



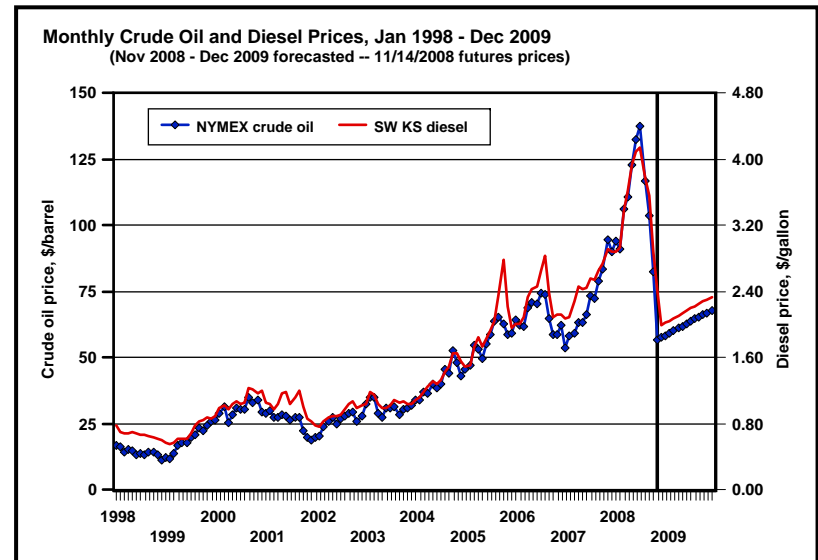
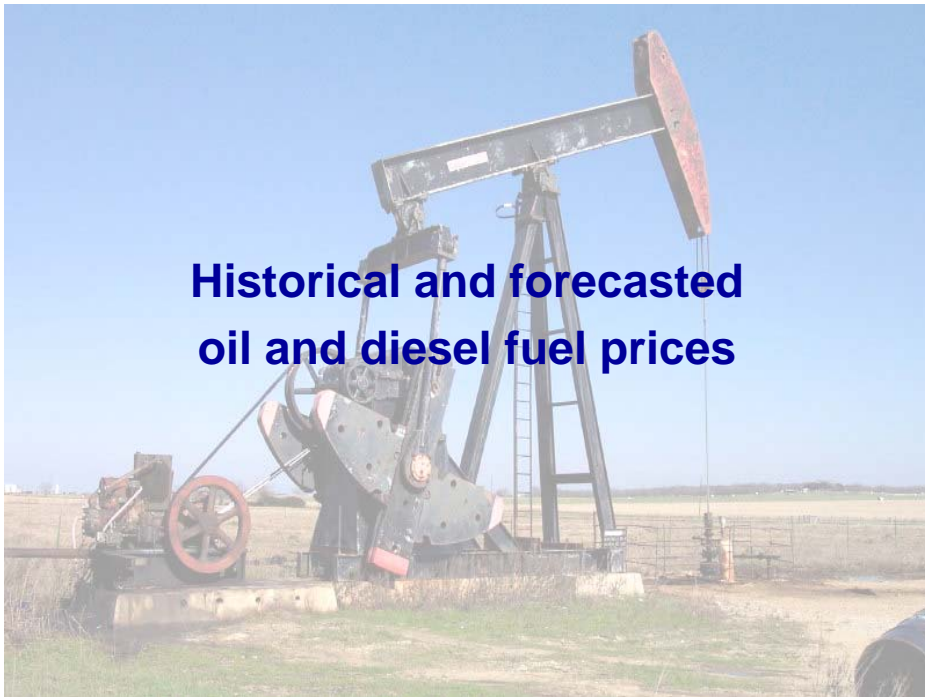
Kevin Dhuyvetter
Kansas State University

Frontier Farm Credit Customer Appreciation
Parsons, KS
November 18, 2008



Outline of talk

- Crude oil / diesel prices
- Fertilizer prices
- Risk (brief)
- Commodity prices
- Crop budgets and leasing returns



Historical relationship suggests that NYMEX crude oil market can be used to forecast diesel prices.

Historical and forecasted crude oil and farm diesel fuel average Mar-Oct prices...

Crude Oil and Off-road Diesel Fuel Prices

Year	Crude oil /1	Year-to-year change \$/barrel	Year-to-year change percent	Diesel fuel /2	Year-to-year change \$/gal	Year-to-year change percent
2001	\$26.98	----	----	\$1.09	----	----
2002	\$27.05	\$0.07	0.3%	\$0.94	(\$0.15)	-14.1%
2003	\$30.53	\$3.48	12.9%	\$1.05	\$0.11	12.1%
2004	\$41.84	\$11.31	37.0%	\$1.37	\$0.32	30.0%
2005	\$57.98	\$16.14	38.6%	\$2.04	\$0.67	48.5%
2006	\$68.07	\$10.09	17.4%	\$2.41	\$0.38	18.6%
2007	\$70.09	\$2.02	3.0%	\$2.52	\$0.11	4.4%
2008	\$114.19	\$44.10	62.9%	\$3.68	\$1.16	46.0%
2009 (F)	\$63.35	(\$50.85)	-44.5%	\$2.19	(\$1.49)	-40.6%

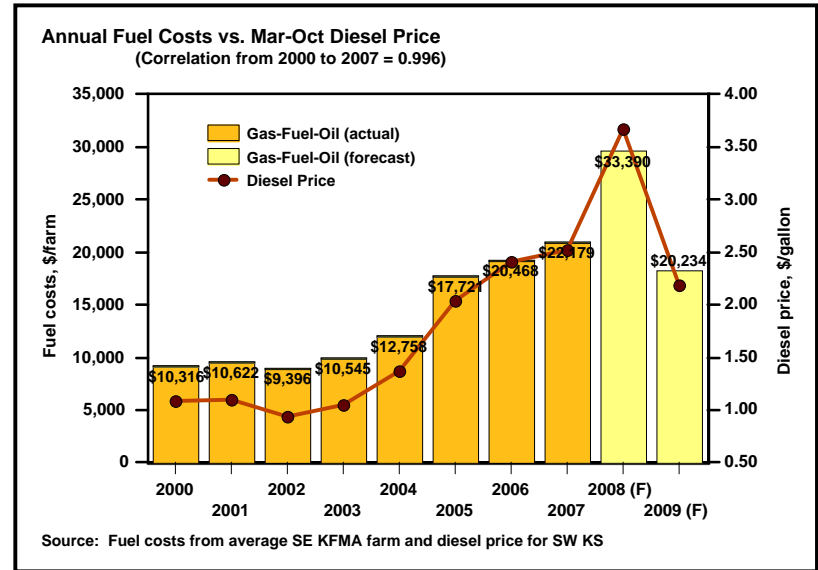
/1 Mar-Oct average of NYMEX futures

/2 Mar-Oct average for Southwest Kansas

F = forecast based on 11/14/2008 futures prices

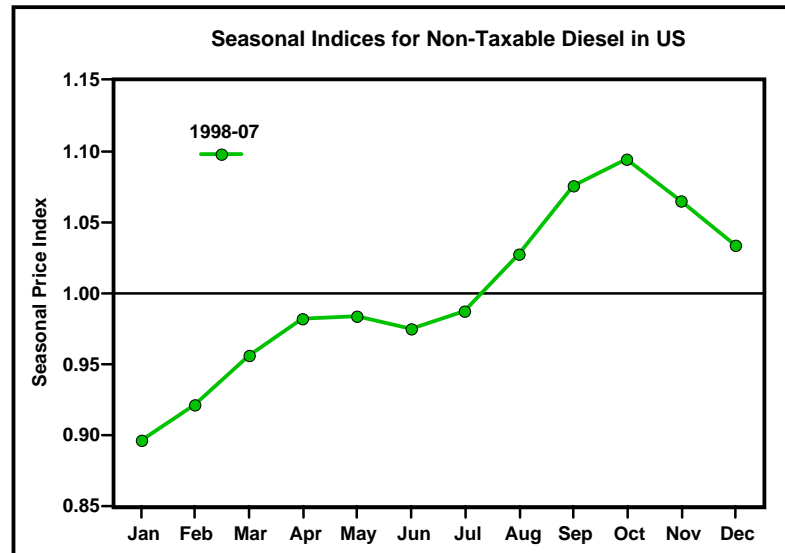
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Impact of falling fuel prices on farm-level costs...



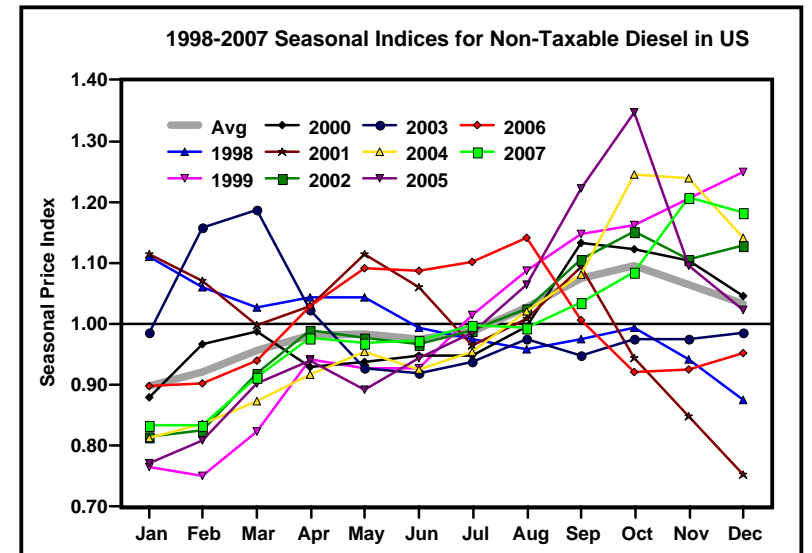
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Purchasing fuel based on seasonal patterns?



