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## Wells Fargo Economics Row Crop Markets – September 2008

### Summary: What It Does Really Cost?

Too many farmers have been blinded by the absolute prices of both inputs and crops. The price of anything is what you have to “give up” to get it. What will you need to “give up” to get the crop in for 2009?

To answer this question, we should look some hard numbers. The best detailed database for crop input costs and variability comes from The Center for Farm Financial Management from the University of Minnesota. You should bookmark their website at <http://www.finbin.umn.edu/>. This outstanding group has been collecting consistent and detailed records from a large group of farmers since 1993 in searchable database. The data can be broken out a couple of ways.

I think the best segment to look at is the “cash rent” segment. It has come to dominate the rental market, and it avoids the issue of what should you pay yourself for your own land. The “opportunity cost” of self-owned ground invites too many fudges such as historical purchase price versus current market price, and it avoids asking what rate of return would be appropriate.

Cash rent has its own issues such as mixing current market rates with long-term relationships and family deals. But, at the end of the day, it certainly represents a clearer picture of what you need to give up to get an acre to work.

From 2003 to 2007 for corn, Minnesota farmers needed to give up 153 bushels corn/acre to generate 171 bushels corn/acre. During the same time period for soybeans, they needed to give up 37.1 bushels soybeans/acre to generate 42.7 bushels soybeans/acre. Where did those numbers come from? I took last five years of dollar data and converted them into bushel basis. The tables are attached to this report, and I am happy to send anyone the Excel files if they want to work the data for themselves.

Corn generated an average 17.6 bushel per acre “gain” in input-output versus soybean’s gain of 5.7 bushels per acre. Over the last 25 years, the average national cash soybean to cash corn price ratio has been 2.57. If you multiple soybeans’ 5.7 bushel input-output gain by the price differential, you get an equivalent “corn gain” of 14.5 bushels to the acre. Not exactly equal, but it is roughly equivalent over five year period with plenty of yield volatility. It also points out why farmers love to plant corn. It has given them an income edge.

What should we expect for the future?

More of the same, input costs (primarily cash rents, seed, fertilizer and chemical) will increase until the input-output ratio gets too thin for farmers to push inputs. Ultimately, farmers compete with farmers. In 2007, cash rent “only” claimed 20% of the yield. Over the last 14 years, it averaged 28%. In poor yield years such as 1993 and 2001, it took 54% and 39% respectively. If 28% is the average and Minnesota cash corn averages \$5/bushel, the cash rents would calculate out at \$224/acre in 2009 versus 2007’s \$110/acre. If you double the output price, you should expect to double the cash rent price. How fast we get there is another question.

<b>Minnesota Corn on Cash Rent</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Avg in bushels '03-'07</b>	<b>08e</b>
Yield per acre (bu.)	153	161	179	167	154	163	159
Value per bu.	\$ 2.21	\$ 2.05	\$ 2.03	\$ 2.87	\$ 3.64		\$ 4.54
Total product return per acre	153	161	179	167	154	163	159
Miscellaneous income per acre	2	10	20	2	4	8	4
Gross return per acre	155	171	199	169	158	171	163
<b>Direct Expenses (in bushels)</b>							
Seed	18.6	21.1	23.9	18.4	16.5	19.7	\$ 89
Fertilizer	22.1	27.4	31.4	24.9	21.9	25.5	\$ 116
Crop chemicals	12.0	12.8	11.9	7.8	5.7	10.0	\$ 45
Crop insurance	4.3	5.8	4.9	3.8	5.5	4.9	\$ 22
Drying fuel	3.0	10.4	6.7	4.2	2.1	5.3	\$ 24
Fuel & oil	5.0	6.8	9.3	7.1	6.2	6.9	\$ 31
Repairs	9.3	10.7	11.5	8.3	7.7	9.5	\$ 43
Custom hire	1.6	2.0	2.4	1.7	1.2	1.8	\$ 8
Land rent	42.3	46.5	49.5	35.8	30.2	40.9	\$ 185
Machinery leases	0.5	0.6	0.5	0.4	0.3	0.5	\$ 2
Hauling and trucking	-	0.2	0.3	0.3	0.3	0.2	\$ 1
Marketing	0.3	0.5	0.4	0.5	0.3	0.4	\$ 2
Operating interest	3.0	3.2	4.2	4.0	3.7	3.6	\$ 16
Miscellaneous	0.6	0.7	0.7	0.5	0.6	0.6	\$ 3
Total direct expenses / acre	122.8	148.9	157.3	117.8	102.1	129.8	\$ 589
Return over direct exp / acre	32.7	22.3	41.6	50.9	56.3	40.7	\$ 185
Total direct net of cash rent	80.5	102.4	107.8	82.0	71.9	88.9	\$ 404
<b>Overhead Expenses (in bushels)</b>							
Total overhead exp. / acre	23.1	25.5	28.4	20.5	18.2	23.2	\$ 105
Total dir & ovhd exp. / acre	145.9	174.4	185.7	138.3	120.3	152.9	\$ 694
Net return per acre	9.5	(3.2)	13.2	30.4	38.1	17.6	\$ 80
Government payments	11.1	11.5	18.3	10.1	5.3	11.3	\$ 51
Net return with govt pmts	20.6	8.3	31.5	40.5	43.4	28.9	\$ 131
Labor & management charge	11.9	12.7	14.3	10.0	9.0	11.6	\$ 53
Net return over lbr & mgt	8.7	(4.4)	17.2	30.4	34.3	17.3	\$ 78
<b>Cost of Production</b>							
Total direct expense per bu.	0.80	0.93	0.88	0.71	0.66	0.80	
Total dir & ovhd exp per bu.	0.95	1.09	1.04	0.83	0.78	0.94	
Less govt & other income	0.86	0.95	0.82	0.76	0.72	0.82	
With labor & management	0.94	1.03	0.90	0.82	0.78	0.89	

