

The Impact of Higher Fuel Prices on Machinery Costs

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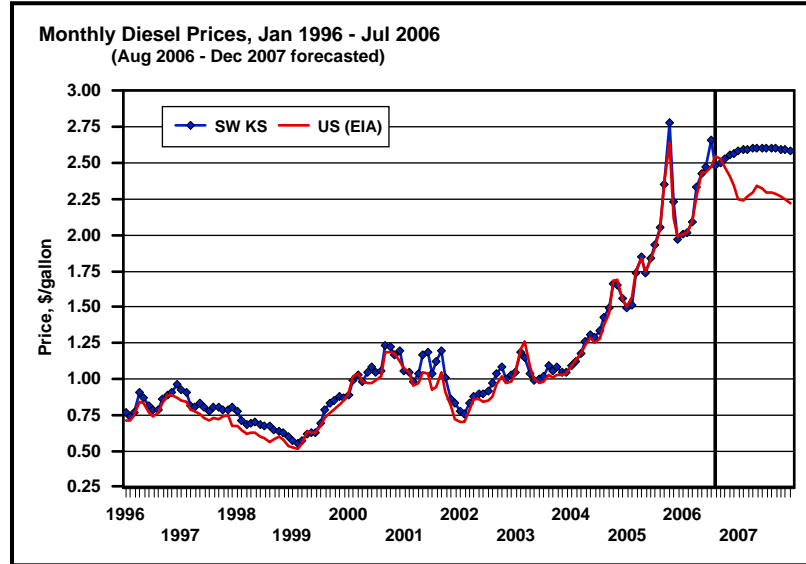
Department of Agricultural Economics
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Background thoughts . . .

- Prices for energy-related inputs are at very high levels relative to what we normally expect
- Producers likely cannot do much about the prices they face, but they need to “understand the numbers” to make good management decisions
- Major decisions crop producers have pertain to input levels, crop selection, tillage method, and possibly negotiating leases on rented land

Diesel prices are forecasted to be below 2005 peak level, but they are still at historically high levels ...



Based on 7/31/06 futures closing prices

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Historical and forecasted diesel prices during principal farming months...

Off-road Diesel Fuel Prices

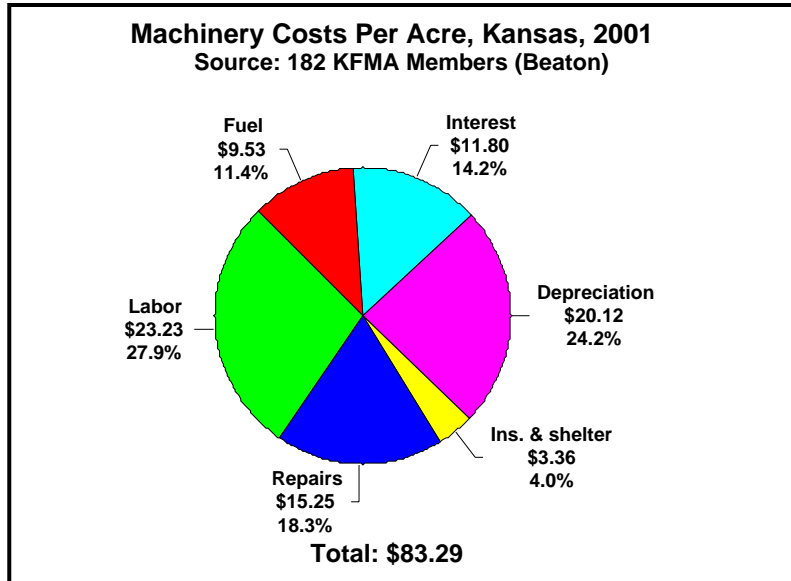
Year	Mar-Oct Diesel Price			Year-to-year percent change		
	SW KS	US (EIA)	Average	SW KS	US (EIA)	Average
2000	\$1.09	\$1.04	\$1.07	----	----	----
2001	\$1.09	\$0.98	\$1.04	0.6%	-6.1%	-2.7%
2002	\$0.94	\$0.88	\$0.91	-14.1%	-10.0%	-12.1%
2003	\$1.05	\$1.05	\$1.05	12.1%	18.6%	15.3%
2004	\$1.37	\$1.34	\$1.36	30.0%	28.4%	29.2%
2005	\$2.04	\$2.02	\$2.03	48.5%	49.9%	49.2%
2006 (F)	\$2.44	\$2.41	\$2.42	19.8%	19.6%	19.7%
2007 (F)	\$2.60	\$2.30	\$2.45	6.8%	-4.6%	1.1%
06 - Avg(00-04)	\$1.33	\$1.35	\$1.34	119.7%	127.4%	123.5%
07 - Avg(00-04)	\$1.49	\$1.24	\$1.37	134.6%	116.9%	125.9%