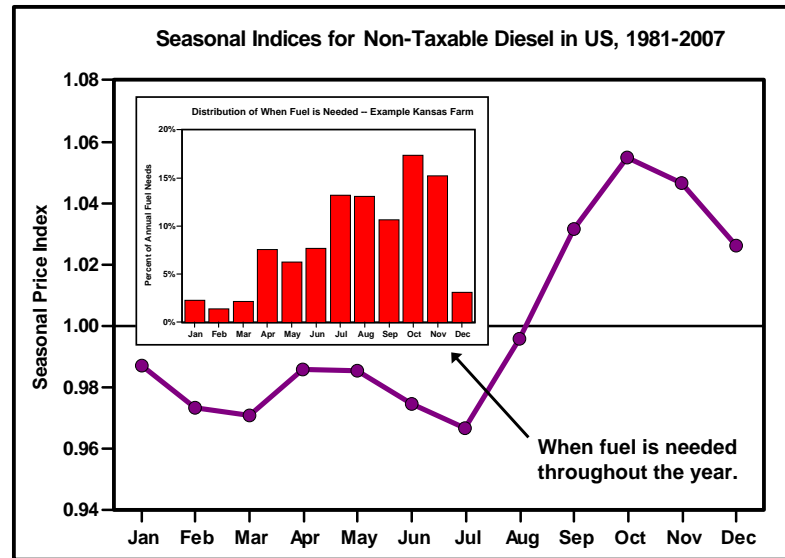
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Seasonal pattern is not particularly predictable...

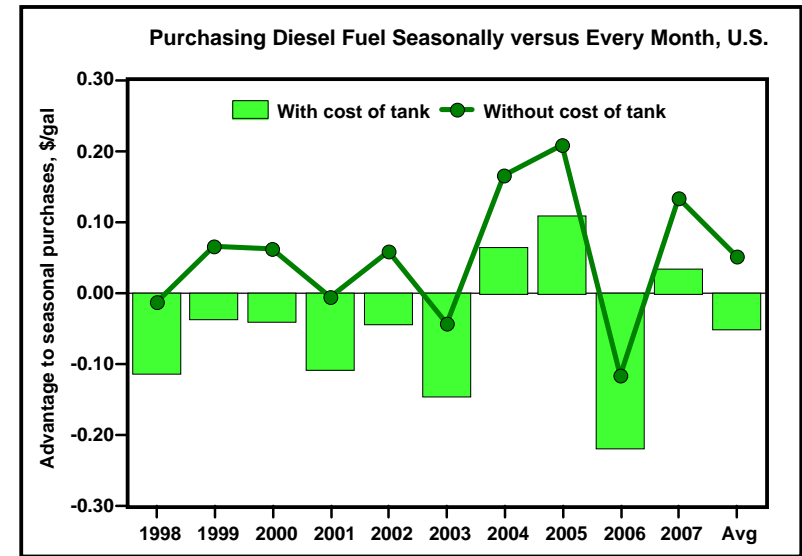


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Seasonal pattern used for analysis...



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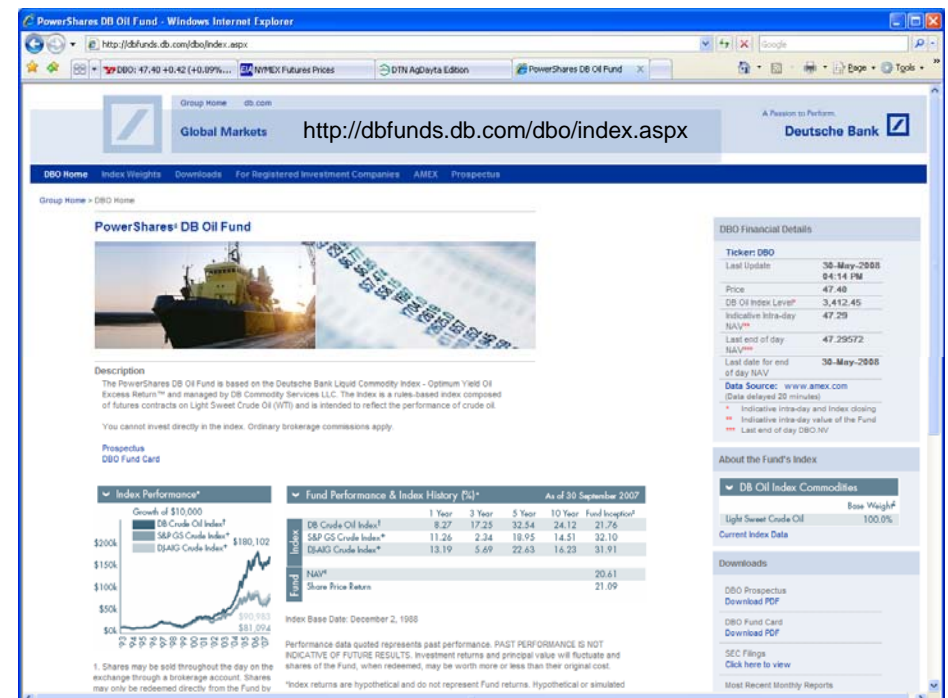
IF the only storage costs that existed were interest, then a strategy of buying in the months of Jan, Feb, Mar, Jun and Jul (based on 27-year seasonal pattern) would have resulted in a \$0.05/gallon advantage compared to buying as needed (i.e., every month). Purchasing fuel tanks turns gain into loss.

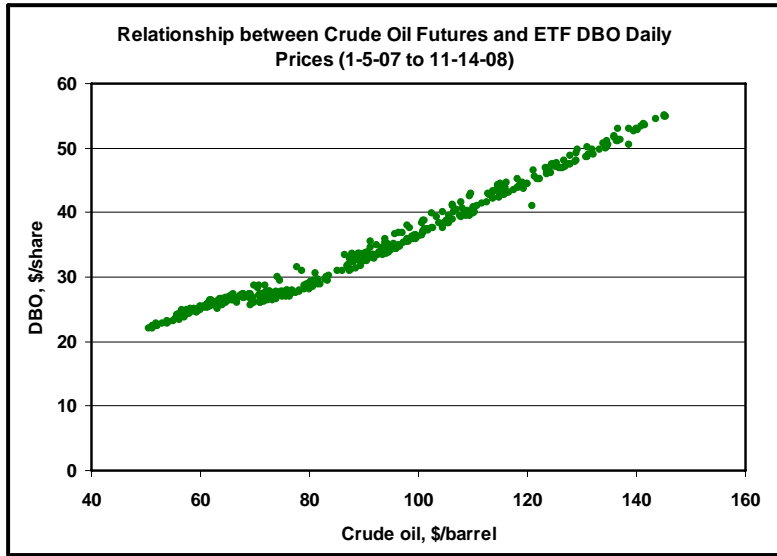
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Pre-purchasing / locking in fuel prices

- Buy now and take delivery (need to have storage)
- Forward contract for later delivery
 - Availability of this option?
 - Quantity requirements?
- Hedge fuel in NYMEX crude oil (or heating oil) futures market
 - Quantity – one crude oil contract (1,000 barrels) effectively hedges 30,000+ gallons of diesel
- Hedge using Exchange Traded Funds (ETF)

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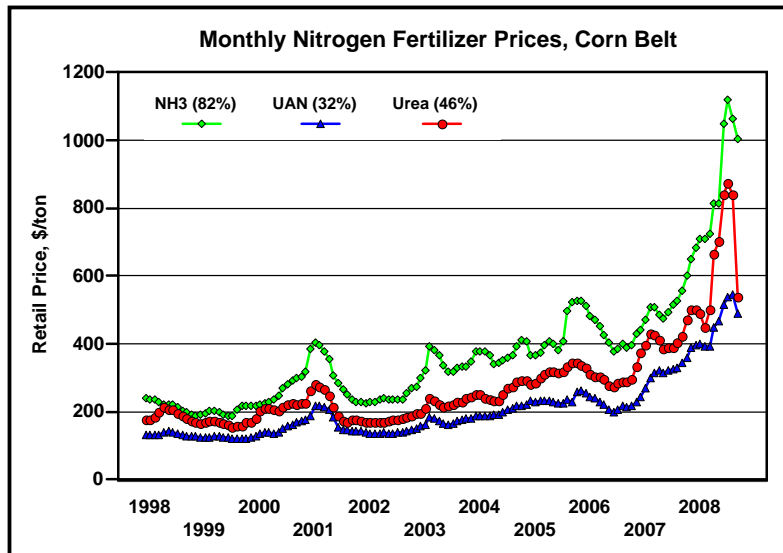
Relationship suggest you could reasonably hedge crude oil price (hence diesel fuel price) via buying DBO stock. One share of DBO stock would effectively hedge approximately 11-12 gallons of diesel (basis risk?).



