Kansas State University



Cost is a large driver of profit; technology matters; but also size and renting more

Low- vs High-Profit Groups in Illinois
(1995-2000 average return – Source: University of Illinois)

Trait/category	Low quartile	High quartile
Total acres	672	1,007
Owned	171 (25%)	74 (7%)
Share rent	311 (46%)	789 (78%)
Cash rent	190 (28%)	144 (14%)
Total costs ($/A)	$430	$340
Land	133	98
Power	71	55
Buildings	23	19
Labor	50	30
Variable inputs	99	92
Other	54	46
Yield (bu/A)		
Corn	148	160
Soybeans	47	50
Prices ($/bu)		
Corn	$2.48	$2.50
Soybeans	$6.25	$6.02

cost matters

yield matters

price does not

Difference between the High 1/3 and Low 1/3 farms ranked on return to management
Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2001-2003

	(High 1/3 less Low 1/3)				
	Corn	Sorghum	Wheat	Soybean	Alfalfa
Number of farms	105	194	327	170	57
Enterprise acres	284	224	310	215	47
Yield per acre, bu or ton	**11.8**	**6.5**	**6.5**	**4.8**	**0.7**
Price per bu or ton	**$0.02**	**-$0.06**	**$0.09**	**-$0.01**	**$7.94**
INCOME ($/acre)					
Crop income	$8.83	$2.81	$18.44	$16.97	$91.32
Gross income	**$2.62**	**$10.25**	**$19.78**	**$21.04**	**$89.39**
COSTS ($/acre)[1]					
Seed	-$1.77	-$2.24	-$0.71	-$1.95	-$5.18
Fertilizer	-$11.04	-$8.10	-$3.28	-$0.91	-$3.23
Herbicide-insecticide	-$6.70	-$3.40	-$1.20	-$4.78	-$0.96
Crop insurance	$0.23	-$0.02	-$0.30	-$0.02	-$0.02
Machinery	-$37.33	-$22.76	-$20.21	-$26.16	-$37.70
Other	-$11.06	-$10.08	-$9.30	-$9.53	-$16.30
Land	-$13.11	-$9.29	-$7.74	-$5.34	-$2.99
Interest	-$8.50	-$6.47	-$3.72	-$8.67	-$9.45
Total Cost	**-$89.28**	**-$62.37**	**-$46.46**	**-$57.36**	**-$75.84**
Net Return to Management	**$91.29**	**$73.01**	**$65.97**	**$78.23**	**$165.55**

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

Yield matters somewhat, price does not (except alfalfa), cost is very important

How important are farm machinery costs for Kansas farmers?

Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2001-2003

	Corn	Sorghum	Wheat	Soybean	Alfalfa	
Number of Farms	105	194	327	170	57	Total Ac
Average Acres	328	318	585	327	103	1,660
Costs, $ per Acre						Wtd Avg
Seed	$26.07	$8.76	$5.75	$21.69	$8.15	$13.62
Fertilizer	32.42	20.12	17.08	3.86	8.75	17.57
Herb-Ins	22.35	18.78	4.55	16.93	10.73	13.61
Crop Ins	5.05	3.08	3.45	3.98	0.16	3.59
Machinery	**68.90**	**53.39**	**54.88**	**62.21**	**79.03**	**60.30**
Other	19.15	15.90	15.68	17.93	20.84	17.17
Land	35.40	17.39	20.50	25.31	39.05	24.94
Interest	17.90	12.52	11.17	14.83	16.06	13.78
Total Cost	$227.24	$149.93	$133.05	$166.74	$182.76	$164.59
Machinery, %	**30.3%**	**35.6%**	**41.2%**	**37.3%**	**43.2%**	**36.6%**

Note – A portion of interest cost should also be allocated to machinery costs
Costs reflect operator's costs on owned and rented land

Machinery costs are important in explaining profitability differences across farms …

Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2001-2003

	Corn	Sorghum	Wheat	Soybean	Alfalfa	
Machinery Costs, $/acre						Wtd Avg
High profit farms	$54.32	$42.85	$47.58	$50.04	$61.30	$49.35
Mid profit farms	$60.73	$51.68	$49.26	$60.38	$76.77	$55.76
Low profit farms	$91.65	$65.61	$67.79	$76.19	$99.00	$75.38
High less low, $	**-$37.33**	**-$22.76**	**-$20.21**	**-$26.16**	**-$37.70**	**-$26.03**
High less low, %	**-40.7%**	**-34.7%**	**-29.8%**	**-34.3%**	**-38.1%**	**-34.5%**
Differences between high profit farms and low profit farms in …						
Net returns	**$91.29**	**$73.01**	**$65.97**	**$78.23**	**$165.55**	**$80.90**
Total costs	**-$89.28**	**-$62.37**	**-$46.46**	**-$57.36**	**-$75.84**	**-$61.92**
Cost/net returns	**97.8%**	**85.4%**	**70.4%**	**73.3%**	**45.8%**	**76.5%**
Mach/total costs	**41.8%**	**36.5%**	**43.5%**	**45.6%**	**49.7%**	**42.0%**
Mach/net returns	**40.9%**	**31.2%**	**30.6%**	**33.4%**	**22.8%**	**32.2%**

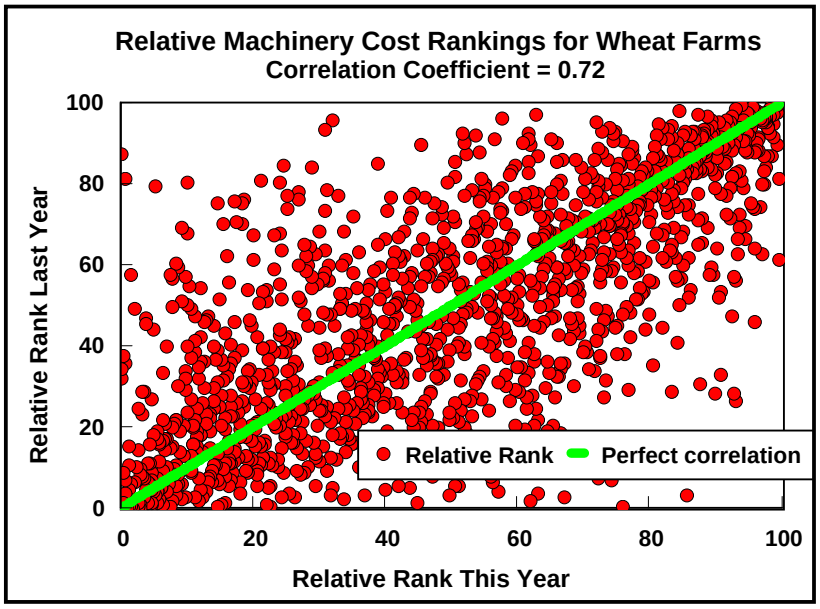
Why learn about machinery costs?

- **Selecting Profit-maximizing Crop Mix**
  - **must prorate to crops**
- **Dealing with Technological Change (no-till)**
  - **alternative systems use machinery differently**
- **Benchmarking**
- **Banking (tracking market value & deprec.)**
- **Minimizing Costs of Production**
  - **owning vs. leasing vs. custom hire**
  - **optimal trade decisions**

- **How do machinery costs impact revenue?**

-- Is it any different for custom operators?

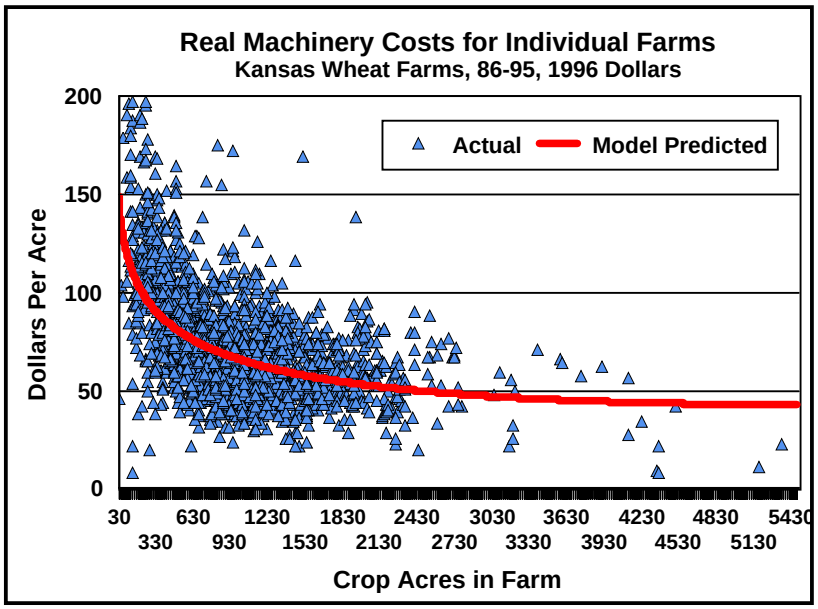
Another reason to know your machinery costs …



Relative machinery costs are somewhat repeatable

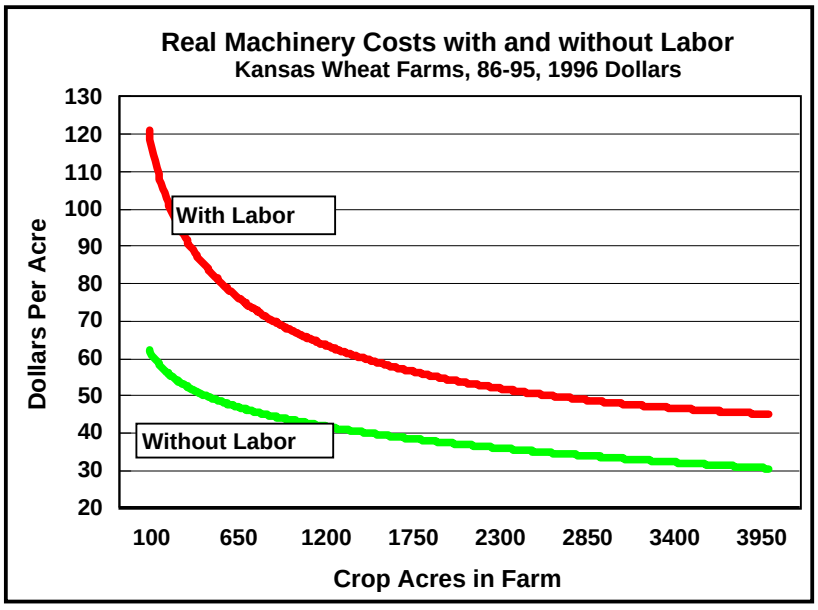
Machinery costs …

- Differences are important in explaining profitability differences
- Relatively persistent from year to year
- So why do some producers consistently have lower machinery costs?
  - Farm size
  - Management
  - ???