F = forecast

Based on 7/31/06 futures closing prices

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Fuel prices are extremely high, but fuel costs represent one of the smaller cost categories...



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Estimated effect diesel price has on machinery costs per acre based on custom rates...

Diesel Price Impact on Custom Rates for Various Field Operations

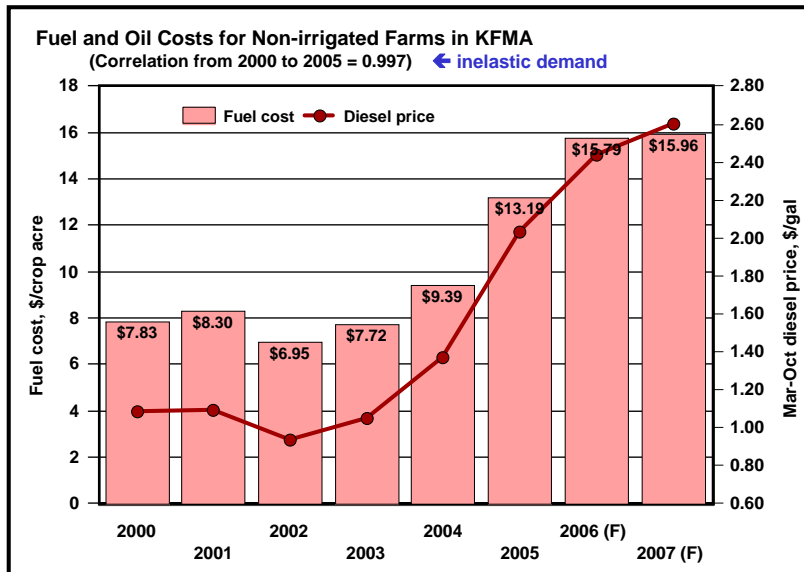
Operation	Custom rate*	Fuel price increase, \$/gallon				
		\$0.10	\$0.20	\$0.30	\$0.40	\$0.50
Increase in custom rate, \$/acre						
Chiseling	\$8.45	\$0.08	\$0.16	\$0.24	\$0.31	\$0.39
Field cultivation	\$7.13	\$0.07	\$0.13	\$0.20	\$0.27	\$0.33
Disking	\$6.84	\$0.06	\$0.13	\$0.19	\$0.25	\$0.32
Min-till planter	\$10.94	\$0.10	\$0.20	\$0.31	\$0.41	\$0.51
No-till drill	\$11.45	\$0.11	\$0.21	\$0.32	\$0.43	\$0.53
Sprayer	\$4.26	\$0.04	\$0.08	\$0.12	\$0.16	\$0.20
Swather-conditioner	\$9.46	\$0.09	\$0.18	\$0.26	\$0.35	\$0.44
Round baler	\$8.24	\$0.08	\$0.15	\$0.23	\$0.31	\$0.38
Combine--wheat	\$15.24	\$0.14	\$0.28	\$0.43	\$0.57	\$0.71
Combine--soybeans	\$21.48	\$0.20	\$0.40	\$0.60	\$0.80	\$1.00
Combine--corn	\$21.68	\$0.20	\$0.40	\$0.60	\$0.81	\$1.01

* 2005 state average reported by Kansas Agricultural Statistics

Increase in 2005 custom rates 0.9% 1.9% 2.8% 3.7% 4.7%

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Fuel costs per acre versus diesel prices...



Without any change, costs in 2006 & 2007 will be up substantially on average.

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What can producers do in response to higher machinery costs?