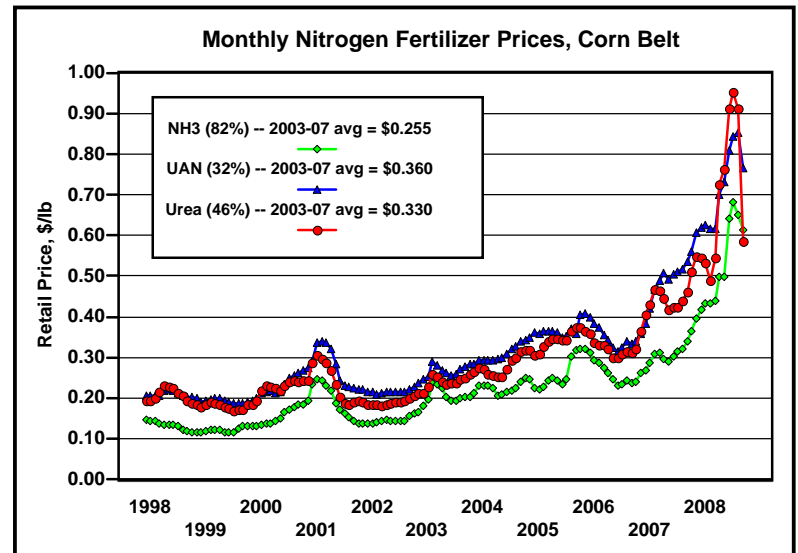
Fertilizer prices

(should you be cutting back on fertilizer rates?)

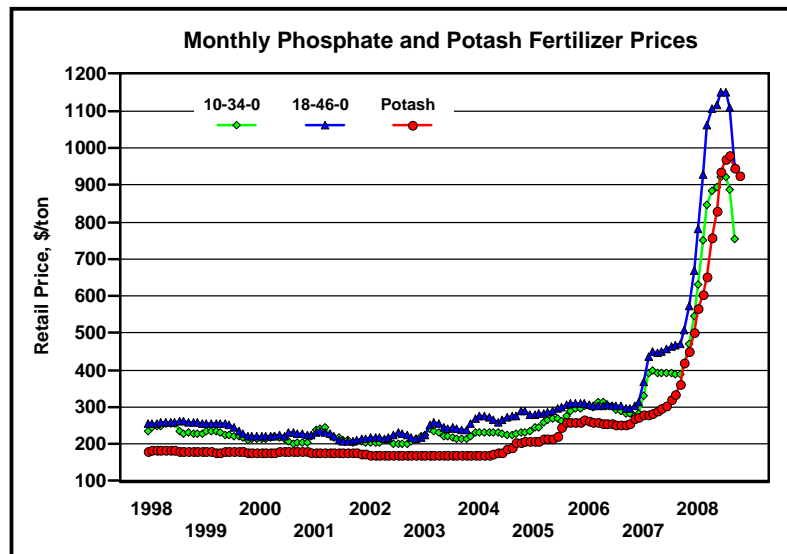
Nitrogen prices are starting to decrease (especially urea)...



But, prices are still significantly above historical averages...

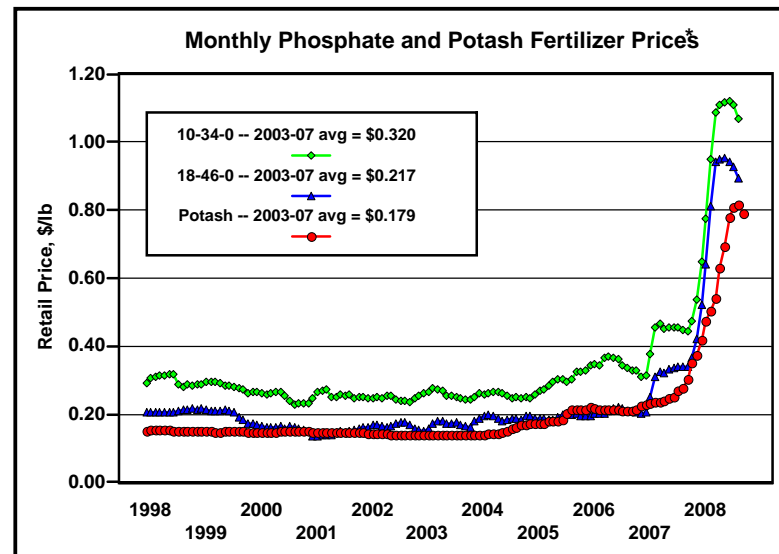


Prices of N and P blends and K are decreasing...



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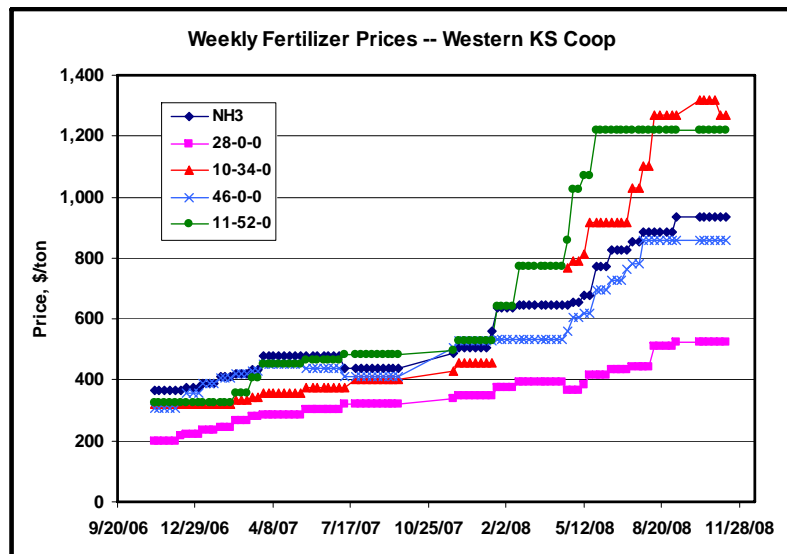
But, prices are still significantly above historical averages...



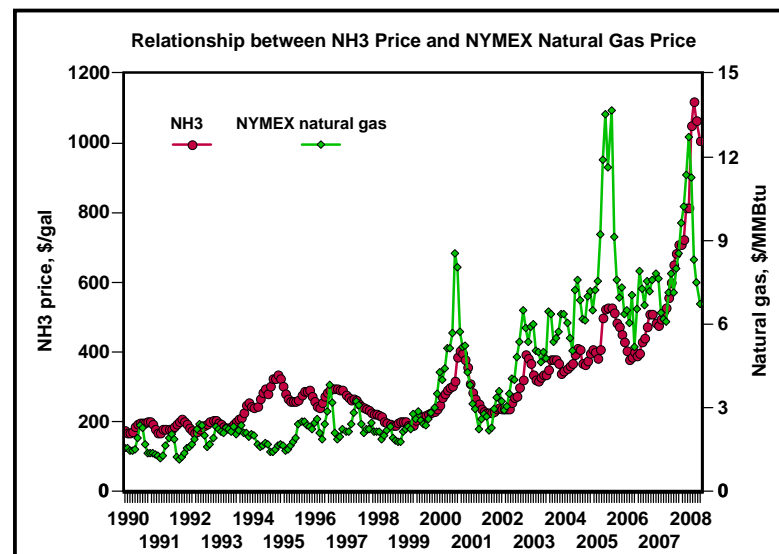
* Price of phosphate is based on blend price less value of N (average of NH₃, UAN 32, and Urea prices)

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And, local prices are not dropping just yet...



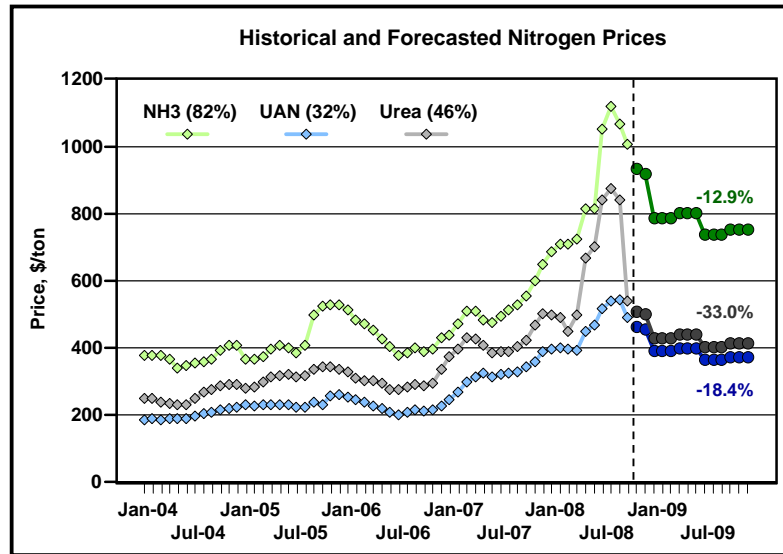
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Relationship is relatively strong during much of the time, but at times there is little to no relationship → forecasting NH₃ prices is tough...

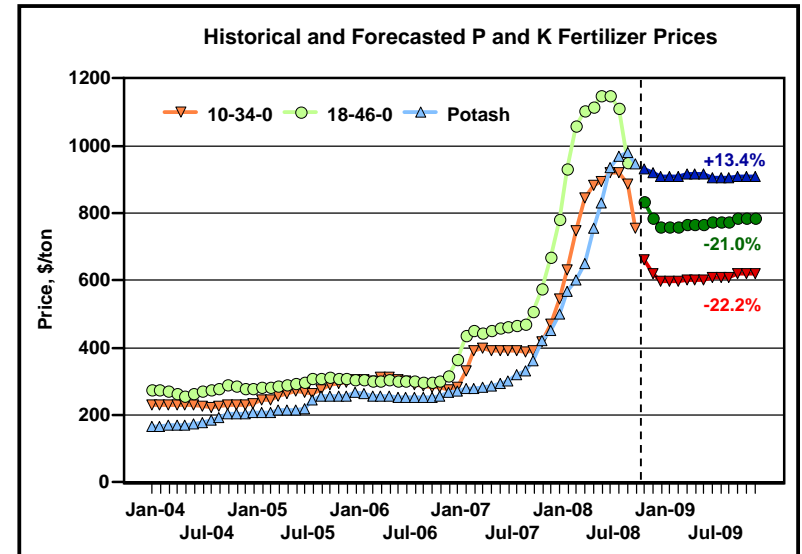
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Industry sources are predicting nitrogen prices to continue weakening in 2009...



