Factors Affecting Shifts in Cotton Area in the U.S.

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- Outlook For Major Cost Items
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Sources of Cost Information

- **Extension Planning Budgets**, e.g., Texas' http://agecoext.tamu.edu/budgets/
  Mississippi's http://www.agecon.msstate.edu/research/budgets.php
  Georgia's http://www.ces.uga.edu/Agriculture/agecon/printedbudgets.htm
  Other States:
  http://www.cottoninc.com/ProductionEconomics/CottonProductionBudgets/

- **Your State's Farm Business Records Organization or strategic planning program,** e.g., A&M's FARM Assistance program, using your own records.

- **Texas A&M's Agriculture and Food Policy Center periodically publishes cost and financial information from representative cotton farming operations. Their reports can be found at** http://www.afpc.tamu.edu/pubs/

- **Interactive, on-line cost calculators, like these:**
  Texas Tech's http://www.aeco.ttu.edu/CER-Institute/Resourcepage.htm or
  Georgia's http://www.ces.uga.edu/Agriculture/agecon/interactive/cotton/general.html

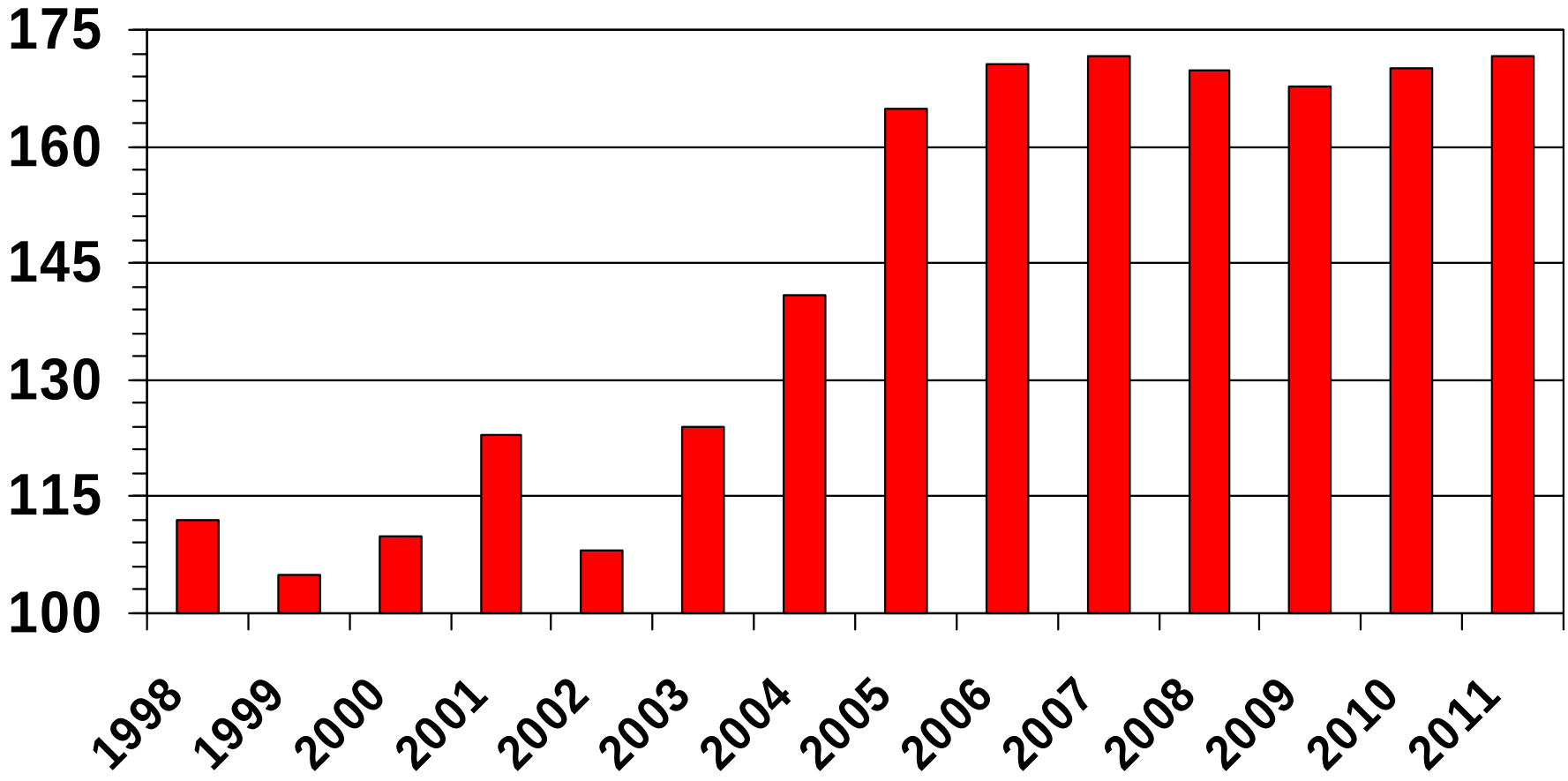
- **USDA's Economic Research Service conducts nationwide surveys of farmers, and publishes costs of production estimates based on those surveys. This information is available on-line at** http://www.ers.usda.gov/data/costsandreturns/