No large farms have high machinery cost

15



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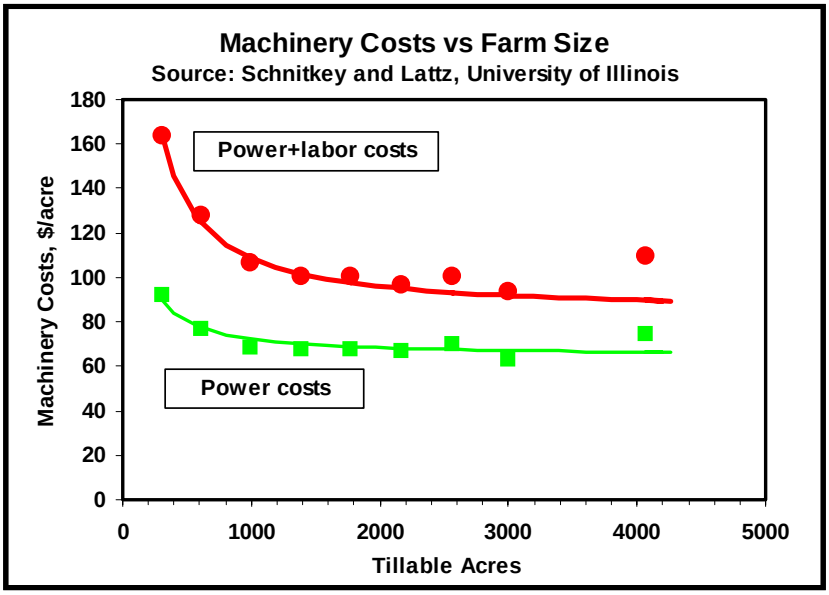

Pattern is very similar to Kansas data

Machinery costs are highly variable across farms …

Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2001-2003

	Corn	Sorghum	Wheat	Soybean	Alfalfa	
Number of Farms	105	194	327	170	57	
Average Acres						Total Ac
High profit farms	481	432	692	443	112	2,160
Mid profit farms	306	313	679	310	130	1,739
Low profit farms	196	208	382	228	66	1,080
Machinery Costs, $/acre						Wtd Avg
High profit farms	$54.32	$42.85	$47.58	$50.04	$61.30	$49.35
Mid profit farms	$60.73	$51.68	$49.26	$60.38	$76.77	$55.76
Low profit farms	$91.65	$65.61	$67.79	$76.19	$99.00	$75.38
High less low, $	**-$37.33**	**-$22.76**	**-$20.21**	**-$26.16**	**-$37.70**	**-$26.03**
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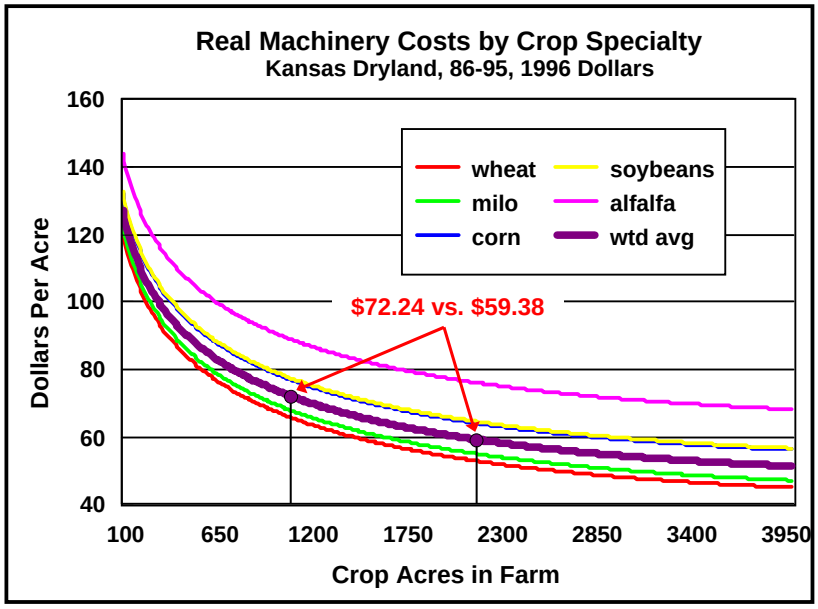


Benchmarking …

- Profitability (ROA, ROE) is the ultimate measure to benchmark
- Because cost is a big driver of profitability differences, benchmarking on costs is an important task when targeting improvement
- Discussion here will specifically relate to machinery costs and external benchmarking

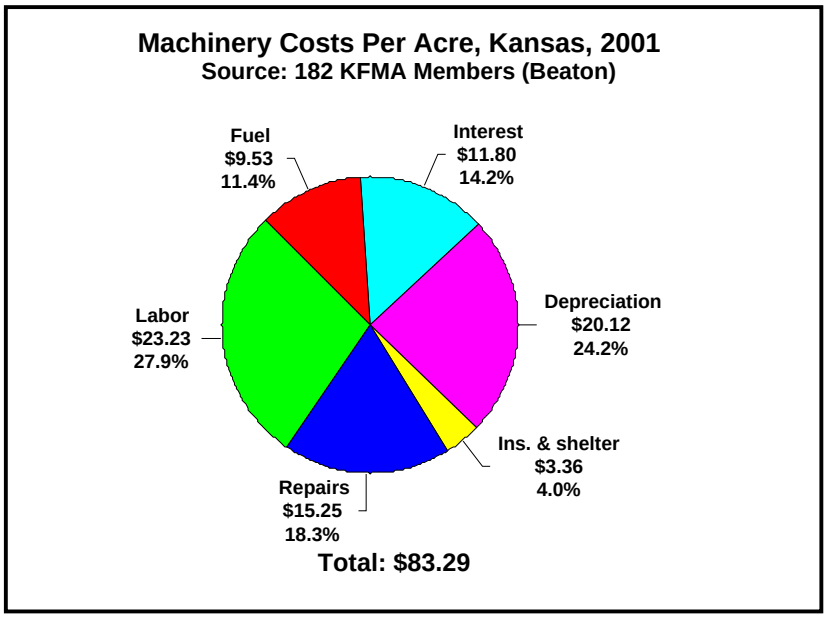
Crop Machinery Investment, Kansas, 2003, $/a

2003					$custom-to-mkt
	as is	as is	'"if don't hire custom work"		investment
	/cropland	/crop	/cropland	/crop	factor
NW	$87	$117	$104	$139	1.9
SW	$90	$135	$106	$159	1.7
NC	$117	$117	$131	$131	1.6
SC	$123	$128	$141	$147	1.9
NE	$145	$146	$156	$157	1.7
SE	$149	$130	$164	$143	1.8
KS	$119	$128	$134	$145	1.8

- People love to benchmark on machinery investment, but this should be done ***very*** cautiously
  - Level of operation or service provided differs
  - Investment is not necessarily a good indicator of cost
  - Benchmark units are not always the same (e.g., fallow acres)

Machinery cost categories

- Repair and maintenance
- Labor
- Depreciation (market, not tax depreciation)
- Interest (opportunity interest)
- Fuel and lubrication
- Taxes, insurance, and shelter
- Custom hire



Custom hire cost has been allocated to individual categories

Machinery Costs NW KS Wheat Enterprises

	KFMA 95	Farm A 97
Labor (hired & unpaid)	$17.23	$27.00
Gas/Fuel/Oil	$ 6.03	$ 7.57
Repair & Maintenance	$11.43	$ 9.19
Personal Property Tax	$ 0.53	$ 0.49
General Insurance	$ 1.97	$ 1.89
Utilities	$ 1.69	$ 1.48
Auto Expense	$ 0.72	$ 0.00
Economic Depreciation	$ 8.71	$12.91
Net Machine Hire	$11.93	$ 0.82
Interest (9% assign)	$ 8.97	$11.40
Total	$69.21	$72.75

Machine hire makes it hard to compare

Machinery Costs NW KS Wheat Enterprises

combine tax, insurance, utilities; prorate auto expense and machine hire

	KFMA 95	Farm A 97
Labor (hired & unpaid)	$21.08	$27.31
Gas/Fuel/Oil	$ 7.38	$ 7.66
Repair & Maintenance	$13.99	$ 9.29
Tax, Insurance, Shelter	$ 5.13	$ 3.90
Economic Depreciation	$10.66	$13.06
Interest (9% assign)	$10.97	$11.53
Total	$69.21	$72.75

Machinery Costs NW KS Wheat Enterprises

using custom rates (1997) approach

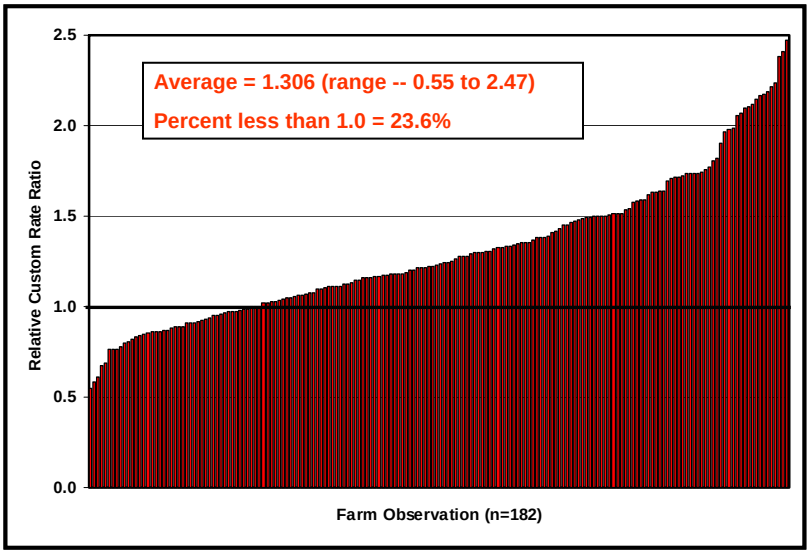
	# operations	$/operation
Undercutter (V-Blade)	4	$ 4.68
Offset Disk	1	$ 4.38
NH3 Application	1	$ 6.16
Drill	1	$ 5.61
Harvest 40 bu.	1	$19.87
Total		$54.74

Where's the rest of the costs? Or, is this what they should be?

Research comparing whole-farm costs with custom rates…

- Custom rates are an important benchmark
- Based on KFMA database and cooperator surveys for the year 2001
- Compare actual costs with what they might be expected to be, where expectations are based on published custom rates
- Custom rate ratio $= \dfrac{\text{Actual costs}}{\text{Expected costs}}$