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Industry sources are predicting N & P blend prices to continue weakening in 2009, but potash to remain high...



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What do high fertilizer and crop prices imply for optimal fertilizer rates?

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KSU-NPI_CropBudgets.xls -- A spreadsheet budgeting program to compare economic returns of multiple crops and/or crop rotations where nitrogen and phosphate fertilizer and irrigation levels are determined optimally based upon prices.

Version -- 11.17.08

INPUTS vs CALCULATED VALUES
 In the *Budgets*, *Optimal N&P*, *Figures*, and *Irr energy costs* sheets all blue numbers are inputs and all black numbers are calculated from these inputs. The *Irr energy costs* sheet is included as a calculator to assist with determining irrigation pumping costs to enter into the *Budgets* sheet (costs calculated in the *Irr energy costs* sheet need to be manually entered into the *Budgets* sheet).

DESCRIPTION OF INPUTS
 Several of the input cells (i.e., blue number) have a red diamond in the upper right hand corner of the cell. By moving your mouse cursor over this diamond, a brief description of the input will be displayed on the screen.

COMPANION PUBLICATION
 The mathematical approach used to determine the economic optimal N rates is described in "Modifying Yield-Goal-Based Fertilizer Recommendations to Reflect Price" (available on www.agmanager.info).

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Extension Agricultural Economists
 Kansas State University

KSU-NPI_CropBudgets.xls -- available at www.agmanager.info

NUM

Microsoft Excel - KSU NPI_CropBudgets(SE_Nov2008).xls

CROP BUDGETS OF TOTAL COSTS AND RETURNS (Nitrogen & Phosphate Fertilizer and Irrigation Water at Economic Optimum Levels)

Crop System	Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa	DC Beans	Total	Per	Per
Planted acres of each crop	60.0	20.0	30.0	20.0	20.0	20.0	20.0	190.0	Acres	Acres
Tillable acres per planted acre	1.00	1.00	1.00	1.00	0.00	1.00	0.00	150.0	Planted	Tillable
INCOME PER ACRE										
A. Yield per acre	44.8	107.2	82.3	35.1	1,015.2	3.5	20.0			
B. Price per unit	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258	\$110.00	\$7.40	\$49,115	\$258.50	\$327.43
C. Net government payments	\$11.39	\$11.39	\$11.39	\$11.39	\$0.00	\$11.39	\$0.00	1,709	8.99	11.39
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0.00	0.00
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	0.00	0.00
F. Returns/acre ((A x B) + C + D + E)	\$249.38	\$411.17	\$301.77	\$270.86	\$127.73	\$401.05	\$148.00	\$50,823	\$267.49	\$338.02
COSTS PER ACRE										
1. Seed	\$14.40	\$40.56	\$14.22	\$35.10	\$20.02	\$12.60	\$4.00	\$4,465	\$23.50	\$29.77
2. Herbicide	3.42	35.41	20.50	9.48	19.47	5.21	19.00	2,500	13.16	16.66
3. Insecticide / fungicide	24.00	0.25	5.05	0.00	0.08	6.08	0.00	1,669	8.79	11.13
4. Fertilizer and lime	65.12	97.15	74.98	44.76	21.35	82.42	34.20	11,452	60.27	76.34
5. Crop consulting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
6. Crop insurance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
7. Drying	0.00	0.00	0.00	0.00	3.96	0.00	0.00	79	0.42	0.53
8. Miscellaneous	7.00	7.00	7.00	7.00	5.00	7.00	5.00	1,250	6.58	8.33
9. Machinery expense	79.73	115.37	91.94	90.52	55.94	134.11	53.57	16,518	86.93	110.12
10. Non-machinery labor	8.97	13.13	10.53	10.01	5.98	15.08	6.11	1,855	9.76	12.37
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land charge / rent	55.00	55.00	55.00	55.00	0.00	55.00	0.00	8,250	43.42	55.00
G. SUB TOTAL	\$257.64	\$363.86	\$279.23	\$251.86	\$131.79	\$317.49	\$158.78	\$48,037	\$252.83	\$320.25
H. TOTAL COSTS	\$265.75	\$376.21	\$288.20	\$259.74	\$136.90	\$327.99	\$165.13	\$49,626	\$261.19	\$330.84
I. RETURNS OVER COSTS (F - H)	(\$17.36)	\$34.96	\$13.57	\$11.12	(\$9.17)	\$73.06	(\$17.13)	\$1,198	\$6.30	\$7.98
J. TOTAL COSTS/UNIT (H/A)	\$5.93	\$3.51	\$3.50	\$7.41	\$0.13	\$92.59	\$8.26			
K. RETURN TO ANNUAL COST ((I+J)/G)	-3.59%	13.00%	8.07%	7.54%	-3.08%	26.32%	-6.79%			
M. Breakeven price (w/ base scenario)	\$6.46	\$3.73	\$3.79	\$8.08	\$0.17	\$99.24	\$10.00			
N. Breakeven yield (w/ base scenario)	55.4	107.2	89.0	38.4	1,886.6	3.1	27.3			

Microsoft Excel - KSU NPI_CropBudgets(SE_Nov2008).xls

TABLE 1. Production Inputs Used for Budgets

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa	DC Beans	Use (Y=1, N=0)
Price scenarios to consider								
Long-run prices (MF-1013)	\$5.11	\$3.11	\$3.31	\$7.84	\$0.1333	\$94.88	\$7.84	0
Short-run prices (MF-1013)	\$5.94	\$4.19	\$4.39	\$8.87	\$0.1706	\$119.67	\$8.87	0
2009 bids (SEK Grain - 11/14/08)	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258	\$110.00	\$7.40	1
Yield goal (Yg), bu/acre	50.0	115.0	90.0	36.0	1,200	3.6	20.0	
Enter 0 for dryland or 1 for irrigated	0	0	0	0	0	0	0	
Annual rainfall	36.00	36.00	36.00	36.00	36.00	36.00	na	
Soil test P (STP), ppm	12.00	12.00	12.00	12.00	12.00	12.00	na	
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00	2.00	na	
Soil test nitrogen (STN), lbs/acre	20.0	20.0	20.0	20.0	20.0	20.0	na	
Other N adjustments, lbs/acre	0.0	0.0	0.0	0.0	0.0	0.0	na	
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0	0.0	0.0	
Econ Optimum fertN, lbs/acre	48.9	87.4	52.1	0.0	0.0	0.0	0.0	
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6	46.5	20.0	
Econ Optimum fertP, lbs/acre	7.8	12.1	9.0	20.9	2.5	38.4	20.0	
Econ Optimum Irrigation Amount, in	0.0	3.8	0.0	1.4	0.0	12.9	20.0	
Yield at optimal N, P, and I, bu/acre	44.8	107.2	82.3	35.1	1,015.2	3.5	20.0	
Change in STP, ppm	-0.81	-1.29	-1.33	-0.40	-0.71	-0.23		
Seeding rate (lbs, seeds, etc)	90	24	4.5	130	22	3	160	
Seed price, \$/unit	\$0.16	\$1.69	\$3.16	\$0.27	\$0.91	\$4.20	\$0.25	
Fertilizer:								\$/unit
Nitrogen (N)	48.9	87.4	52.1	0.0	0.0	0.0	0.0	\$0.71/lb
Phosphate (P)	7.8	12.1	9.0	20.9	2.5	38.4	20.0	\$1.09/lb
Potash (K)	30	30	40	30	30	60	20	\$0.62/lb
Other	0	0	0	0	0	0	0	\$1.00/acre
Lime	333	333	333	333	0	333	0	\$0.01/lb
Herbicide								
Finesse	0.2							\$17.12/oz
Furquit						1.2		\$4.34/oz
Bicep II Magnum	2.3	2						\$10.25/qt
Snit								\$11.81/oz

User enters yield goal, crop and fertilizer prices, and soil properties - optimal N and P rates are calculated.

Prices:
Crop = base
N = base
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	48.9	87.4	52.1	0.0	0.0
Econ Optimum fertP, lbs/acre	7.8	12.1	9.0	20.9	2.5
Yield at optimal N and P, bu (lb)/acre	44.8	107.2	82.3	35.1	1,015
Change in STP, ppm	-0.8	-1.3	-1.3	-0.4	-0.7
N price = \$0.71/lb and P price = \$1.09/lb					

Prices:
Crop = 75%
N = base
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$3.97	\$2.80	\$2.65	\$5.55	\$0.0944
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	34.9	70.0	36.5	0.0	0.0
Econ Optimum fertP, lbs/acre	0.2	5.5	2.4	17.0	2.5
Yield at optimal N and P, bu (lb)/acre	40.8	101.1	76.2	34.4	1,015
Change in STP, ppm	-1.1	-1.5	-1.6	-0.6	-0.7
N price = \$0.71/lb and P price = \$1.09/lb					

Prices:
Crop = 125%
N = base
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$6.61	\$4.66	\$4.41	\$9.25	\$0.1573
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	57.5	97.6	61.4	0.0	4.0
Econ Optimum fertP, lbs/acre	12.4	15.9	13.0	23.7	4.8
Yield at optimal N and P, bu (lb)/acre	46.7	109.9	85.1	35.4	1,051
Change in STP, ppm	-0.6	-1.1	-1.2	-0.3	-0.6
N price = \$0.71/lb and P price = \$1.09/lb					