Economic Outlook for Representative Cotton Farms (From *AFPC, 2006*)

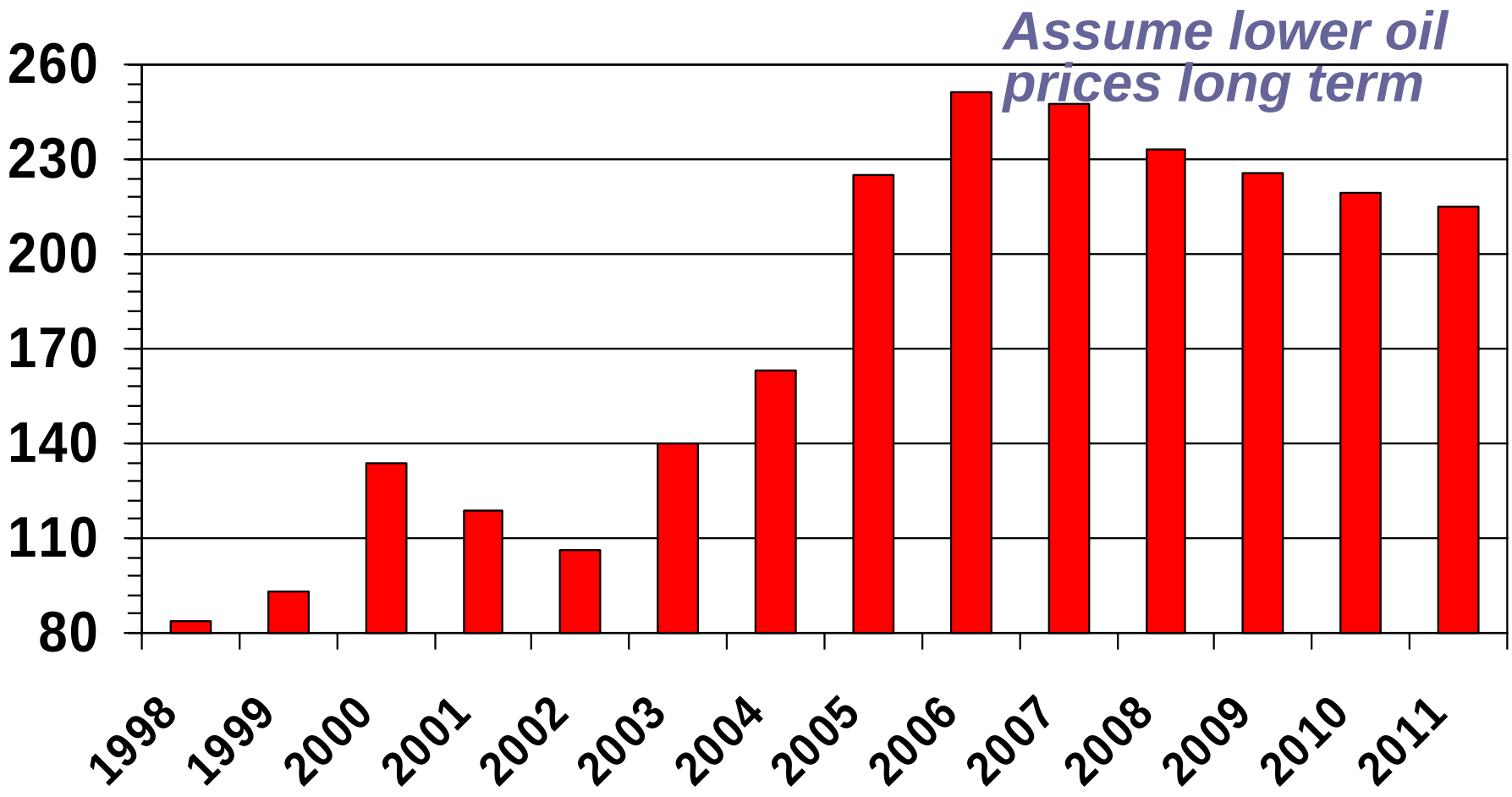
"The majority of cotton farms are in poor overall financial condition under the August 2006 Baseline... In addition [to drought], the poor financial performance is attributable in part to the <u>large increase in input prices</u>."