Relative custom rate ratio

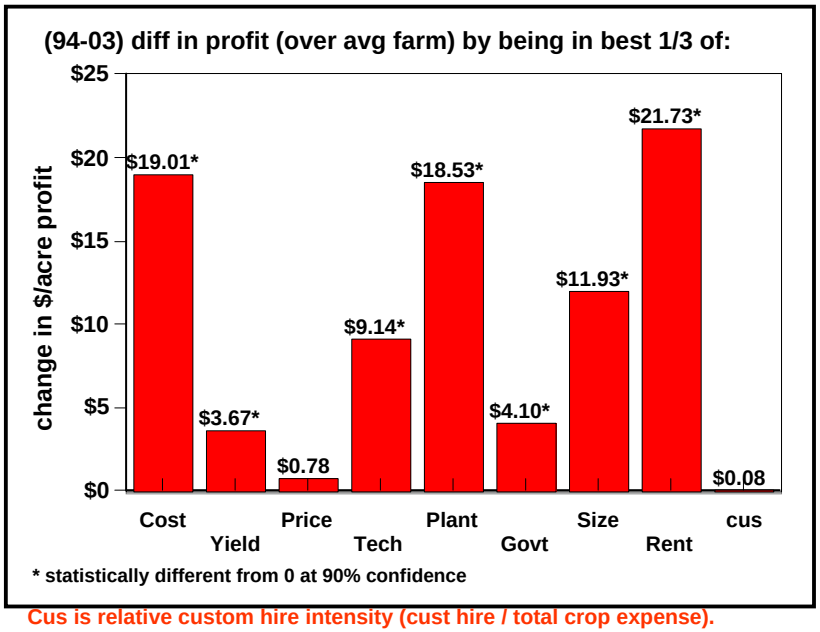


Conclusions of this reserach

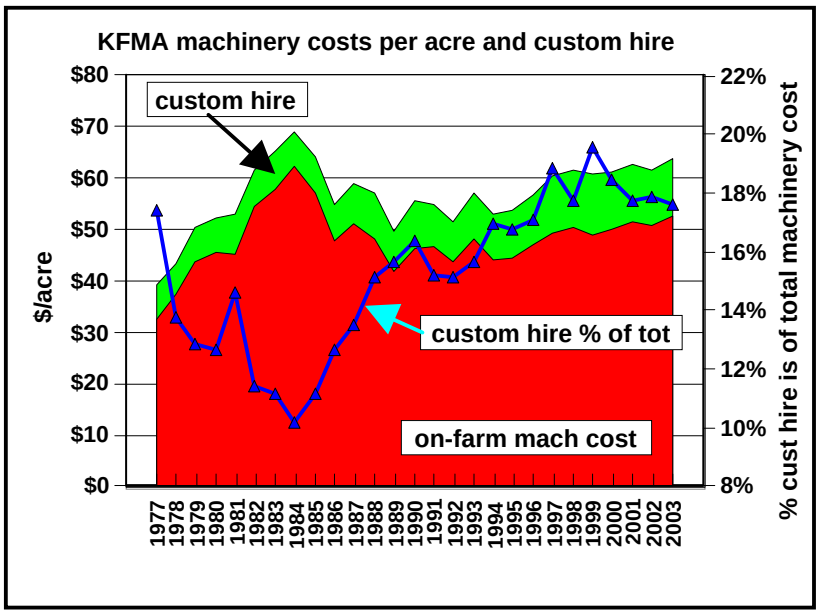
- Published custom rates need to be increased by approximately 25% (for a farm with 1,000 harvested acres)
- Economies of size exist (i.e., scale factor adjustment decreases as farm size increases)
- Thoughts…
  - Consider hiring it done
  - Consider the opportunity to do custom work
- Excel spreadsheet (*KSU-MachCost*) that can be used to estimate and benchmark farm specific machinery costs (at www.agmanager.info)

Implications for custom operators?

- It does appear many farms would be better off hiring farming operations rather than doing them in house
  - Is that really true?
- Are farms using more custom work today?
  - i.e., is the overall demand increasing?
- Are bigger or smaller farms hiring custom work?
  - Where is the best market segment?

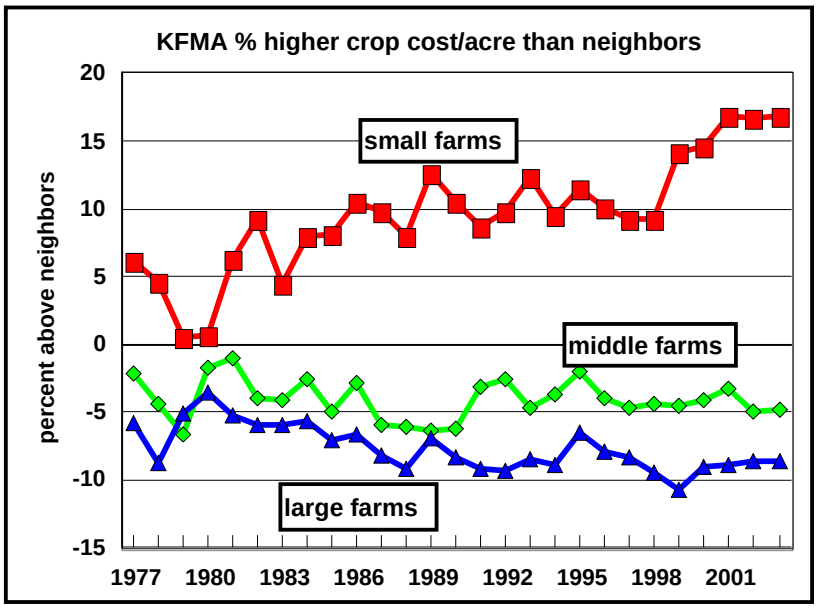


Cus is relative custom hire intensity (cust hire / total crop expense).
Custom hire doesn't of itself make you profitable.

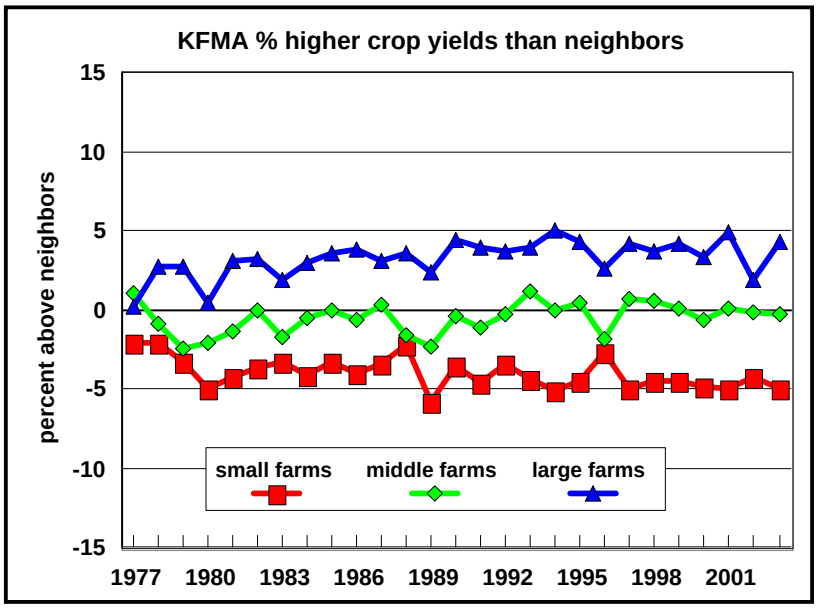


Maybe a slight temporal increase in demand for custom hire . . .

- **Some management features have showed trends over time related to big vs. small farmers**
- **Has that been true regarding custom hire?**

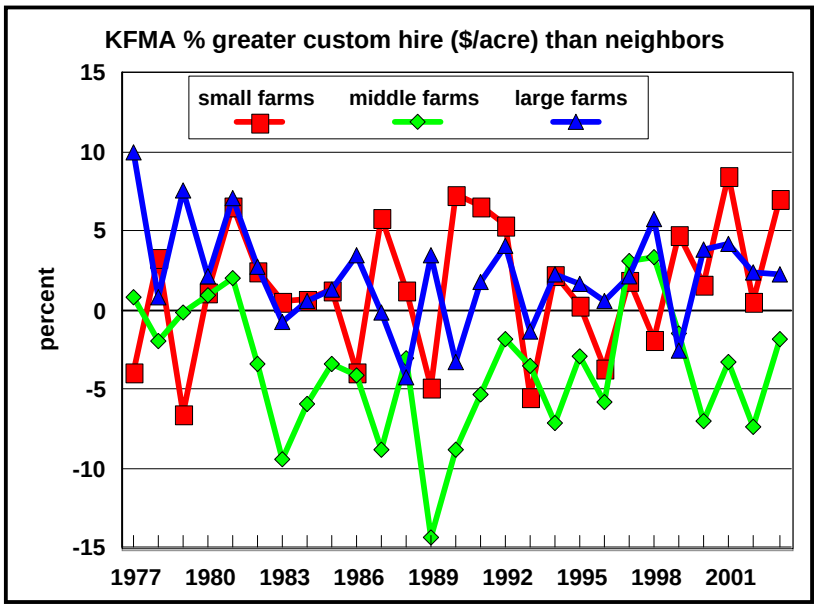


Example of one factor that showed a very distinct trend across farm size



Example of one factor that showed a smaller trend across farm size

35



Small and large farms tend to spend more $/acre in cust hire than avg size.

36

Additional thoughts on custom work

- Doug Karre, Frenchman Valley Coop (Dec 8)
  - Customers are small and big farms, not middle
  - Profitable in its own right; related seed and fertilizer sales is an added bonus
- We're wondering. . .
  - History showed cust hire by big and small farms
  - With increasing size-polarization of farms, the big and small will be all that's left – increased demand
- Things to consider:
  - Make custom services profitable in their own right
    - Not just machinery but also agronomic or other services
  - Keep thinking about bi-polarization

Make custom operations profitable in their own right …

- Custom operations are very similar to farms in that returns are highly variable between operations and cost management is very important (rates charged tend to be very competitive)
- In order to be profitable, you need to be better than average --- which leads to the importance of benchmarking

2003 Harvest Year Report for USCHI's Custom Harvester Analysis and Management Program (CHAMP)

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U.S. Custom Harvesters Inc. AgAnalysis+ JOHN DEERE

39

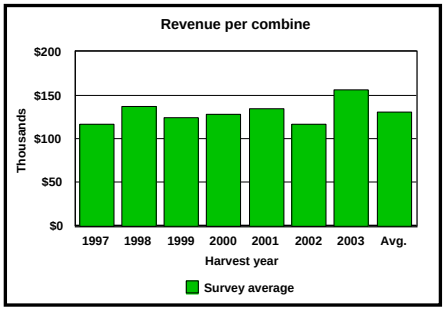
Development of CHAMP

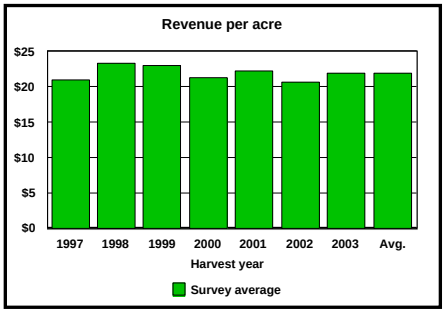
- Developed for two primary reasons
  - A service for individual harvesters to assist them with financial analysis of their operations (i.e., management aspect)
  - Develop benchmark data pertaining to the custom harvesting industry that can be used in lobbying efforts (i.e., policy aspect)
- Several individuals were instrumental in getting program started (i.e., somebody had to be the "first")

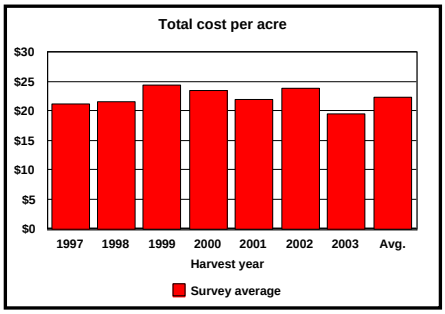
40

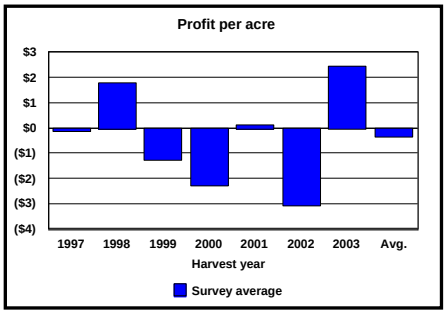
CHAMP: Over the years . . .