Prices:
Crop = base
N = base
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	48.9	87.4	52.1	0.0	0.0
Econ Optimum fertP, lbs/acre	7.8	12.1	9.0	20.9	2.5
Yield at optimal N and P, bu (lb)/acre	44.8	107.2	82.3	35.1	1,015
Change in STP, ppm	-0.8	-1.3	-1.3	-0.4	-0.7
N price = \$0.71/lb and P price = \$1.09/lb					

Prices:
Crop = base
N = base
P = \$0.00

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	68.1	106.6	70.6	0.0	15.8
Econ Optimum fertP, lbs/acre	18.1	19.4	17.0	33.5	11.7
Yield at optimal N and P, bu (lb)/acre	48.5	111.9	87.2	36.0	1,135
Change in STP, ppm	-0.3	-1.0	-1.0	0.3	-0.3
N price = \$0.71/lb and P price = \$0.00/lb					

Prices:
Crop = 125%
N = \$0.00
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/acre	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/acre	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/acre	72.2	120.5	80.5	0.0	18.3
Econ Optimum fertP, lbs/acre	20.3	24.6	21.1	20.9	13.2
Yield at optimal N and P, bu (lb)/acre	49.0	114.0	88.8	35.1	1,148
Change in STP, ppm	-0.2	-0.7	-0.8	-0.4	-0.2
N price = \$0.00/lb and P price = \$1.09/lb					

Prices:
Crop = base
N = base
P = base

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/ac	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/ac	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/ac	48.9	87.4	52.1	0.0	0.0
Econ Optimum fertP, lbs/ac	7.8	12.1	9.0	20.9	2.5
Yield at optimal N and P, bu (lb)/ac	44.8	107.2	82.3	35.1	1,015
Change in STP, ppm	-0.8	-1.3	-1.3	-0.4	-0.7

N price = \$0.71/lb and P price = \$1.09/lb

Prices:
Crop = base
N = \$0.30
P = \$0.35

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$5.29	\$3.73	\$3.53	\$7.40	\$0.1258
KSU recommended nitrogen, lbs/ac	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/ac	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/ac	75.1	119.5	80.5	0.0	22.6
Econ Optimum fertP, lbs/ac	21.9	24.2	21.1	29.3	15.6
Yield at optimal N and P, bu (lb)/ac	49.3	113.9	88.8	35.9	1,168
Change in STP, ppm	-0.1	-0.7	-0.8	0.0	-0.1

N price = \$0.30/lb and P price = \$0.35/lb

Prices:
Crop = 125%
N = \$0.30
P = \$0.35

ITEM	Wheat	Corn	Sorghum	Soybean	Sunflower
Crop price	\$6.61	\$4.66	\$4.41	\$9.25	\$0.1573
KSU recommended nitrogen, lbs/ac	80.0	124.0	84.0	0.0	30.0
KSU recommended phosphate, lbs/ac	26.8	29.2	25.8	29.7	21.6
Econ Optimum fertN, lbs/ac	78.7	124.0	84.4	0.0	25.9
Econ Optimum fertP, lbs/ac	23.9	25.9	22.8	30.0	17.6
Yield at optimal N and P, bu (lb)/ac	49.6	114.3	89.3	35.9	1,180
Change in STP, ppm	0.0	-0.7	-0.7	0.1	0.0

N price = \$0.30/lb and P price = \$0.35/lb

Risk

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Sources of Risk in Agriculture

1. Price risk
2. Production risk
3. Input cost risk
4. Casualty loss risk
5. Legal, regulatory, and policy risk
6. Personal well-being/health risk
7. Risk of dependent/partner business changes

Source: Modified from Miller et al., "Risk Management for Farmers", Purdue University, Sept 2004.

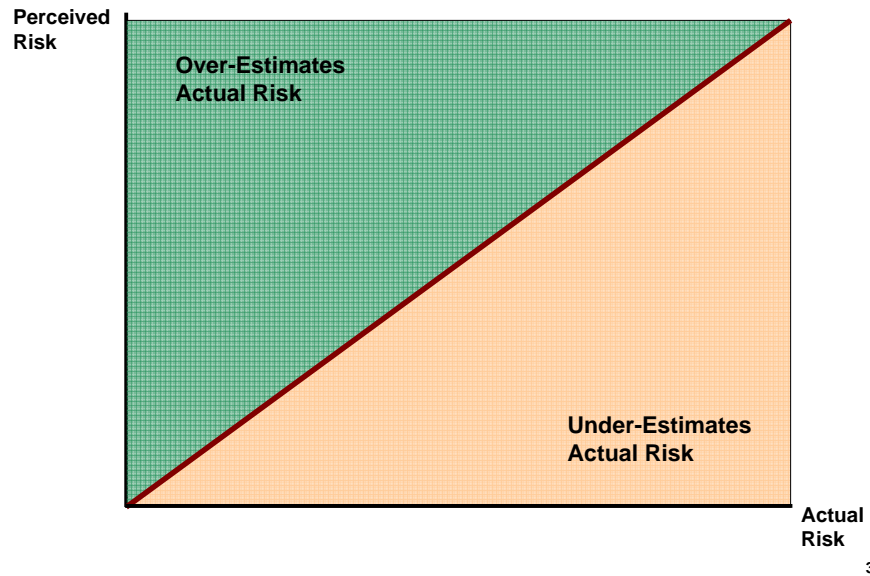
31

Two Manager Attributes Affect Risk Management Strategy Employed

1. RISK Perception
 2. RISK Attitude or Aversion Level
- Together determine how manager deals with risk

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Perceived versus actual risk...



Aligning Perceived and Actual Risk

1. Education
2. Information
3. Experience

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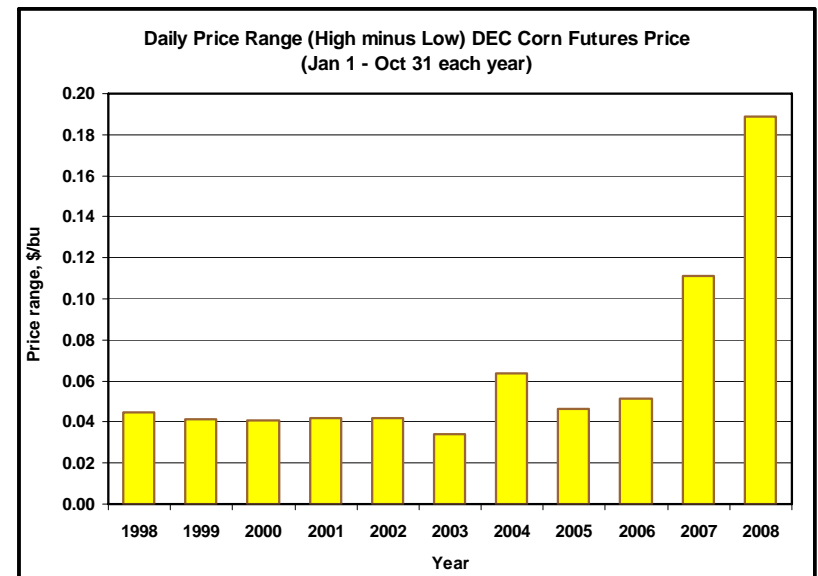


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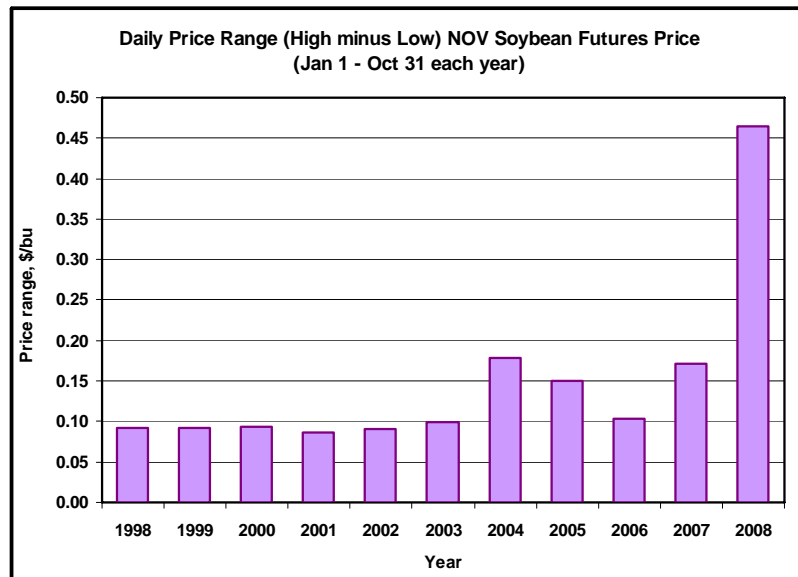
Commodity prices volatility

35

Daily corn price moves have increased significantly ...

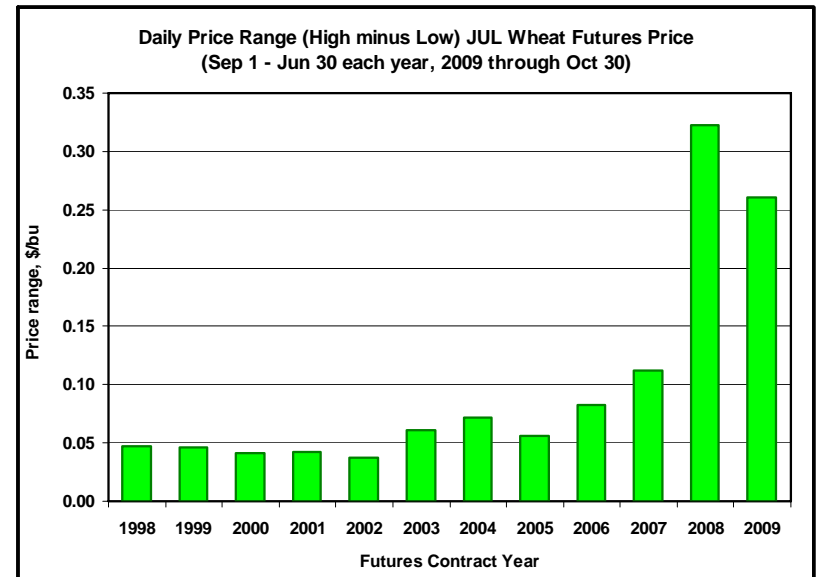


Daily soybean price moves have increased significantly ...