- $ **Energy** (fuel, fertilizer)
- $ **Machinery** (steel, energy)
- $ **Seed/tech fees**

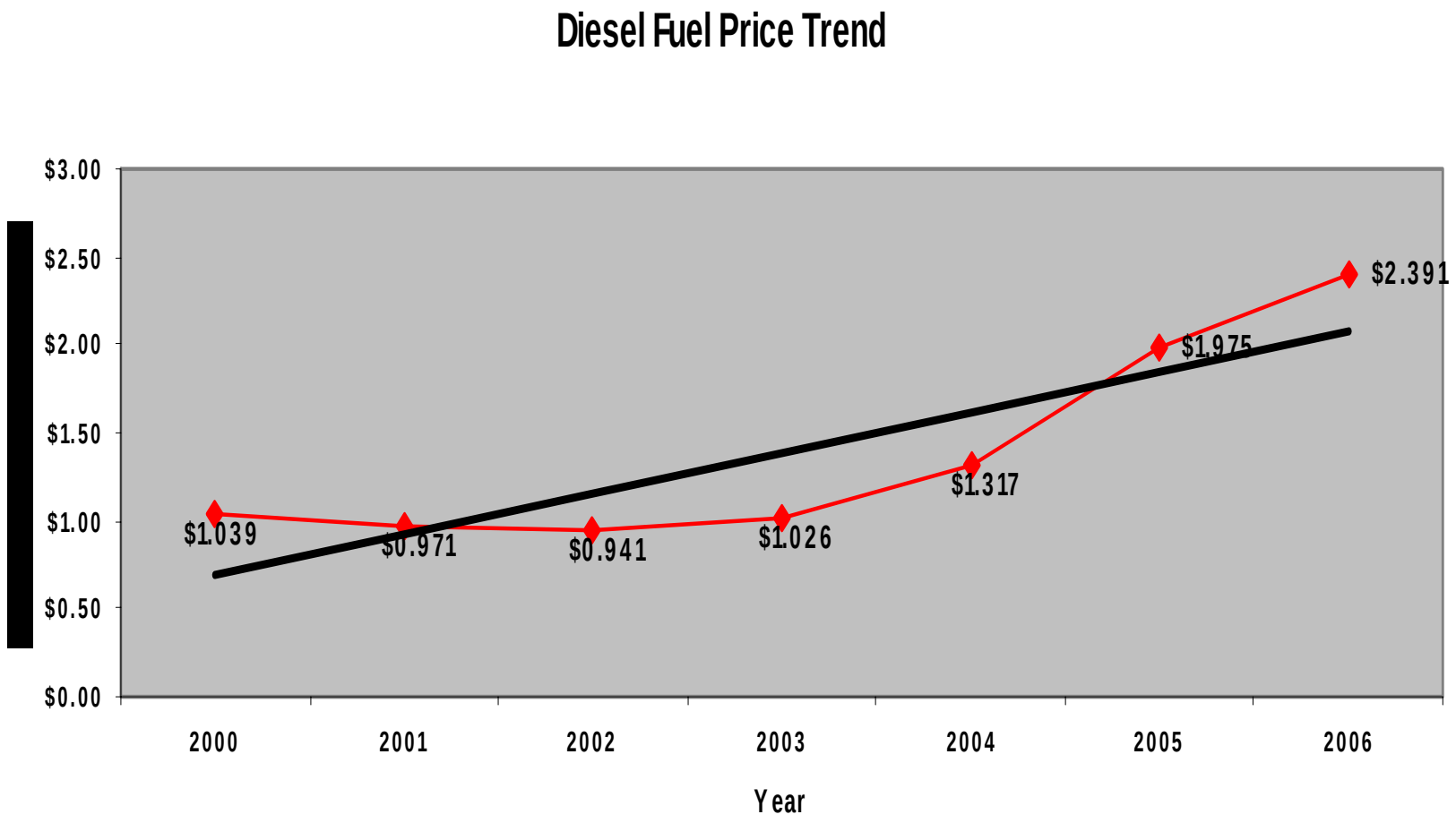
Index of Prices Paid for Fertilizer, 1998-2005 with FAPRI Projections, 2006-2011