- **Participation 97-03: 43, 25, 25, 23, 20, 24, 21**
  - One forage harvester last two years (02 & 03)
- **Repeat members**
  - 20 of 21 2003 members participated in 2002
  - 10 members have participated all 7 years
- **Continually seek ways to improve analysis**
  - Learning curve associated with filling out forms
  - Better understanding of economic principles
  - Prior year asset values and balance sheet



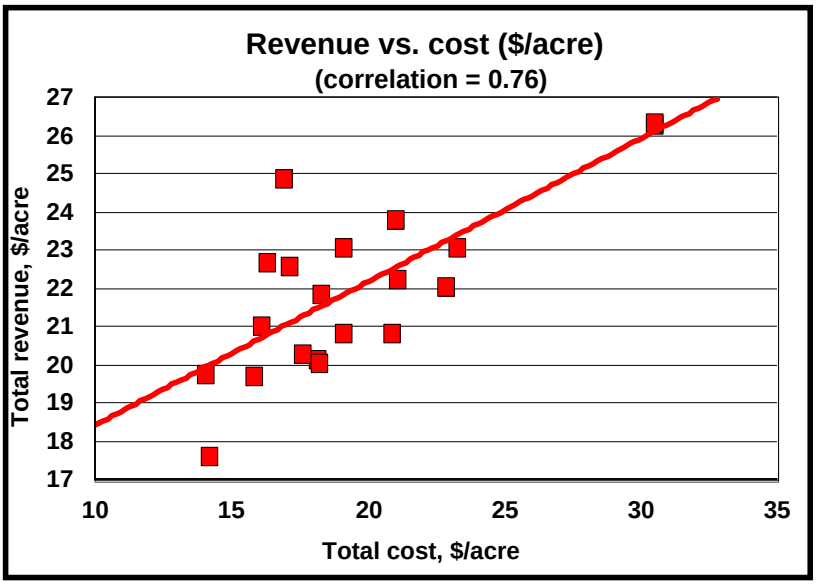




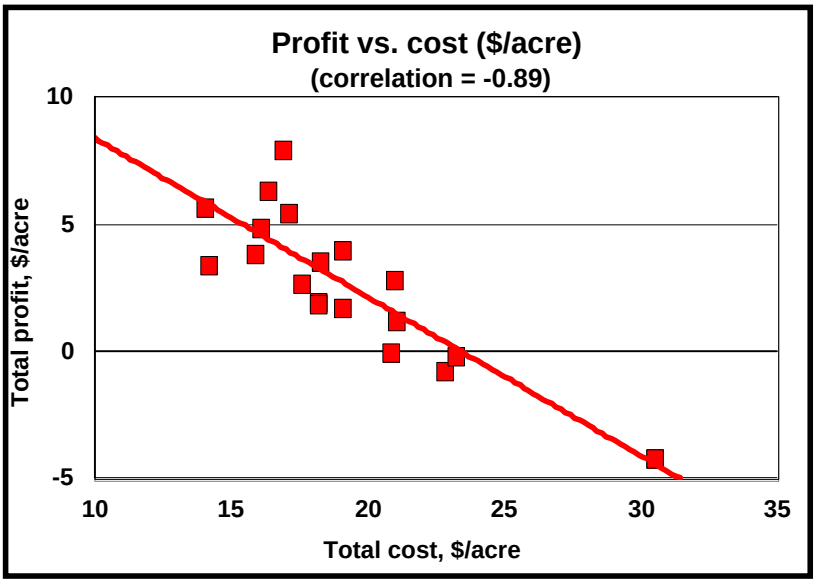


On average, custom harvesters have not been making a fortune

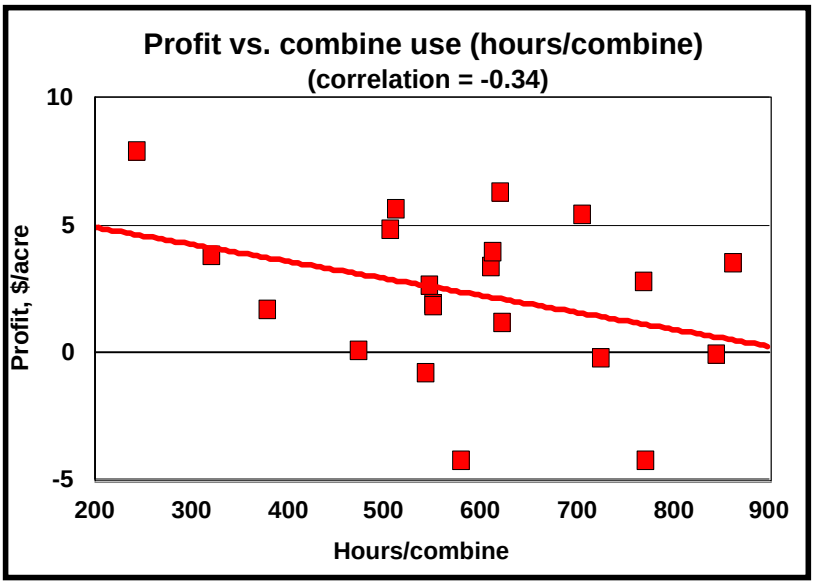
2003 harvest year results

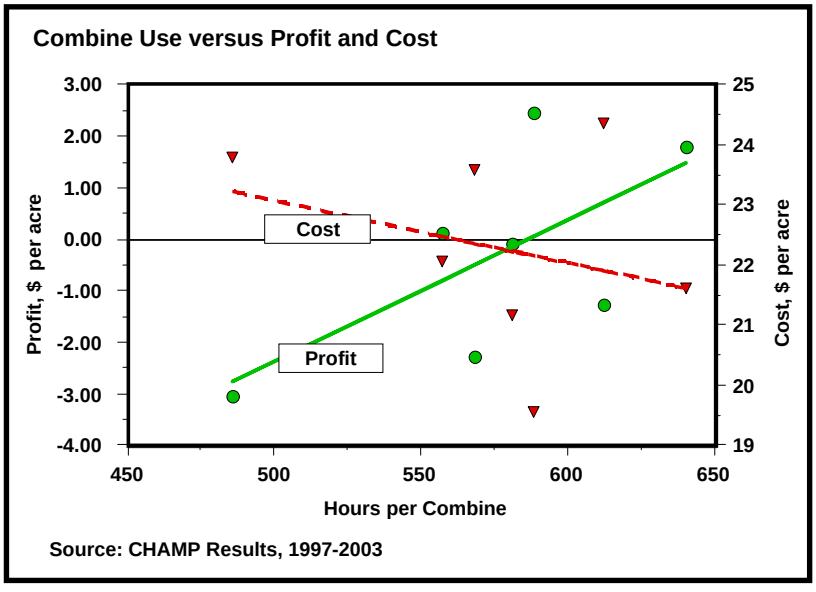


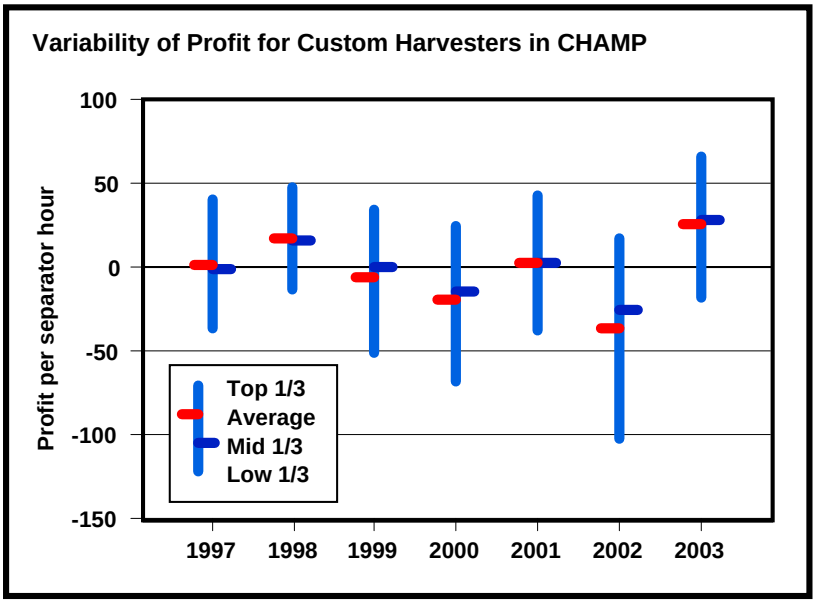
2003 harvest year results



2003 harvest year results

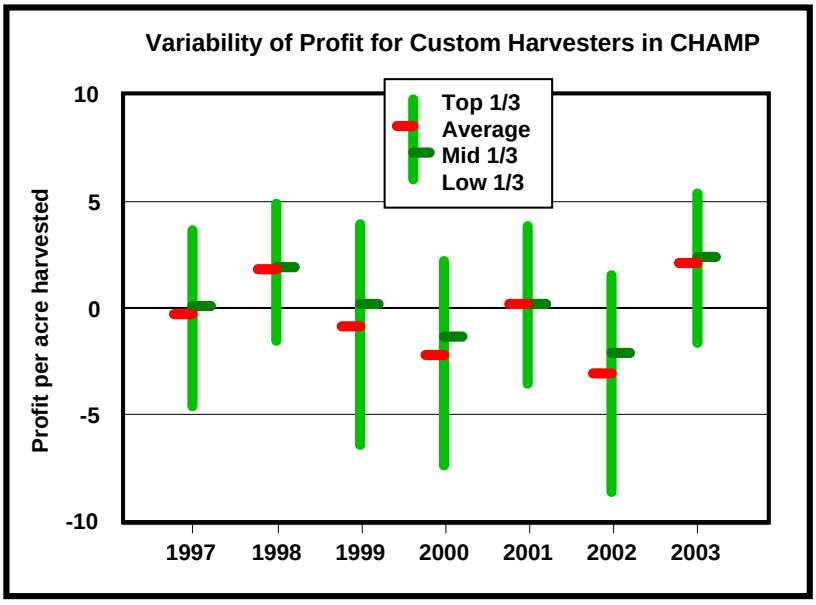






Considerable variability between top and bottom third operators

47



Considerable variability between top and bottom third operators

48

Some General Conclusions

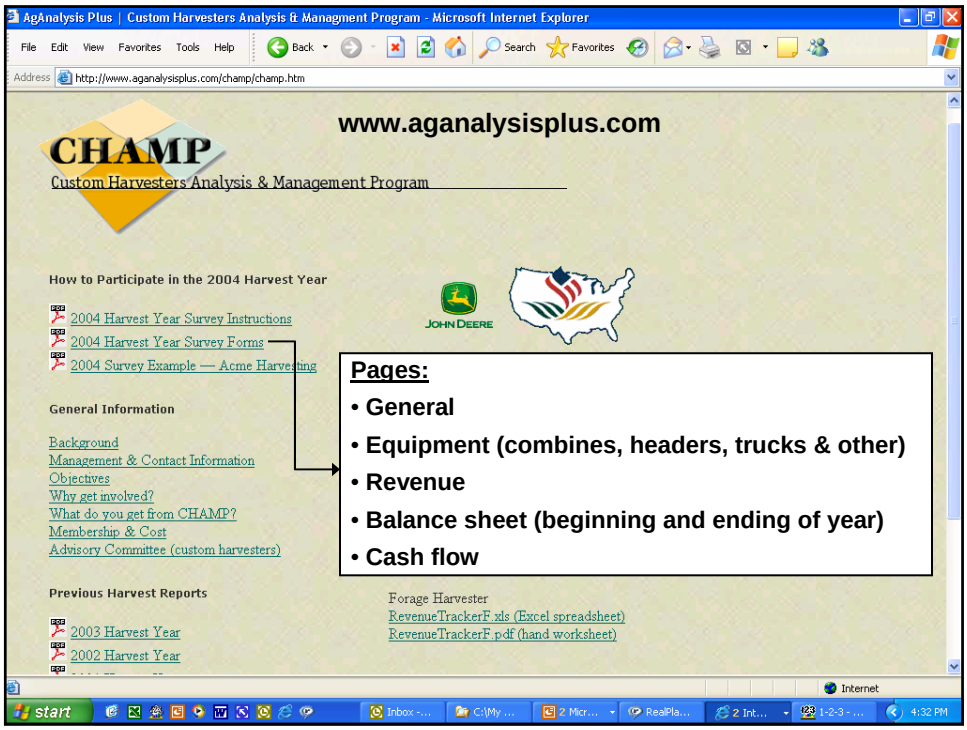
- Considerable variability between firms
  - 17 of 21 firms were profitable in 2003
  - (6/21 in 2002; 11/20 in 2001; 9/22 in 2000)
- Have not seen a strong relationship between profitability and age of equipment
- We have seen different management styles be successful (e.g., high vs. low hours, new vs. used equipment) indicating need for producers to recognize their strengths and weaknesses.