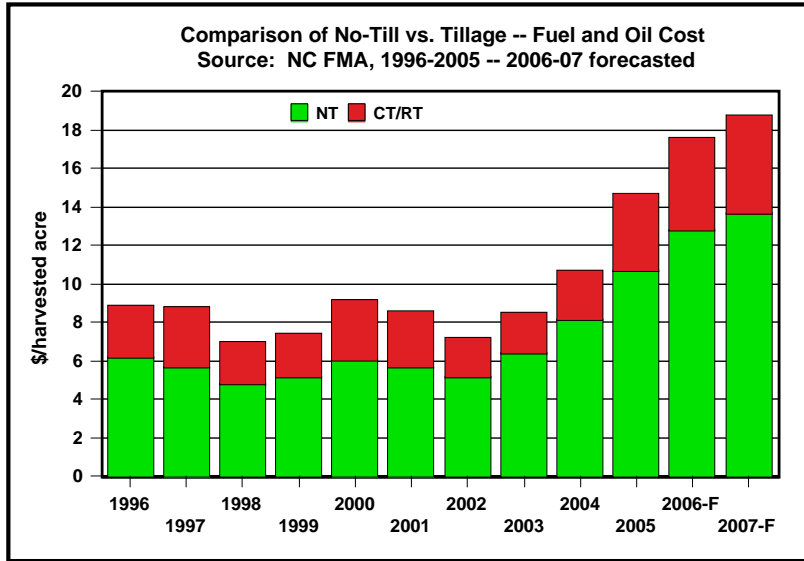
Without any change, costs of machinery operations will increase about 10-15% from more “normal” times.

Things to consider...

- Reduce operations?
- Hire custom operators?
- Make sure machinery is properly maintained and used efficiently?
- Pass increased costs on to landowners?
- Nothing?

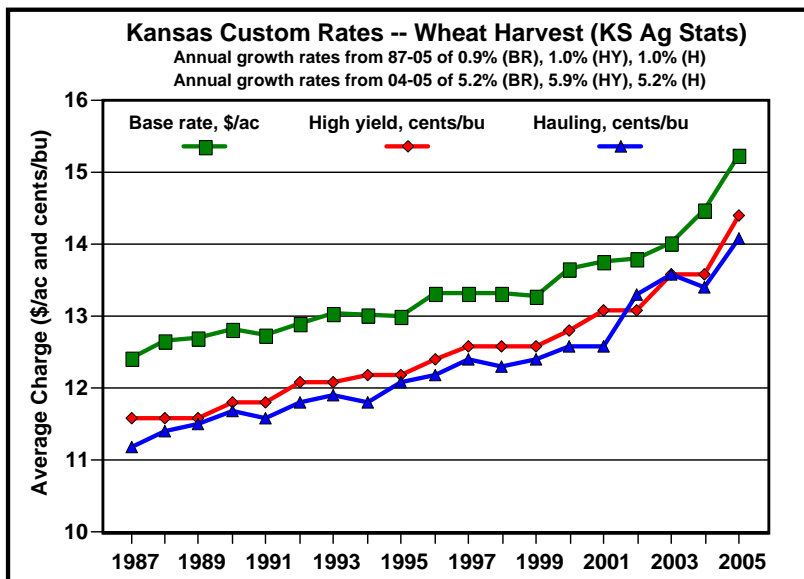
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Fuel-savings benefit of no-till increases at higher prices...



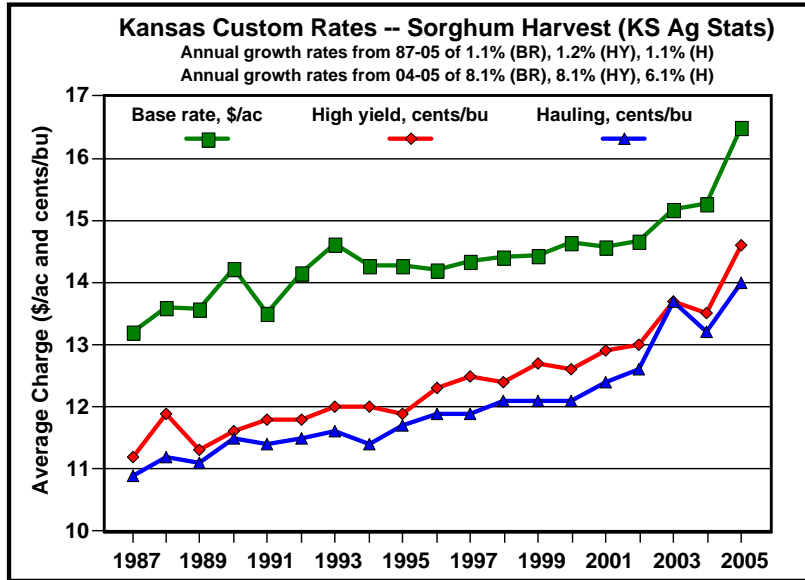
NT fuel generally 67-75% of CT/RT, savings could be as high as \$5/acre at current diesel prices (correlation between \$/acre and \$/gal – 0.954 NT and 0.945 CT/RT)