Index of Prices Paid for Fuel, 1998-2005 with FAPRI Projections, 2006-2011

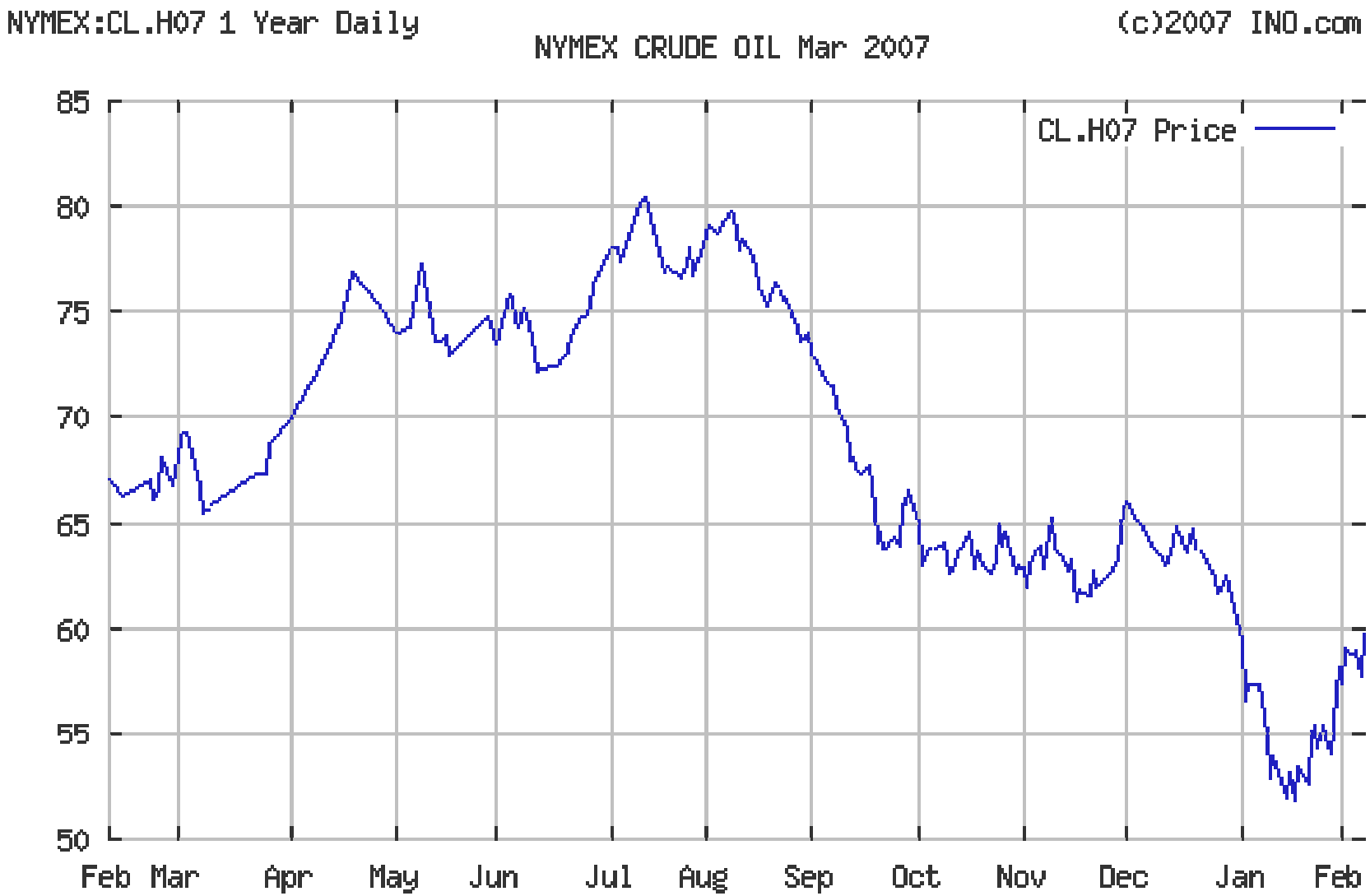