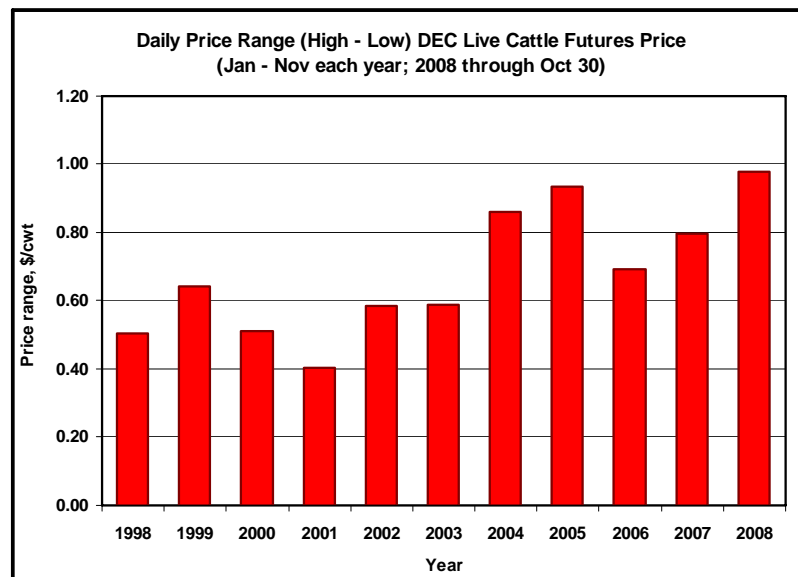
37

Daily wheat price moves have increased significantly ...



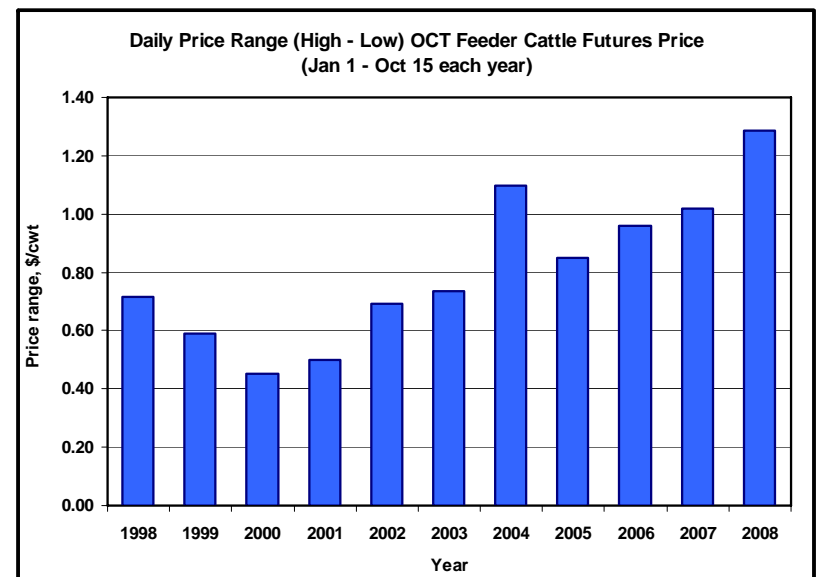
38

Daily fed cattle price fluctuations are high, but nothing we haven't seen before ...



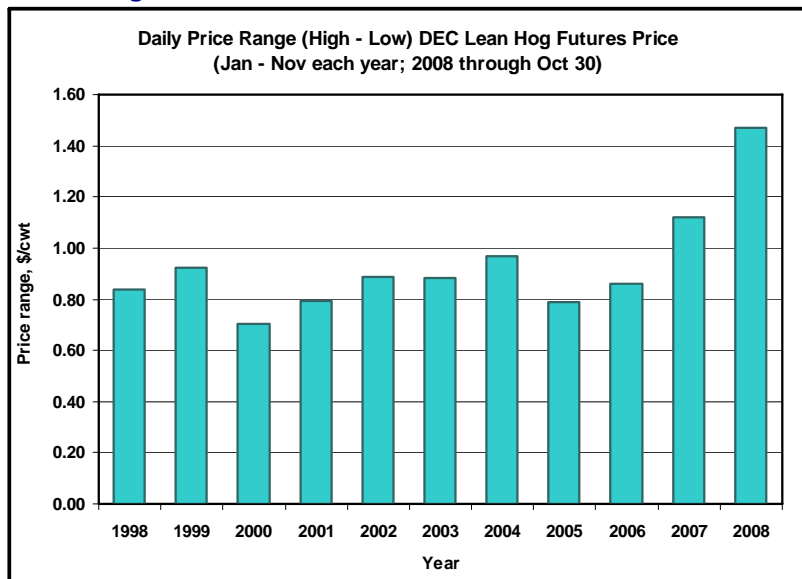
39

Little more price variability in feeder cattle market than fed cattle market ...



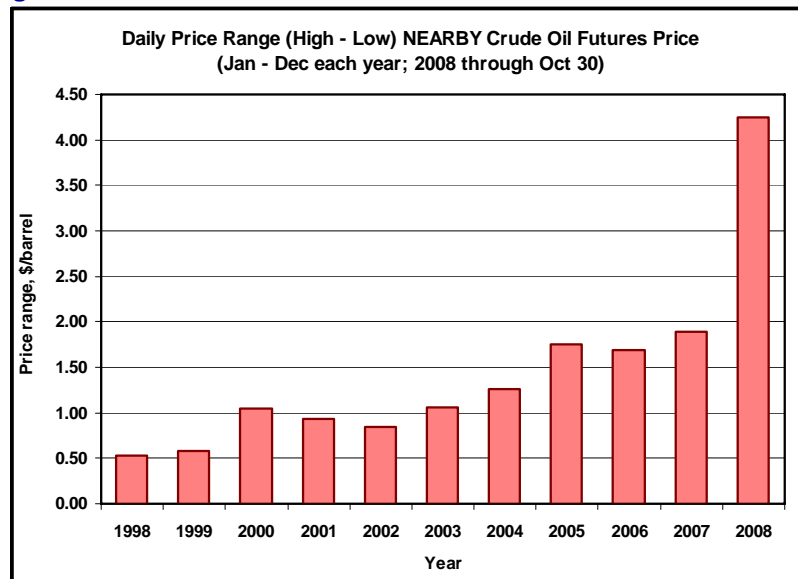
40

Price volatility in hog market up more than cattle, but less than grains ...



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Price volatility in crude oil market somewhere between grains and livestock markets ...



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CBOT corn futures prices (11-14-08) ...

Month	Last	Chg	Open	High	Low	Volume	Open Int	Trade Time
Dec-08	380'2s	32	376'0	381'4	371'0	141034	275938	11/14/08 13:40
Mar-09	397'0s	34	393'0	398'4	388'0	65130	312528	
May-09	408'4s	36	405'4	405'4	399'2	14367	83990	
Jul-09	419'6s	36	415'0	420'0	411'0	18347	121512	
Sep-09	430'2s	36	420'4	426'6	420'4	1553	23513	
Dec-09	443'0s	26	439'0	443'0	435'0	11149	143457	
Mar-10	457'4s	26	449'6	449'6	449'6	130	10071	
May-10	466'4s	26	---	---	---	23	1035	
Jul-10	470'6s	26	---	---	---	77	3121	
Dec-10	441'0s	0'6	438'2	438'2	438'2	135	25942	
Jul-11	456'0s	0'6	---	---	---	0	308	
Dec-11	456'0s	0'6	---	---	---	2	580	11/14/08 13:40

Dec-09 is trading at \$4.43

This is the market's forecast as to what prices will be, but how confident are we in this forecast?

What is the probability price will be \$4.23 to \$4.63 (+/- \$0.20) in late Nov?

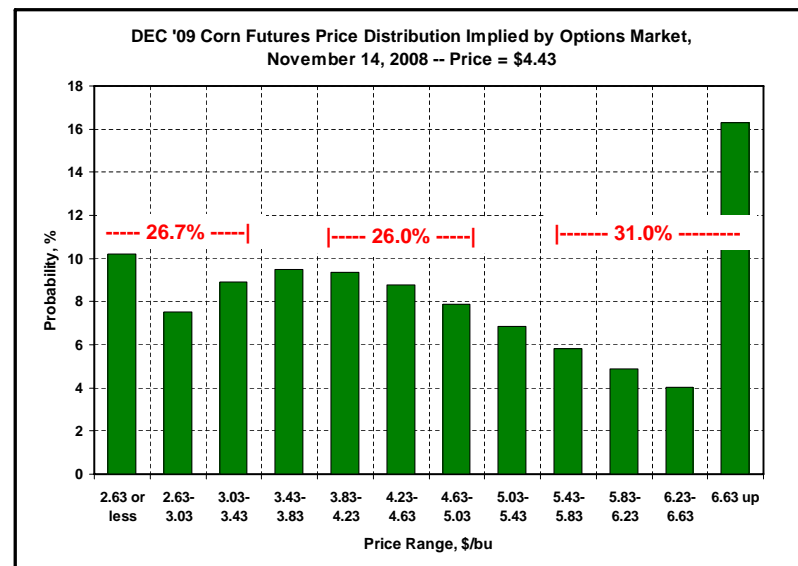
What is the probability price will be \$3.83 to \$5.03 (+/- \$0.60) in late Nov?