Custom harvesters raised their rates in 2005...



... hiring custom operators to avoid higher fuel costs probably won't be effective.

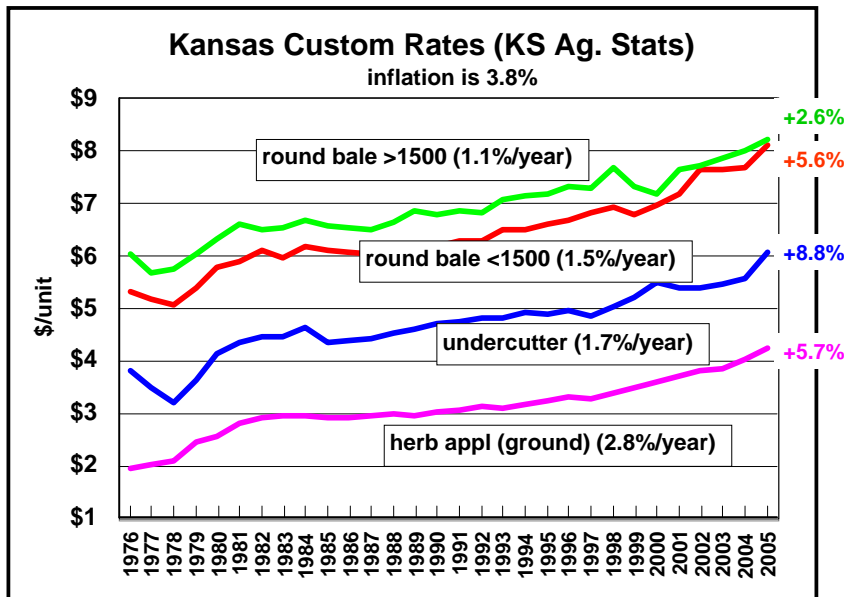
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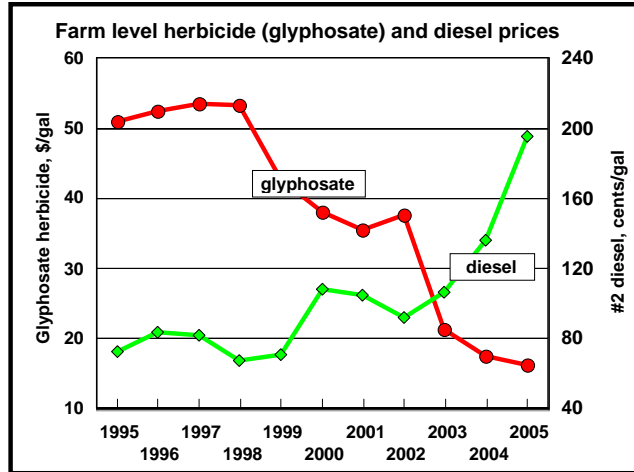
Not all custom rates increased as much in 2005...