Long Term Trend of Diesel



NYMEX Mar07 Heating Oil

NYMEX Mar07 Crude Oil



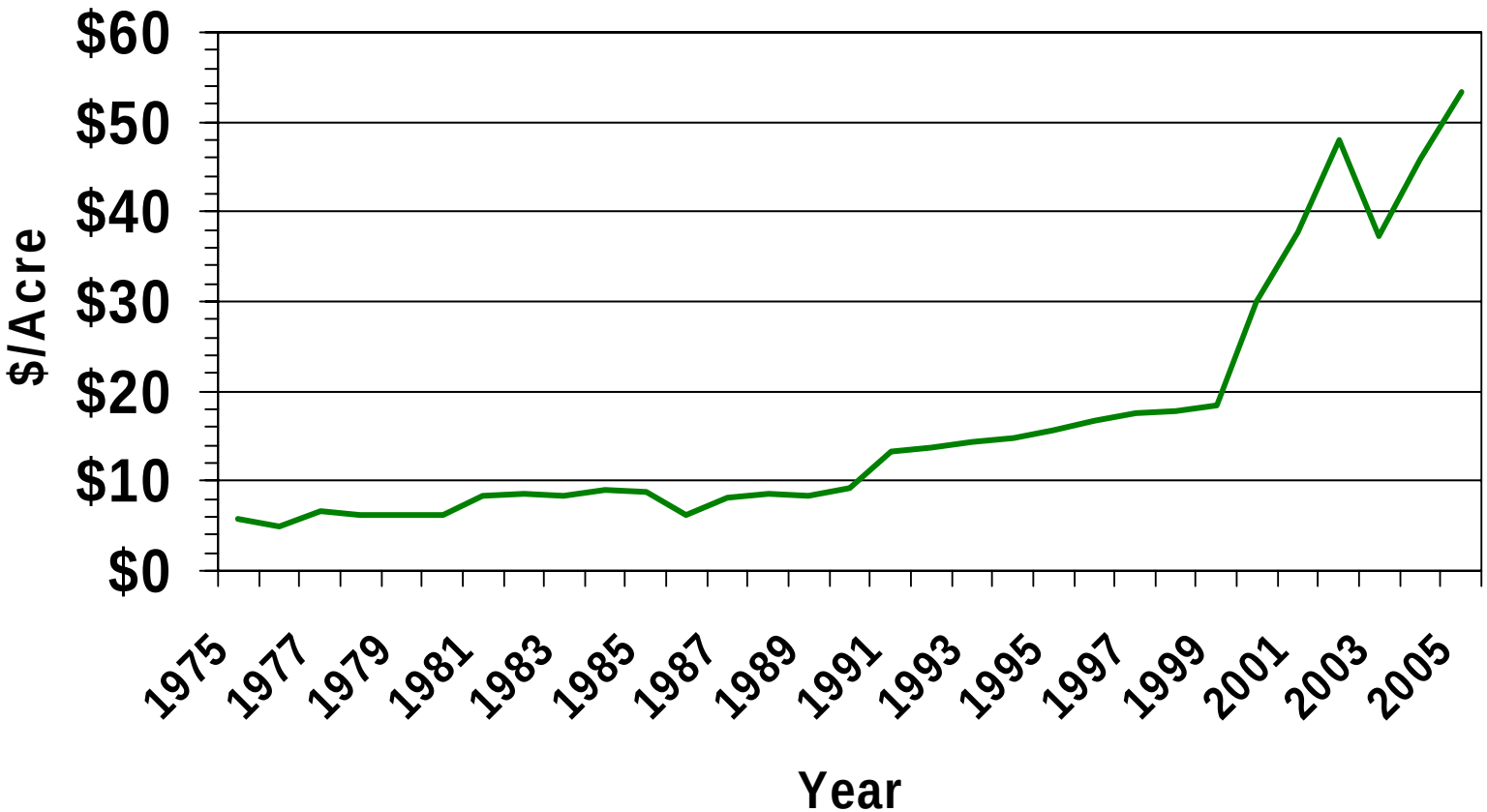
Is This Changing?