What do CHAMP participants have to do and what do they get in return?

- They have to
  - Fill out forms
  - Pay their share of cost
- They get
  - Report of their results comparing them to average (tables and graphs)
  - One-on-one consultation at USCHI annual convention (15-30 minutes)
  - Follow-up help as needed

CHAMP fees background

- **Cost of program**
  - **1997 (free)**
  - **1998-99**
    - **$150/participant – ½ by USCHI and ½ by participant**
  - **Starting with 2000 harvest year**
    - **John Deere has contributed a flat rate of $8,700/year**
    - **USCHI contributes $75/participant/year**
    - **Individual participant pays $150/year**



Custom Harvester Analysis and Management Program (CHAMP)
2003 Harvest Year
Individual Firm Report

Happy Harvesters Inc.
Box 999
Wheat Country, KS 99999

	Firm Value	Survey Average Value	Firm Value per Combine	Survey Avg. of Value per Combine	Firm Value per per Acre	Survey Avg. of Value per per Acre	Firm Value per per Hour	Survey Avg. of Value per per Hour
Number of Machines Operated	3.0	4.09	-----	-----	-----	-----	-----	-----
Value of Combines	$375,000	$477,660	$125,000	$116,338	$17.38	$17.20	$193.60	$204.79
Value of Platforms	$90,000	$107,256	$30,000	$26,312	$4.17	$3.89	$46.46	$45.51
Value of Other Equipment	$310,000	$419,037	$103,333	$104,006	$14.37	$15.03	$160.04	$180.76
Value of Other Assets	$75,000	$123,207	$25,000	$29,987	$3.48	$4.62	$38.72	$54.34
Total Assets	$850,000	$1,127,160	$283,333	$276,643	$39.39	$40.75	$438.82	$485.40
Total Acres Covered	21,579	29,519	7,193	7,052	1.0	1.0	11.14	12.10
Combine Rent Acres	500	1,118	167	131	0.023	0.018	-----	-----
Small Grains Percent	78.4	76.5	-----	-----	-----	-----	Combine Efficiency	
Total Fields Harvested*	154	226	51.3	56.8	140.1	150.8	sep hrs/engine hrs	
Total Separator Hours in 2003	1,937	2,460	646	588	0.090	0.084	74.8%	76.3%

JOHN DEERE

U.S. Custom Harvesters Inc.

			% of Total Revenue	
INCOME AND EXPENSE			Firm	Survey Avg.
Harvest Revenue	$465,240	$621,613	98.3%	97.0%
Combine Rent Revenue	$4,167	$11,380	0.9%	0.8%
Other Revenue	$3,850	$13,777	0.8%	2.2%
Total Revenue	$473,257	$646,769	100.0%	100.0%
Labor (paid and unpaid)	$101,588	$134,631	21.5%	20.3%
Travel	$18,322	$23,706	3.9%	3.8%
Fuel and Lubrication	$53,945	$66,652	11.4%	10.3%
Repair and Maintenance	$48,218	$64,182	10.2%	10.2%
Insurance	$27,038	$31,594	5.7%	5.0%
Telephone and Utilities	$9,488	$9,881	2.0%	1.6%
Other Expenses	$32,863	$44,697	6.9%	6.7%
Market Depreciation	$92,755	$128,006	19.6%	19.5%
Interest on Assets (assigned)	$53,651	$71,145	11.3%	11.7%
Total Expense	$437,868	$574,495	92.5%	88.9%
Total Operating Profit	$35,389	$72,274		

Debt-to-Asset Ratio (end of year)	38.7%	41.9%	
Return on Assets	10.5%	13.3%	
Return on Equity (based on IS)	13.1%	xxx	<=== Operating profit + interest charged on equity divided by beginning of year equity.
Return on Equity (based on BS)	9.4%	xxx	<=== Change in balance sheet equity divided by the beginning of year equity.
Expense/$100 Revenue	$92.52	$88.87	

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* Value used per acre for Total Fields Harvested represents the average field size in acres.
Note: Some reported values were modified from those reported on the survey due to arithmetic and other data entry errors.

BALANCE SHEETS PAGE (schedule D)

Balance sheet for custom harvesting business only, 2003 (read the footnotes)

Happy Harvesters Inc.
Box 999
Wheat Country, KS 99999

ASSETS (market value)	beginning 01/01/03	end 12/31/03
Current Assets	$	$
Cash on hand & in checking	4,600	6,850
Savings, bonds, stocks, etc.	14,300	15,800
Accounts receivable	2,800	3,600
Supply inventories	3,600	4,500
Other current assets (specify)	0	0
D1. TOTAL CURRENT ASSETS	25,300	30,750
Non-current Assets		
Combines (from A1+B1, A2+B2)	503,000	437,350
Non-combine equipment (from C1, C2)	315,000	289,800
Market value of business real estate (i.e., office, storage bldgs., etc.)	45,000	50,000
D2. TOTAL NON-CURRENT ASSETS	863,000	777,150
D3. TOTAL CUST. HARV. ASSETS (D1+D2)	888,300	807,900

LIABILITIES & OWNER EQUITY		beginning 01/01/03	end 12/31/03
Current Liabilities		$	$
Accounts payable		1,200	2,200
Short term loans (due within 1 yr.)			
	principal outstanding	15,300	12,750
	accrued interest	377	314
Other current liabilities (specify)		0	0
D4. TOTAL CURRENT LIABILITIES		16,877	15,264
Non-current Liabilities			
Long term loans (due beyond 1 yr.)			
	principal outstanding	305,000	295,000
	accrued interest	2,820	2,728
Other non-current liabilities (specify)		0	0
D5. TOTAL NON-CURRENT LIABILITIES		307,820	297,728
D6. TOTAL CUST. HARV. LIABILITIES (D4+D5)		324,697	312,992
D7. TOTAL CUST. HARV. NET WORTH (D3-D6)		563,603	494,908
	Change in equity =====>		(68,695)

JOHN DEERE

U.S. Custom Harvesters Inc.

TOTAL EQUITY (custom harvesting and outside businesses)

		01/01/03	12/31/03
Investments in other businesses (such as a farm) and non-business investments (such as your residence). Report only the NET investment, which is assets less liabilities (net worth), for these investments:	D8.	120,000	130,000
Overall equity or net worth for whole business (D7+D8)	D9.	683,603	624,908
	Change in equity =====>		(58,695)

In balance sheet above, except for D8 and D9, values are those assigned to ONLY the CUSTOM HARVESTING BUSINESS. If you run multiple businesses within your overall business, without tracking assets and liabilities accordingly, you will need to prorate proper values to the custom harvesting business. All values are market values, not income tax basis values.

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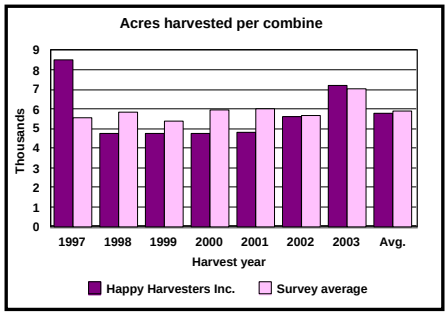
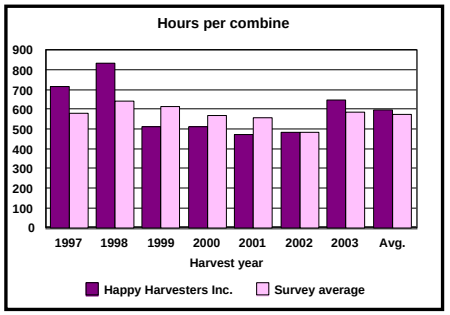
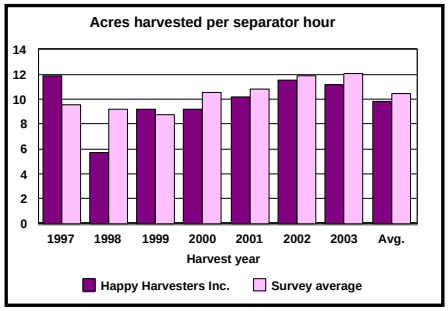
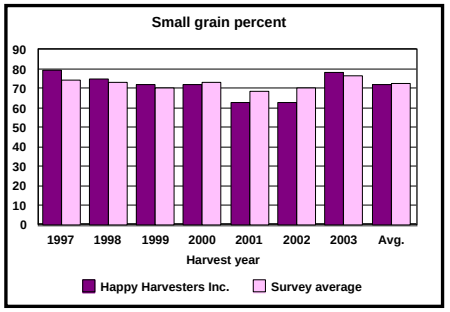
Historical Trends of Key Variables -- Individual harvester vs survey average