What is the probability price will be < \$3.43 (down \$1.00) in late Nov?

What is the probability price will be > \$5.43 (up \$1.00) in late Nov?

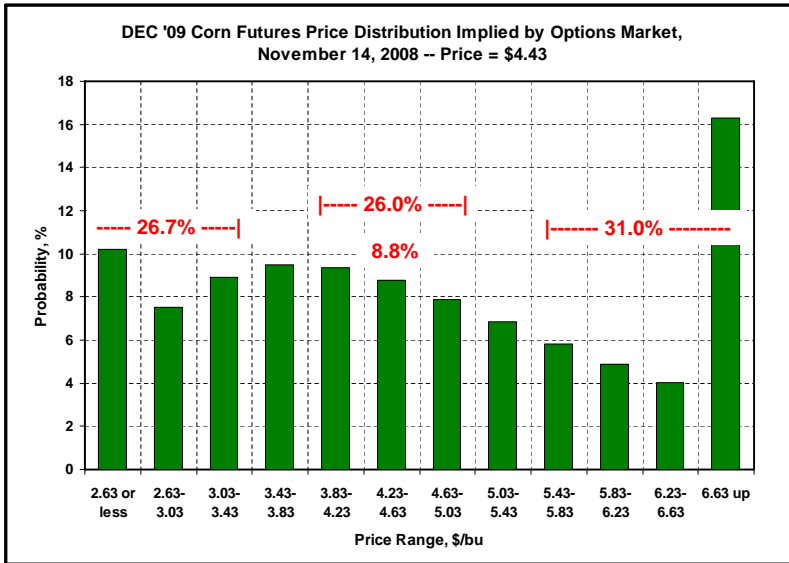
43

Distribution of market's expectation of prices in late Nov...



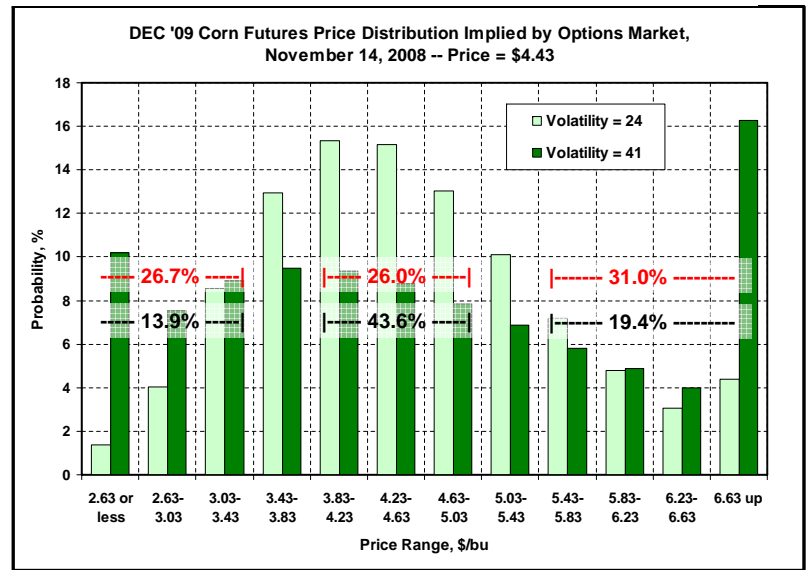
44

While \$4.43 might be our best guess, we don't have much confidence that prices will actually end up being \$4.43



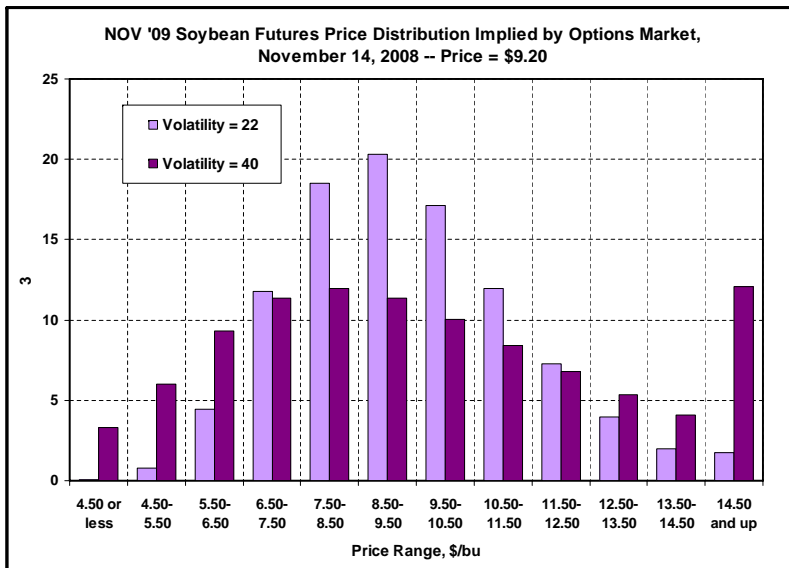
45

At historical volatility levels, variability still exists, but we would have much more confidence in price forecast...



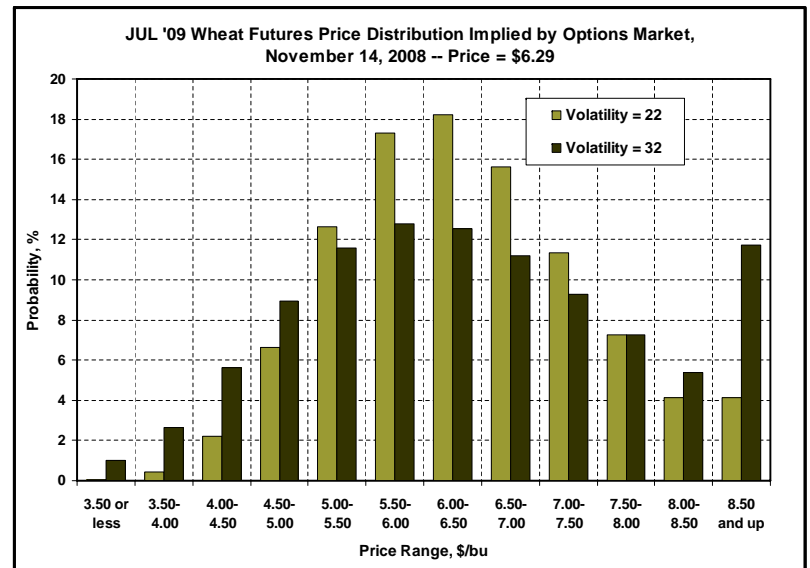
46

Things are similar in the soybean market...



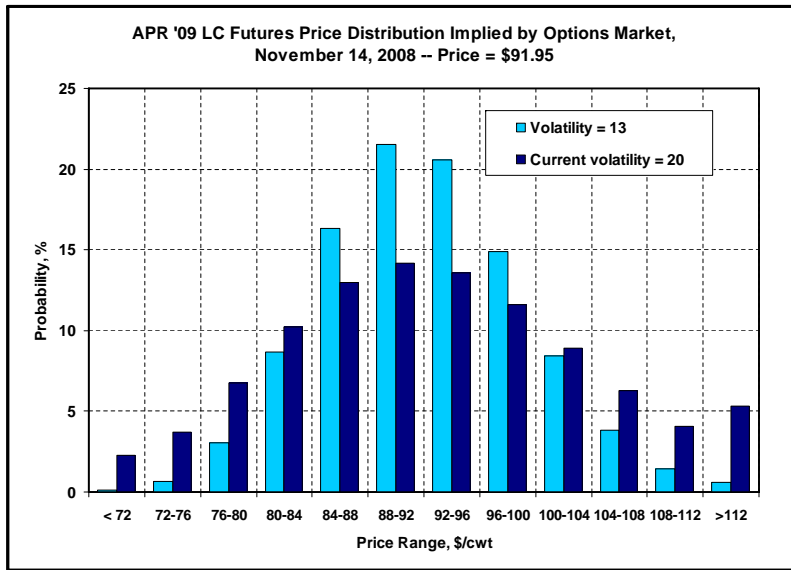
47

And the wheat market...



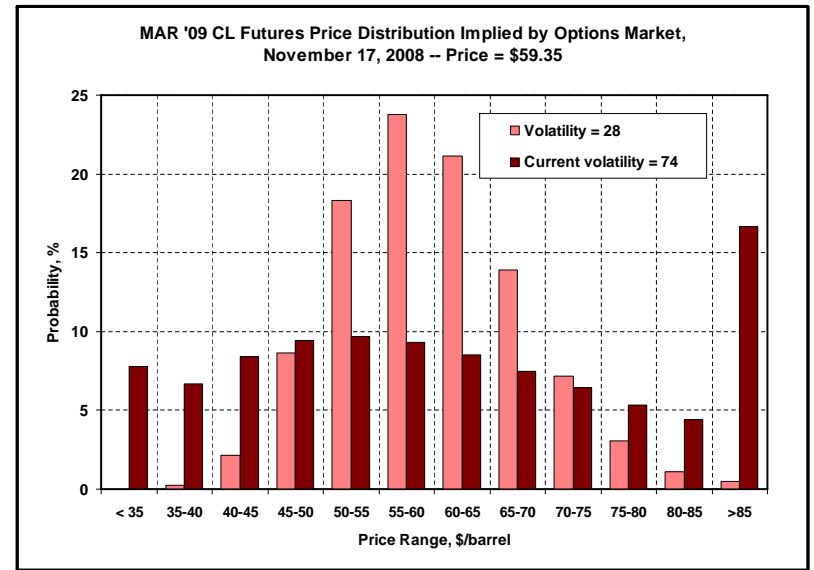
48

And the live cattle market...