- **Heating Oil (diesel) and Crude Oil prices had been falling in Fall '06**
  - **Didn't have disruptive hurricanes in '06**
  - **Late 2006 was very mild in the Northeast so reduced demand for home heating oil and large oil inventories**
- **The advent of colder weather in Jan-Feb. brought nearby prices back up**
- **Recent opposing forces :**
  - **Expected reductions in distillate/gasoline inventory, but expected rise in crude oil inventories**
  - **Tension with Iran & snowy weather in Northeast**

Does It Matter? It Depends…

Diesel Price Variations and Net Returns Above Total Specified Expenses					
		Return Per Acre Above Total Specified Expenses			
Diesel Price Variation		Cotton	Soybean	Soy/Wheat	Corn
-25%	$1.81	$41.30	$160.29	$201.68	$119.26
-20%	$1.93	$39.47	$159.67	$199.16	$117.04
-15%	$2.05	$37.65	$159.03	$196.63	$114.82
-10%	$2.17	$35.83	$158.39	$194.11	$112.60
-5%	$2.29	$34.01	$157.76	$191.58	$110.38
Actual	$2.41	$32.18	$157.15	$189.08	$108.18
5%	$2.53	$30.36	$156.50	$186.54	$105.94
10%	$2.65	$28.54	$155.87	$184.02	$103.72
15%	$2.77	$26.72	$155.23	$181.51	$101.50
20%	$2.89	$24.89	$154.60	$178.99	$99.28
25%	$3.01	$23.07	$153.97	$176.48	$97.06

USDA Estimates of U.S. Cotton Seed Expense Per Acre, 1975 - 2005



NOTE: MSU Delta Budgets for 2007 project $75/acre for BG/RR & BGII Flex systems

Source: USDA/ERS/NASS
Note: These represent weighted avg. seed expenses across the U.S., including tech fees
Note: Unadjusted for inflation

Representative Delta Cotton Budget:

8R-38" Conservation Tillage, BtRR, Estimated for 2007.
Source: Miss. State Univ.