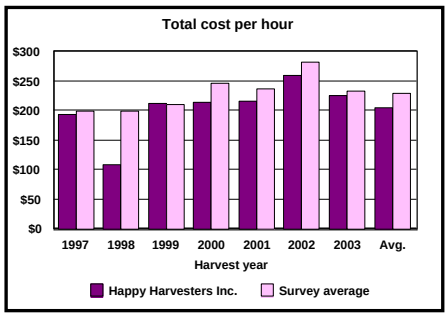


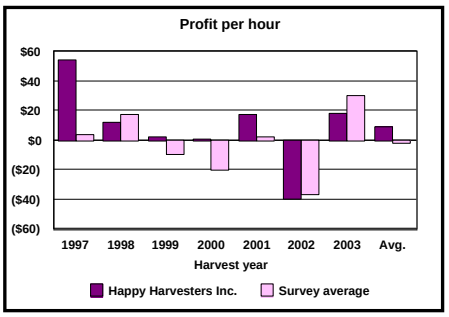


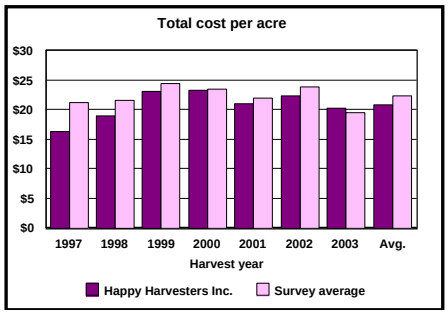


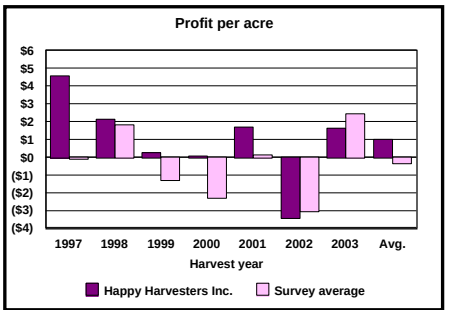
55

Historical Trends of Key Variables -- Individual harvester vs survey average



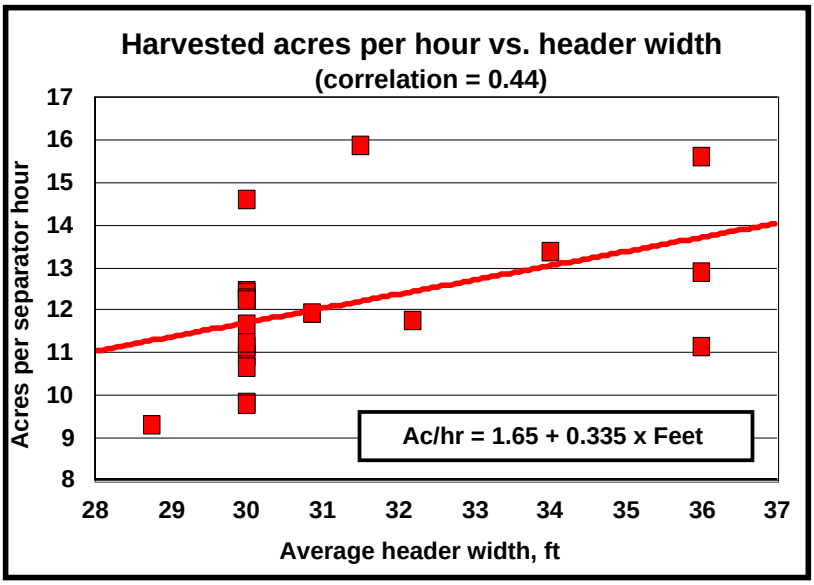




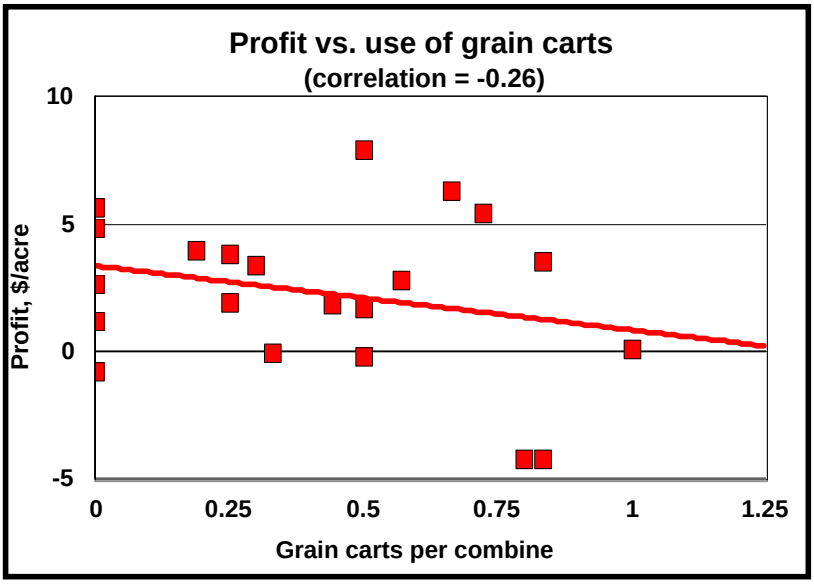


56

Example of analysis based upon request from individual



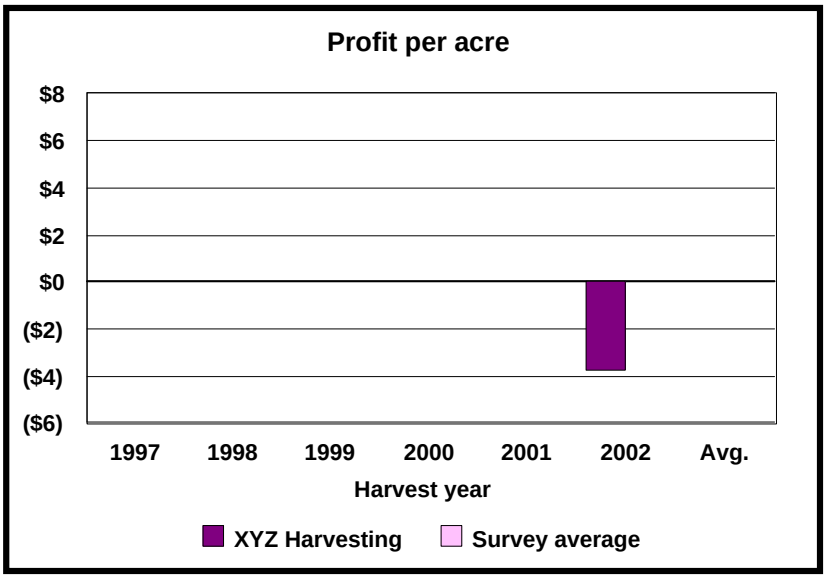
Example of analysis based upon request from individual



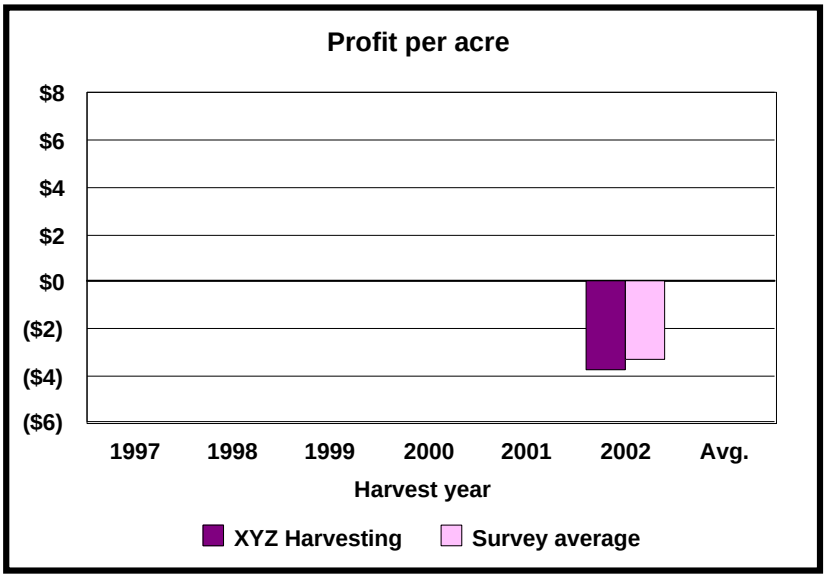
How are individual harvesters using their CHAMP information …

- Benchmarking
  - Compared to other harvesters
  - Compared to themselves over time
- Communicating with their customers
- Communicating with their lenders
- To make management decisions

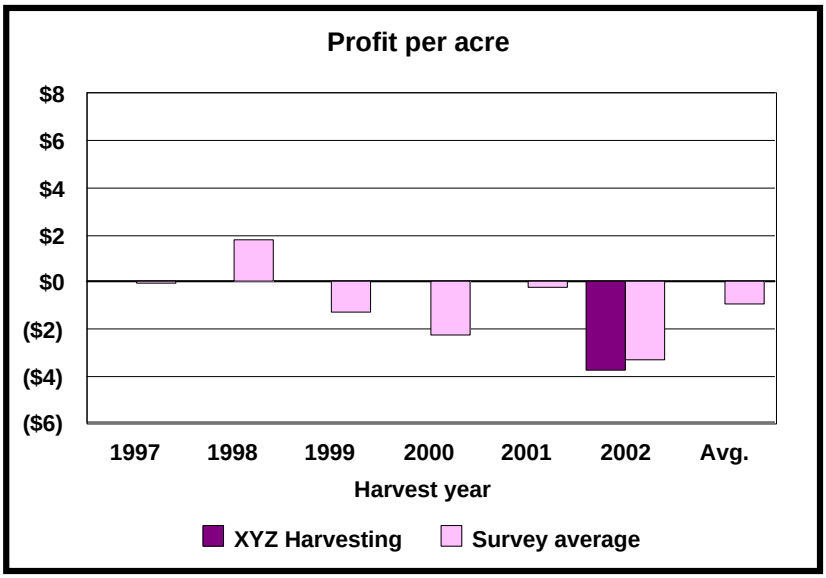
What would you think of this harvester?



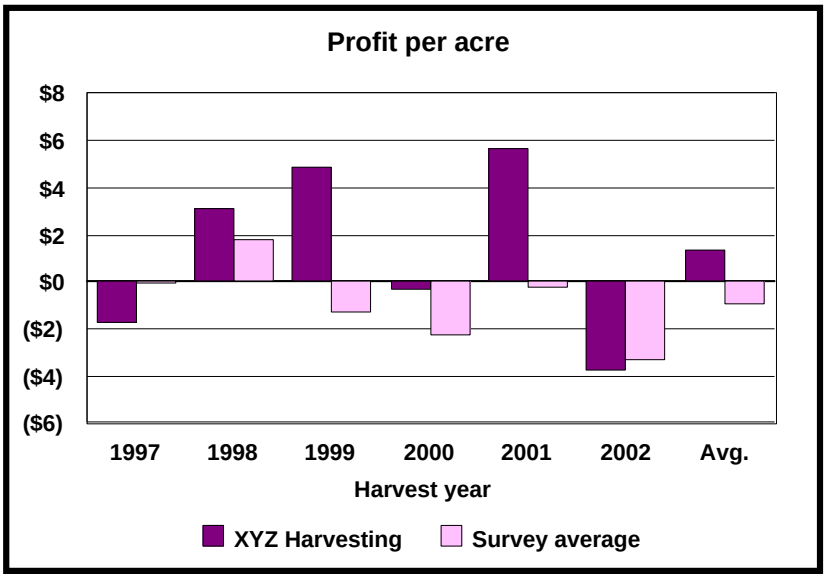
What would you think of this harvester?



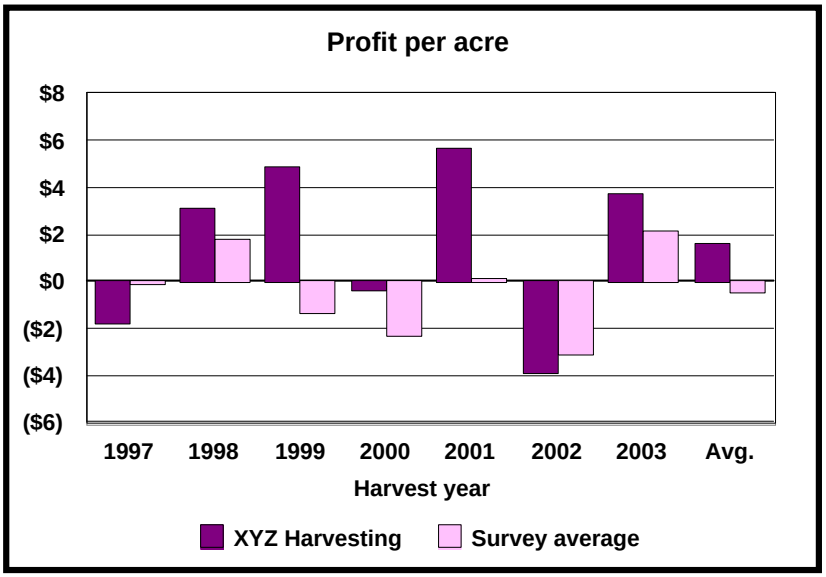
Where is this industry headed?



What is the future of this harvester?



What is the future of this harvester?



How is USCHI using the CHAMP information …

"This compensation was only brought to fruition through the combined efforts of the US Custom Harvesters and the reliable and provable numbers gleaned from the CHAMP program."

Tim Baker, USCHI operations manager, referring to the Karnal Bunt compensation that was finally approved by USDA (January 2005 issue of Harvest News).

Future of CHAMP

- Forage harvesters
- Software compatibility
- Spreadsheets
- Survey forms

- Need for program of this type?
- Free rider problem

Questions ???