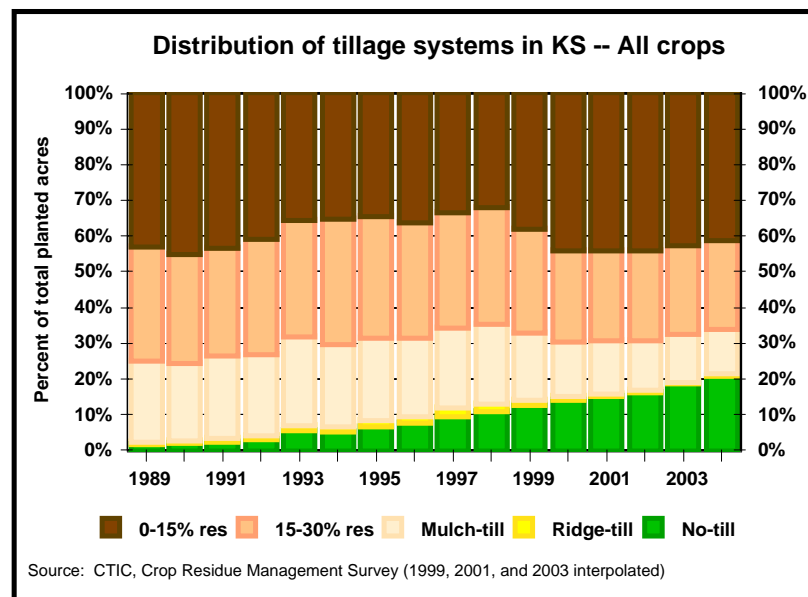
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Economics of no-till...

- If you have been thinking of no-till, but have been reluctant to make the change --- now might be the time to make the switch!



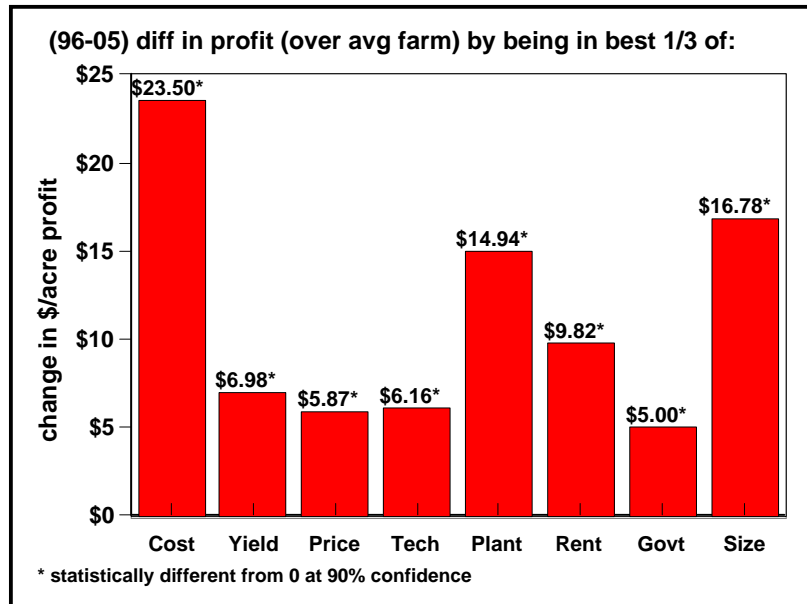
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Most growth in no-till has come at expense of mulch-till

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Good cost management will likely be even more valuable with high input prices...



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Site Updates

- Impact of Energy Price Increases on Kansas Nonirrigated Crop Farms
August 3, 2006 by Langemeier, Fahn, and Weeber
- Updated Crop Risk Tool
August 3, 2006 by Kevin Dhuyvetter
- Energy Use in the KS Agricultural Sector
August 3, 2006 by Karkner et al.
- Monthly NP1 and Diesel Price Forecasts
July 31, 2006 by Kevin Dhuyvetter
- Dynamics of Change: Must I Grow My Farm?
July 25, 2006 by Karkner and Dhuyvetter
- Crop Basis Maps
July 25, 2006 by Kevin Dhuyvetter
- Management Factors: What really matters?
July 20, 2006 by Karkner and Dhuyvetter
- Livestock and Hay Charts
August 6, 2006 by Jim Weeber
- In The Cattle Markets
July 31, 2006 by Jim Weeber/MSU
- Excel spreadsheet for estimating animal ID costs
Updated July 6, 2006 by Kevin Dhuyvetter
- Sensitivity of Future Prices
July 5, 2006 by Dhuyvetter and Karkner
- Seasonal Prices (Excel spreadsheets) - Crops and Cattle
July 6, 2006 by Kevin Dhuyvetter
- Energy Prices and Their Impact on Kansas Irrigated Crop Farms
July 21, 2006 by Fahn and Langemeier
- KSU-Crop Budgets 2006.xls
December 13, 2005 by Dhuyvetter et al.

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Questions ?