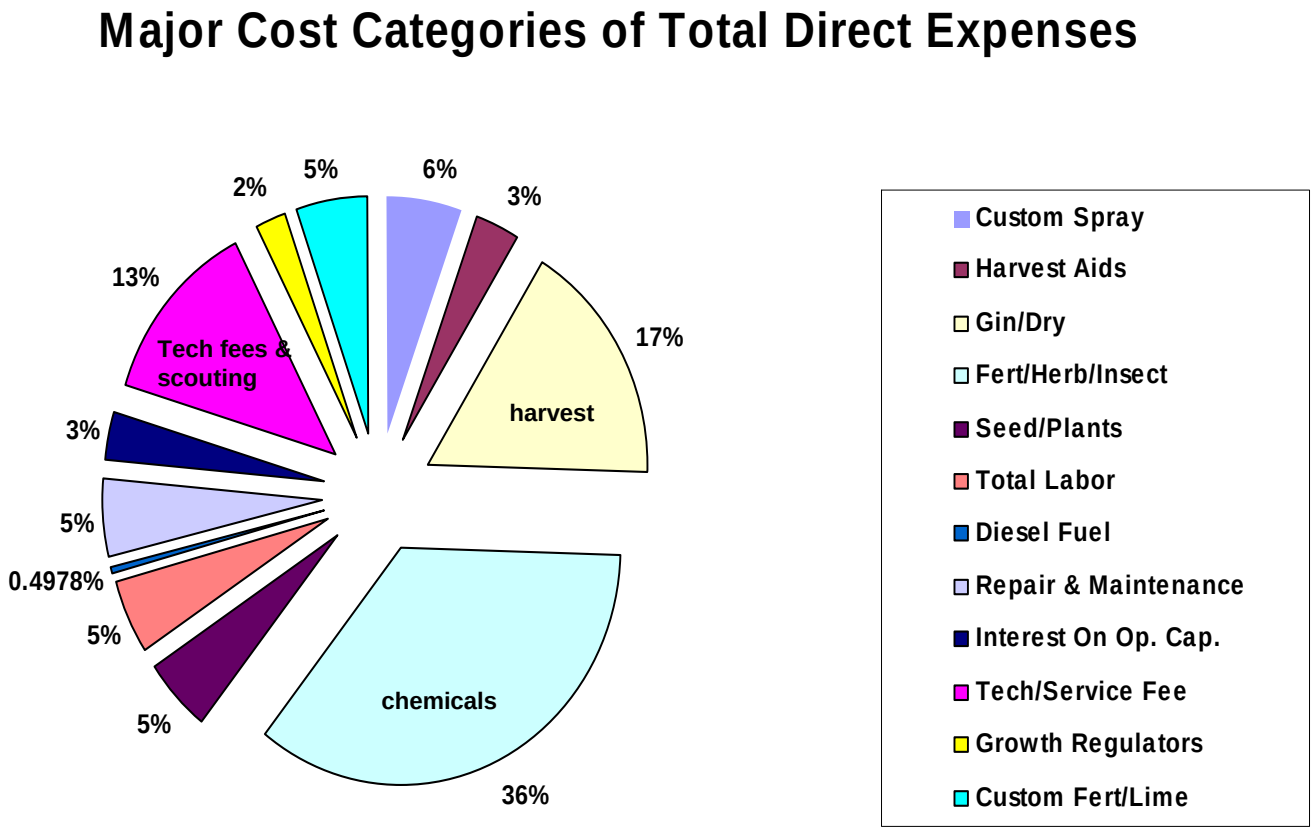
ITEM	UNIT	PRICE (dollars)	QUANTITY	AMOUNT (dollars)
Income				
Cotton Lint	lb.	0.55	1100	605.00
Cotton Seed	lb.	0.04	1350	58.05
				- - - - - - -
Total Income				$663.05
Direct Expenses				
Custom Spray	acre	27.00	1	27.00
Harvest Aids	acre	15.51	1	15.51
Gin/Dry	acre	81.00	1	22.95
Fertilizers	acre	75.63	1	75.63
Herbicides	acre	44.09	1	44.09
Insecticides	acre	50.58	1	50.58
Seed/Plants	acre	23.10	1	23.10
Technology Fee	acre	54.50	1	54.50
Growth Regulators	acre	11.22	1	11.22
Service Fee	acre	7.00	1	7.00
Custom Fert/Lime	acre	25.00	1	25.00
Hand Labor	hour	6.44	0.6955	4.49
Operator Labor	hour	9.41	1.3672	12.89
Unallocated Labor	hour	9.39	1.0937	10.28
Diesel Fuel	gallon	2.41	15.1853	36.60
Repair & Maintenance	acre	25.47	1	25.47
Interest On Op. Cap.	acre	16.36	1	16.36
				- - - - - - -
Total Direct Expenses				**$520.72**
Returns Above Direct Expenses				$142.33
Total Fixed Expenses				$110.15
				- - - - - - -
Total Specified Expenses				**$630.87**
Returns Above Total Specified Expenses				**$32.18**

Total Direct Expenses: $521/acre

Total Expenses: $630/acre

Net Returns: $32/acre

Delta Cotton Budget Breakdown of $631/ac. in Total Specified Expenses



Point: Again, fuel is a relatively small share of cost

Point: Huge share devoted to fertility and pest management inputs. How well you manage/implement these technologies gives you more control over costs.