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Even more so in the crude oil market...



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What does crop price variability imply in terms of profitability and land ownership returns?

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Price scenarios to consider with crop budget and lease analysis...

Options Market Based Price Expectations

Cumulative Probability	Expected Futures Price		
	Dec CN	Nov SB	Jul WHT
25.0%	\$3.36	\$7.08	\$5.30
33.3%	\$3.71	\$7.78	\$5.64
50.0%	\$4.43	\$9.20	\$6.29
66.7%	\$5.29	\$10.88	\$7.02
75.0%	\$5.84	\$11.96	\$7.46

	Corn	Milo	Soybean	Wheat
Basis*	-\$0.70	-\$0.90	-\$1.80	-\$1.00

Cumulative Probability	Expected Harvest Cash Price			
	Corn	Milo	Soybean	Wheat
25.0%	\$2.66	\$2.46	\$5.28	\$4.30
33.3%	\$3.01	\$2.81	\$5.98	\$4.64
50.0%	\$3.73	\$3.53	\$7.40	\$5.29
66.7%	\$4.59	\$4.39	\$9.08	\$6.02
75.0%	\$5.14	\$4.94	\$10.16	\$6.46

* Based on current forward contract bids and 11/14/08 futures prices

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2009 projected budgets for Southeast KS (prices modified)

CROP BUDGETS SHOWING TOTAL COSTS AND RETURNS

Crop/System	Wheat	Corn	Milo	Soybean	DB beans	Total	Per Acre	Per Acre
Planted acres of each crop	30.0	22.0	6.0	22.0	20	100.0	Planted	Tillable
Tillable acres per planted acre	1.00	1.00	1.00	1.00	0.00	80.0		
INCOME PER ACRE								
A. Yield per acre	45.0	110.0	85.0	35.0	20.0	---	---	---
B. Price per unit	\$5.29	\$3.73	\$3.53	\$7.40	\$7.40	---	---	---
C. Net government payments	\$11.39	\$11.39	\$11.39	\$11.39	\$0.00	\$911	\$9.11	\$11.39
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
F. Returns/acre ((A x B) + C + D + E)	\$249.44	\$421.69	\$311.44	\$270.39	\$148.00	\$27,538	\$275.38	\$344.22
COSTS PER ACRE								
1. Seed	\$14.40	\$40.56	\$14.22	\$34.91	\$40.00	\$2,978	\$29.78	\$37.22
2. Herbicide	3.42	35.41	20.50	9.48	19.90	1,611	16.11	20.14
3. Insecticide / Fungicide	24.00	0.25	5.05	0.00	0.00	756	7.56	9.45
4. Fertilizer and Lime	119.58	117.08	114.73	54.63	34.20	8,737	87.37	109.22
5. Crop Consulting	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
6. Crop Insurance	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
7. Drying	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
8. Miscellaneous	7.00	7.00	7.00	7.00	6.00	680	6.80	8.50
9. Machinery Expense	79.80	116.36	92.92	88.90	53.57	8,539	85.39	106.73
10. Non-machinery Labor	8.97	13.13	10.53	10.01	6.11	964	9.64	12.04
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
12. Land Charge / Rent	55.00	55.00	55.00	55.00	0.00	4,400	44.00	55.00
G. SUB TOTAL	\$312.17	\$384.79	\$319.95	\$259.92	\$159.78	\$28,664	\$286.64	\$358.30
13. Interest on 1/2 Nonland Costs	9.22	11.63	9.35	7.01	5.67	856	8.56	10.70
H. TOTAL COSTS	\$321.39	\$396.42	\$329.31	\$266.93	\$165.45	\$29,520	\$295.20	\$369.00
I. RETURNS OVER COSTS (F - H)	(\$71.95)	\$25.27	(\$17.87)	\$3.46	(\$17.45)	(\$1,983)	(\$19.83)	(\$24.78)
J. TOTAL COSTS/UNIT (H/A)	\$7.14	\$3.60	\$3.87	\$7.63	\$8.27	---	---	---
K. RETURN TO TOTAL COST ((I+13)/G)	-20.10%	9.59%	-2.66%	4.03%	-7.37%	-6.72%	-6.72%	-6.72%

10:48 AM 11/17/08

Income from crop share lease – Expected prices

ALTERNATIVE METHODS OF ESTIMATING CASH RENT

10:48 AM 11/17/08

Crop/System	Wheat	Corn	Milo	Soybean	DB beans	Total	Per Acre	Per Acre
Total tillable acre	----->					80.0	Planted	Tillable
Planted acres of each crop	30.0	22.0	6.0	22.0	20.0	100.0	Planted	Planted
A. Landowner's COST								
Land	\$55.00	\$55.00	\$55.00	\$55.00	\$0.00	\$4,400	\$44.00	\$55.00
Irrigation equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0.00	\$0.00
Total	\$55.00	\$55.00	\$55.00	\$55.00	\$0.00	\$4,400	\$44.00	\$55.00
B. Landowner's EQUITABLE SHARE RENT ---- risk adj factor 0.0%								
Total income	\$249.44	\$421.69	\$311.44	\$270.39	\$148.00	\$27,538	\$275.38	\$344.22
Landowner's share	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Landowner's income	\$83.16	\$140.59	\$103.83	\$90.15	\$49.34	\$9,181	\$91.81	\$114.76
Landowner operating expense	58.99	75.04	54.90	42.35	38.03	5,442	54.42	68.03
Income less operating expense	\$24.18	\$65.55	\$48.94	\$47.80	\$11.32	\$3,739	\$37.39	\$46.74
Less risk adjustment	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
Cash rent equivalent	\$24.18	\$65.55	\$48.94	\$47.80	\$11.32	\$3,739	\$37.39	\$46.74
C. Amount tenant CAN AFFORD TO PAY								
Total income	\$249.44	\$421.69	\$311.44	\$270.39	\$148.00	\$27,538	\$275.38	\$344.22
Total operating expense	\$266.39	\$341.42	\$274.31	\$211.93	\$165.45	\$25,120	\$251.20	\$314.00
Return to land and irr equip	(\$16.95)	\$80.27	\$37.13	\$58.46	(\$17.45)	\$2,417	\$24.17	\$30.22
Comparison of alternative cash rent methods								
Low	(\$16.95)	\$55.00	\$37.13	\$47.80	(\$17.45)	\$2,417	\$24.17	\$30.22
Average	\$20.74	\$66.94	\$47.02	\$53.75	(\$2.05)	\$3,519	\$35.19	\$43.99
High	\$55.00	\$80.27	\$55.00	\$58.46	\$11.32	\$4,400	\$44.00	\$55.00
Returns above all costs (profit)	(\$71.95)	\$25.27	(\$17.87)	\$3.46	(\$17.45)	(\$1,983)	(\$19.83)	(\$24.78)

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Impact Price Volatility has on Crop Returns per Tillable Acre¹

Cumulative probability ²	Return over total costs	Cash rent equivalent to landowner ³	
		\$/acre	(change from base)
50.0%	(\$24.78)	\$46.74	base base
25.0%	(\$111.68)	\$17.77	(\$28.97) -62.0%
33.3%	(\$82.89)	\$27.36	(\$19.37) -41.4%
66.7%	\$43.60	\$69.54	\$22.80 48.8%
75.0%	\$86.97	\$84.00	\$37.26 79.7%

¹ Returns do not account for crop insurance indemnity payments that might be received with lower prices.

² Estimate of where harvest-time futures prices could end up based on premiums in options market. Assumes corn, soybean, and wheat prices all move together.

³ Based on a 1/3 - 2/3 crop share arrangement (fertilizer, chemicals, seed on corn and soybeans, and herbicide/insecticide applications shared).

Relatively large swings in returns to landowner can occur due to price volatility (larger than normal?) – important everybody understands the risks involved.

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Summary

- In order to make good risk management decisions, it is important to align actual and perceived risks (with regards to market prices, producers routinely underestimate actual risk)
- Fuel prices have come down significantly, however volatility in options market suggest considerable risk exists in crude oil prices (hence diesel prices)
- Fertilizer prices are softening and industry forecasts suggest continued declines into 2009, but prices are still at extremely high levels (and prices at local levels have not dropped as much)
- When accounting for N, P, and crop prices, economic optimal fertilizer rates are considerably lower than KSU recommendations

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Summary

- Volatility, as measured by daily highs and lows, is up considerably for most all commodities
- Projected crop budgets based on current prices and costs do not support any increases in land rents (or land values)
- Increased volatility in crop markets results in high variability in income to landowners – need for good communication is more important than ever (i.e., make sure perceived and actual risks are in line)

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The screenshot displays the AgManager.info website, which provides agricultural economic information. The page features a navigation menu on the left with categories such as Agribusiness, Crops, Farm Management, Human Resources, Income Tax & Law, Livestock & Meat, Policy, Ag Econ News, Contributors, Programs, Sponsors, and Upcoming Events. The main content area is titled "AgManager.info" and includes a sub-header "Providing Information and Tools For The Competitive Business". A prominent banner for MAST (A PROGRAM FOR PROGRESSIVE PRODUCERS AND MANAGERS) is visible, along with a "GO" button. Below this, there are several featured articles and events, including a "2008 Insurance Workshop" in Salina, KS, a "2008 Kansas Income Tax Institute", and "Ag Profitability Conferences" in various locations. A "Recent Updates" section on the right lists several news items, such as "Lower Price will Trigger Many Revenue Insurance Contracts" and "Livestock Outlook Radio Program". A large black box with the text "Questions?" is overlaid on the bottom right of the screenshot.