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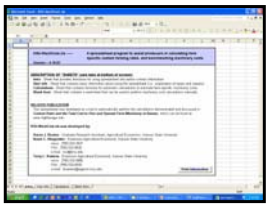
www.agmanager.info

Machinery Decision Tools at www.agmanager.info

OwnCombine.xls

OwnBaler.xls

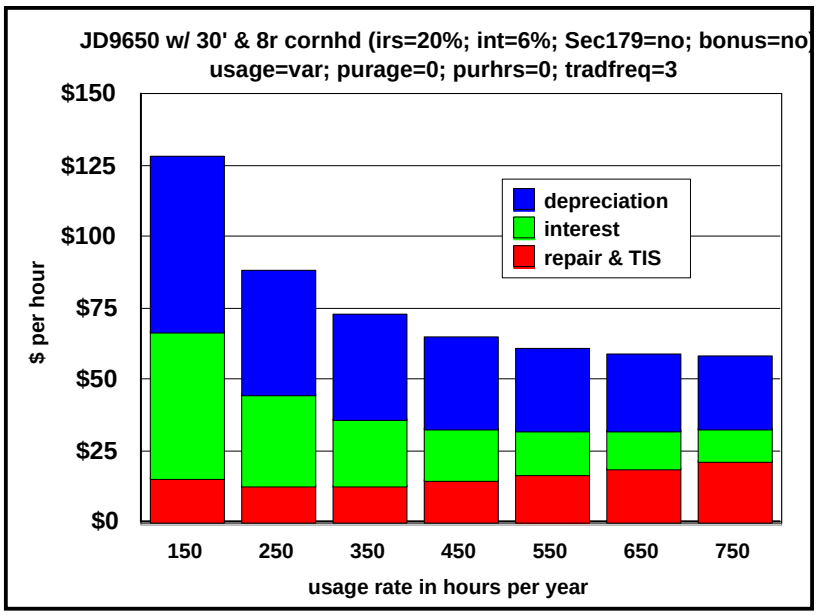
OwnSpray.xls



KSU-MachCost.xls

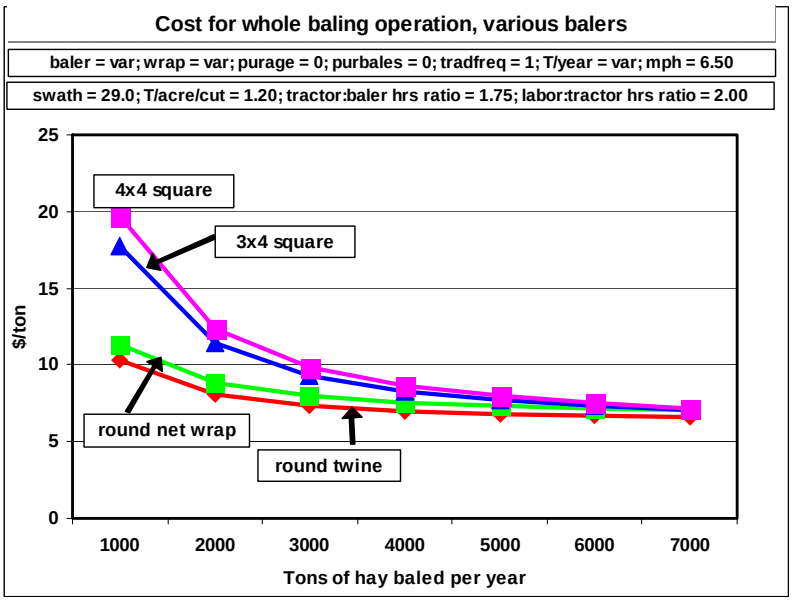
OwnTractor.xls

OwnCombine.xls



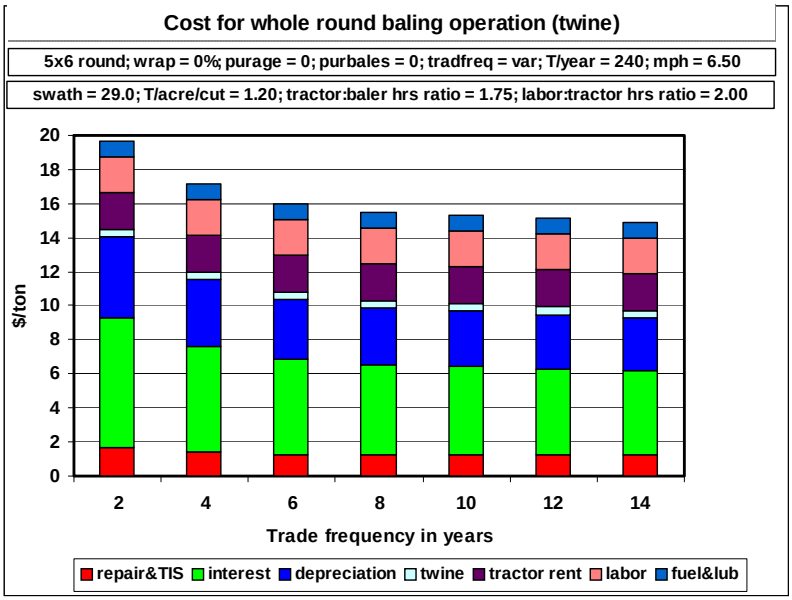
Putting on more hours per year really pays off.

OwnBaler.xls



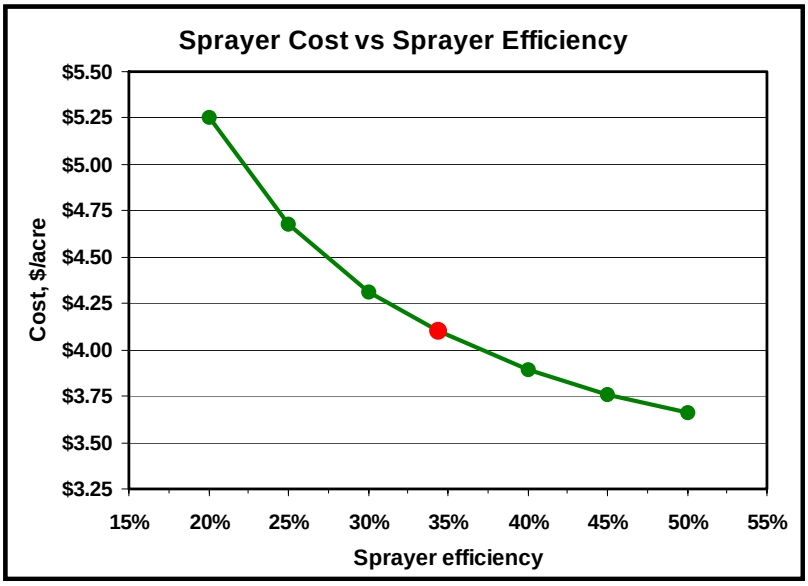
Matches approximately with custom rates in the 1500-2000 T/year range.

OwnBaler.xls



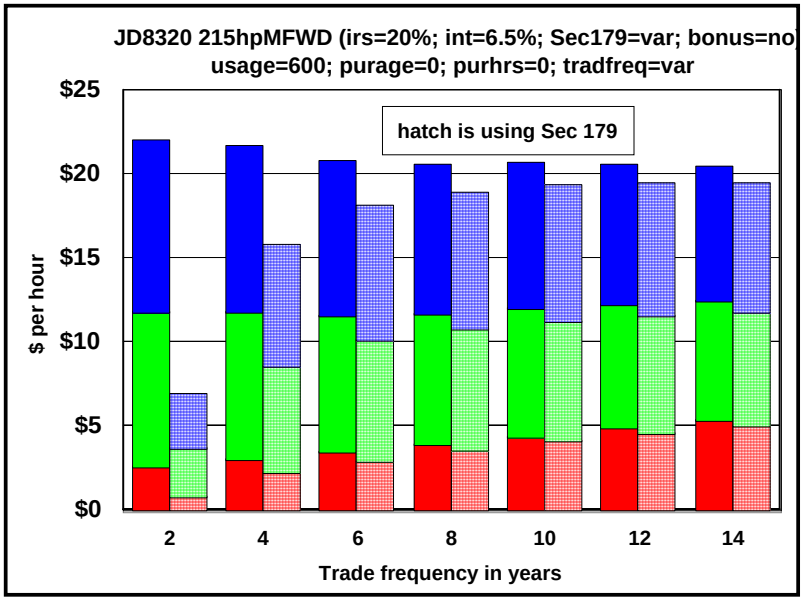
Costs seem high for this small (typical) hay operation starting with a new baler, but, really, sort of like Beaton's research showed.

OwnSpray.xls

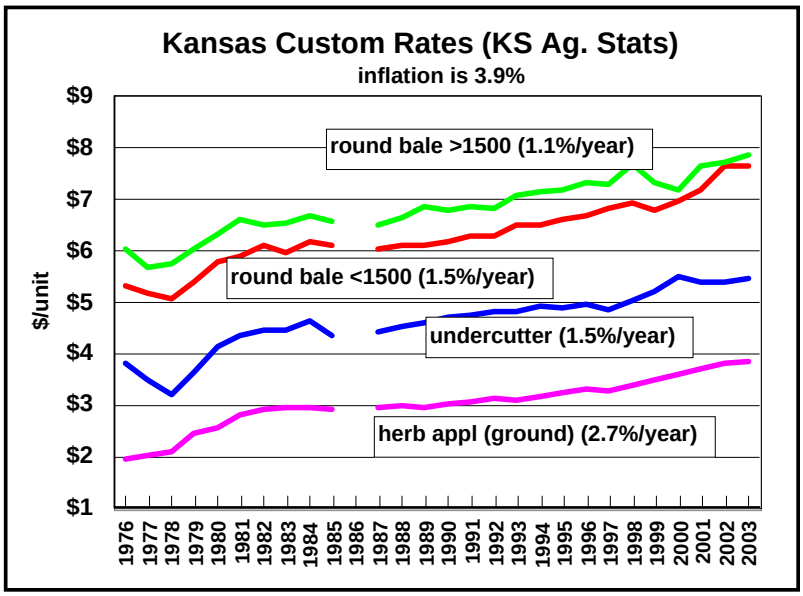


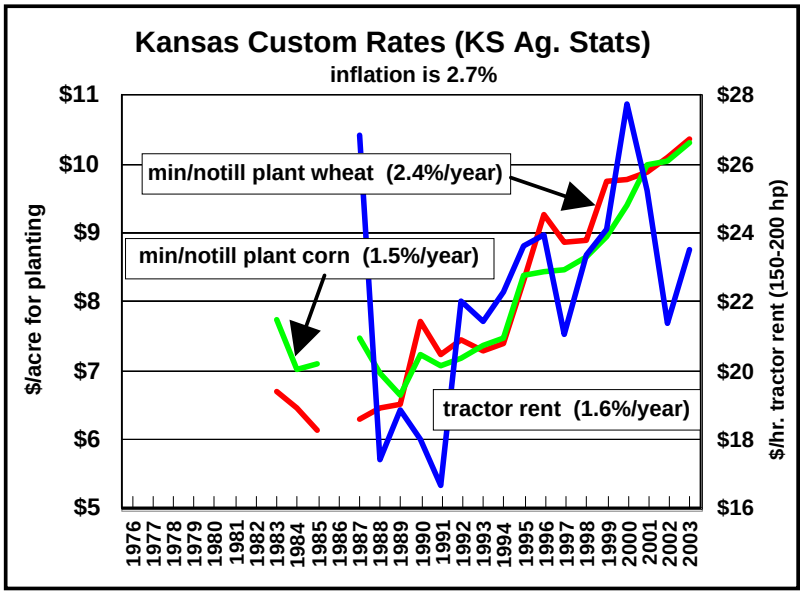
Efficiency of sprayer use has a big impact on cost