Calculation of Breakeven Prices: Delta Crops Example

Crop	To Cover Total Direct Costs	To Cover Total Specified Expenses
Cotton	$0.47	$0.57
Soybeans	$2.59	$3.14
Soybeans/ Wheat	$2.96	$3.58
Corn	$2.07	$2.43

Comparison of Delta Cotton with Alternative Delta Crops

What price of cotton (market+LDP) is necessary to break-even with corn, soybeans, or soybean-wheat rotation? (As of early January)

Essentially asking for the P_{cot} that solves this equation of net returns: $P_{cot}*Y_{cot} - C_{cot} = P_{corn}*Y_{corn} - C_{corn}$

Pcot =	$0.67	$0.72	$0.75
	to BE	to BE	to BE
	w/ Corn	w/ Soy	w/ SW
Ycot	1100	lbs	
TCcot	$ 631.00	per acre	
NRcorn	$ 108.00	per acre	
NRsoy	$ 157.00	per acre	
NRsw	$ 189.00	per acre	

Comparison of Delta Cotton with Alternative Delta Crops

What price of cotton (market+LDP) is necessary to break-even with corn, soybeans, or soybean-wheat rotation? (As of early Tuesday morning with $4.10/bu for Dec07 corn and $8.17/bu for Nov07 soybeans.)

		Cotton		
	Per Acre	Breakeven		
N. R. corn	$309.50	**$0.86**	**to BE with corn**	
N. R. soy	$252.50	**$0.80**	**to BE with soybeans**	

Breakeven Prices: Examples from Texas Gulf Coast

Crop	To Cover Total Direct Costs	To Cover Total Specified Expenses
Grain Sorghum (Upper Coast)	$2.79/cwt	$3.36/cwt
Corn (Upper Coast)	$1.62/bu	$1.95/bu
Cotton (Upper Coast)	$0.44/lb	$0.48/lb
Grain Sorghum (Lower Coast)	$3.10/cwt	$3.91/cwt
Cotton (Lower Coast)	$0.44/lb	$0.47/lb

Point: Feedgrains look good (if feasible), but cotton is still viable. Implies marginal, but not wholesale, cotton declines

Breakeven Prices:

Southern High Plains Pivot Irrigated Example

Break-Even Prices for Texas SHP			
Projected for 2007			
Pivot Irrigated Cotton			
		Direct	Total
Yield	LBS	Cost	Cost
75%	825	$0.648	$0.795
90%	990	$0.550	$0.673
100%	**1100**	**$0.501**	**$0.611**
110%	1210	$0.461	$0.561
125%	1375	$0.412	$0.501
Irrigated Corn			
		Direct	Total
Yield	BU	Cost	Cost
75%	150.00	$3.531	$4.401
90%	180.00	$2.986	$3.711
100%	**200.00**	**$2.713**	**$3.366**
110%	220.00	$2.490	$3.083
125%	250.00	$2.222	$2.744

Breakeven Prices:

Southern High Plains Drip Irrigated Example

Break-Even Prices for Texas SHP			
Projected for 2007			
Drip Irrigated Cotton			
		Direct	Total
Yield	LBS	Cost	Cost
75%	1125	$0.536	$0.689
90%	1350	$0.457	$0.584
100%	**1500**	**$0.417**	**$0.531**
110%	1650	$0.385	$0.489
125%	1875	$0.346	$0.437
Irrigated Corn			
		Direct	Total
Yield	BU	Cost	Cost
75%	150.00	$3.531	$4.401
90%	180.00	$2.986	$3.711
100%	**200.00**	**$2.713**	**$3.366**
110%	220.00	$2.490	$3.083
125%	250.00	$2.222	$2.744

2007 Acreage Implications

- Simple budget/breakeven analysis strongly favors corn, sorghum, soybeans, and wheat vs. cotton
- This result is tempered for operations with large fixed assets or integration, e.g., harvesters, gins, warehouses, oil mills, etc.
- Other constraints on southern grain production include availability of seed, storage, local markets, and grower familiarity

MidSouth Implications

- MidSouth has the largest disparity between cotton and alternative revenues
- Feasibility of soybean production in MidSouth increases substitution possibilities compared to other regions