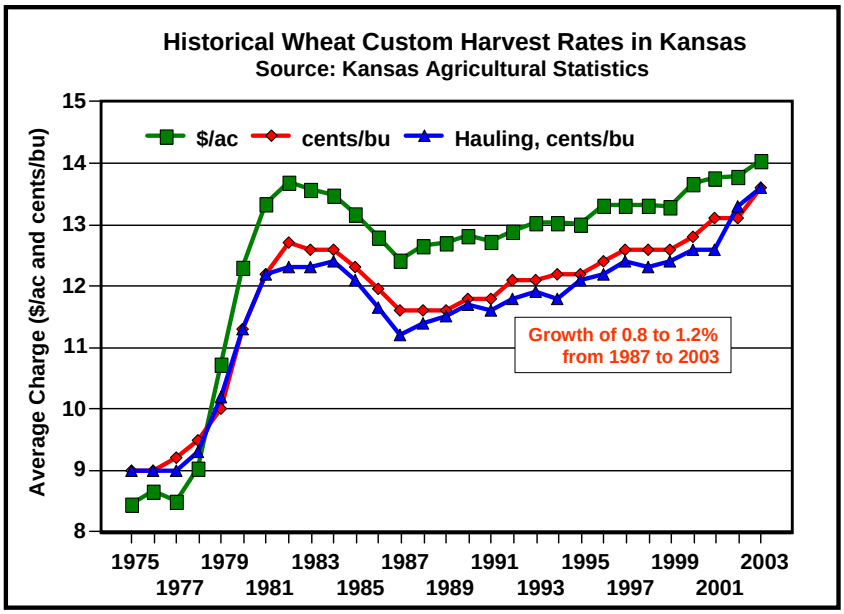
OwnTractor.xls



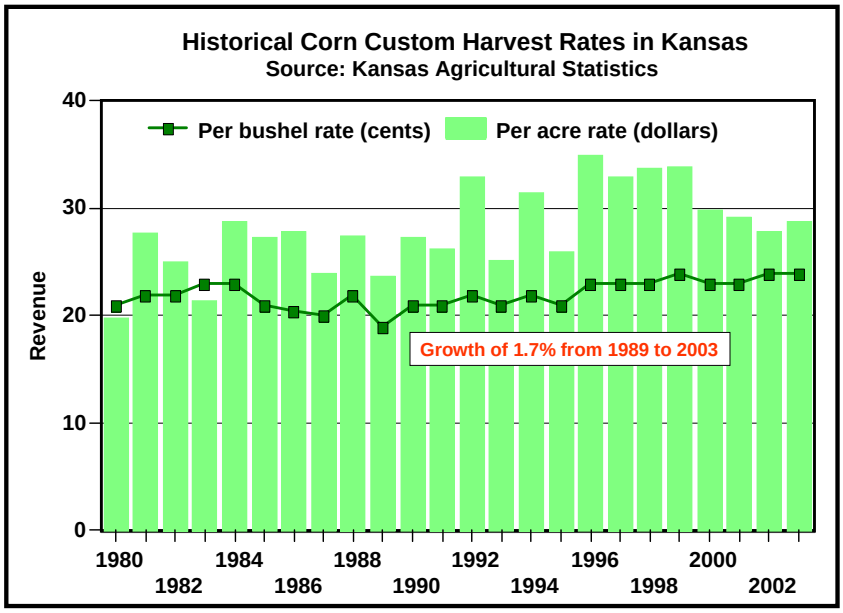
With and w/o Sec 179 on buying a new tractor – difference driven by time held.
Do you have sufficient taxable income?


Kansas Custom Rates (KS Ag. Stats)
inflation is 3.9%
$/unit
$9
$8
$7
$6
$5
$4
$3
$2
$1
round bale >1500 (1.1%/year)
round bale <1500 (1.5%/year)
undercutter (1.5%/year)
herb appl (ground) (2.7%/year)
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003

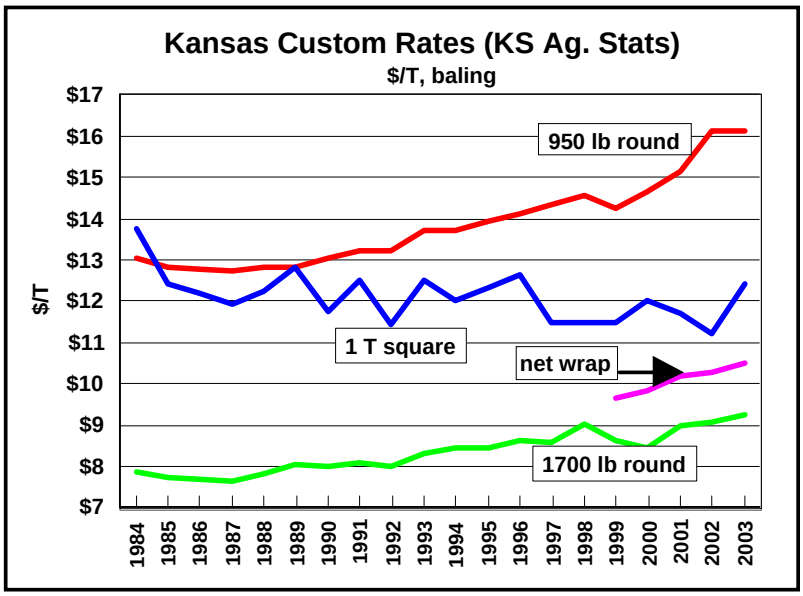

Kansas Custom Rates (KS Ag. Stats)
inflation is 2.7%
$/acre for planting
$11
$10
$9
$8
$7
$6
$5
$/hr. tractor rent (150-200 hp)
$28
$26
$24
$22
$20
$18
$16
min/notill plant wheat (2.4%/year)
min/notill plant corn (1.5%/year)
tractor rent (1.6%/year)
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003


Historical Wheat Custom Harvest Rates in Kansas
Source: Kansas Agricultural Statistics
$/ac
cents/bu
Hauling, cents/bu
Average Charge ($/ac and cents/bu)
15
14
13
12
11
10
9
8
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
Growth of 0.8 to 1.2%
from 1987 to 2003

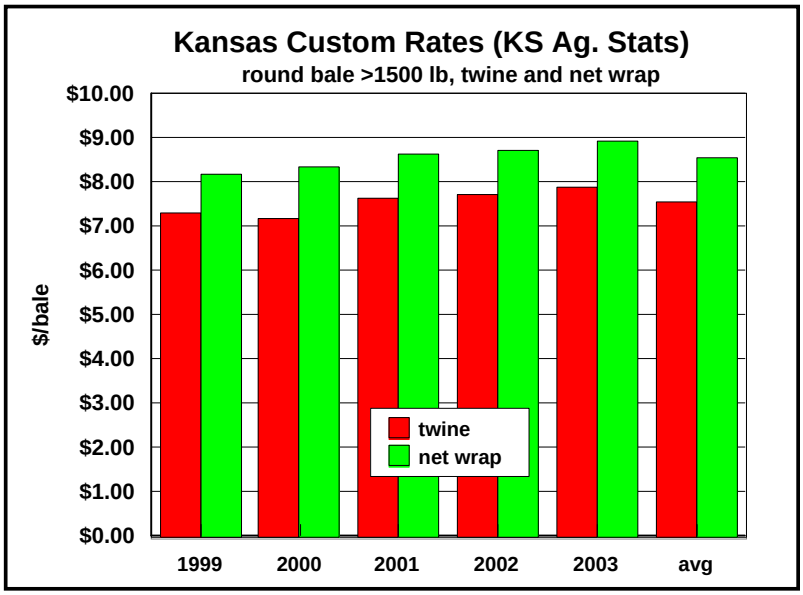
77


Historical Corn Custom Harvest Rates in Kansas
Source: Kansas Agricultural Statistics
Per bushel rate (cents)
Per acre rate (dollars)
Revenue
40
30
20
10
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Growth of 1.7% from 1989 to 2003

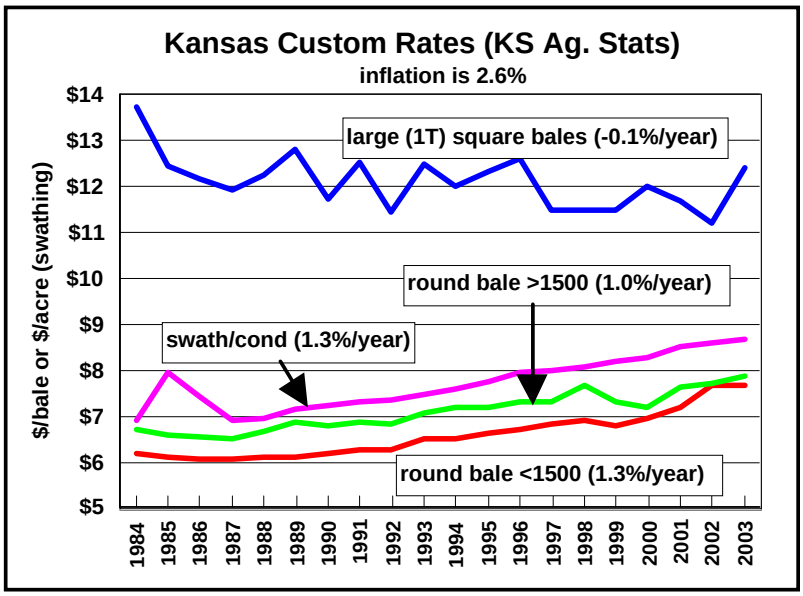
78



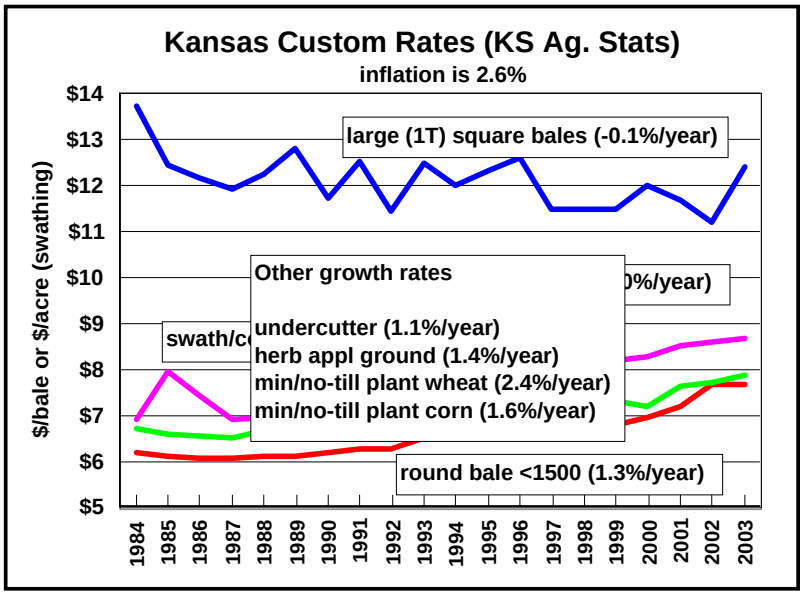
2003 $/ton: Big square ($12.41); Big round w/twine ($9.27); w/ net wrap ($10.52)



Net wrap costs about $1/bale more (or hay producers willing to pay $1 more)



Inflation has been rising faster than machinery costs



Just for comparison purposes. . .