<b>MN Soybeans on Cash Rent</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Avg in bushels '03-'07</b>	<b>08e</b>
Yield per acre (bu.)	33.4	34.0	46.8	45.5	43.5	40.6	44.8
Value per bu.	\$ 6.62	\$ 5.54	\$ 5.66	\$ 6.03	\$ 9.28	\$ 6.63	\$ 11.60
Other product return / acre	0	-	0.04	0.01	0.01		
Total product return / acre	33.3	34.0	46.8	45.4	43.4	40.6	45
Miscellaneous income / acre	2.5	5.9	0.7	0.9	0.6	2.1	1.5
Gross return / acre	35.8	39.9	47.5	46.3	44.1	42.7	46
<b>Direct Expenses (in bushels)</b>							
Seed	3.6	4.6	5.3	5.1	3.6	4.4	\$ 51
Fertilizer	0.7	0.9	0.9	0.9	0.6	0.8	\$ 9
Crop chemicals	3.0	3.0	3.4	3.0	2.0	2.9	\$ 34
Crop insurance	1.5	2.3	2.0	2.0	1.6	1.9	\$ 22
Fuel & oil	1.3	1.9	2.5	2.6	1.8	2.0	\$ 23
Repairs	2.4	3.0	3.1	3.0	2.1	2.7	\$ 32
Custom hire	0.5	0.5	0.6	0.5	0.3	0.5	\$ 6
Land rent	12.5	15.4	15.8	15.1	10.4	13.8	\$ 161
Machinery leases	0.1	0.2	0.1	0.1	0.1	0.1	\$ 1
Marketing	0.1	0.1	0.1	0.1	0.1	0.1	\$ 1
Operating interest	0.7	0.8	1.1	1.4	0.9	1.0	\$ 11
Miscellaneous	0.1	0.2	0.2	0.2	0.2	0.2	\$ 2
Total direct exp. / acre	26.7	32.9	35.3	33.9	23.7	30.5	\$ 354
Return over direct exp / acre	9.1	7.0	12.2	12.4	20.4	12.2	\$ 142
<b>Overhead exp.</b>							
Total overhead exp. / acre	6.0	7.1	7.6	7.3	5.0	6.6	\$ 76
Total dir & ovhd exp. / acre	32.7	40.0	42.8	41.2	28.7	37.1	\$ 430
Net return / acre	3.2	(0.1)	4.7	5.2	15.4	5.7	\$ 66
Government payments	3.3	3.8	5.0	4.0	1.9	3.6	\$ 42
Net return with govt pmts	6.5	3.7	9.7	9.1	17.3	9.2	\$ 107
Labor & management charge	3.1	3.7	3.9	3.7	2.6	3.4	\$ 40
Net return over lbr & mgt	3.4	(0.0)	5.7	5.4	14.7	5.8	\$ 68

**Agricultural Cash Prices Forecast**  
**Wheat – CBOT Futures Price**  
**September 08**

**Overview:** The recent softness in the wheat market stems from the recovery of global carry-out stocks and the strength of the US dollar. Generally, wheat demand as a primary food grain remains very stable even in poor economic situations. This stability represents a two-edged sword in that wheat demand doesn't improve significantly with a better economic outlook.

With 44% of US wheat production destined for the export market, the recent recovery of the US dollar versus its major competitors (Canada, Argentina, Australia and the EU) represents a major challenge. Often, the market over reacts to developments giving domestic buyers an opportunity to cover their needs at price levels that lock in strong margins.

It is likely that even with the recovery of acres from the CRP program that planted acres of wheat will drop next year by 2 to 4 percent. Farmers will find more attractive returns in both soybeans and corn even with higher input costs.

Globally, production will continue to grow as FSU and others continue to make investments in wheat production. There has been a tremendous amount of US and European equipment sold into that production area. Between better equipment and inputs, production will increase adjusting for weather issues.

Over the intermediate time frame, wheat will receive most of its support from acreage competition with soybeans and corn. Longer-term, increased production in FSU countries will be a major pressure.

**Expected Price Range (next 12 months): CBOT Futures                   \$6.25 to \$8.35 per bushel**  
**NASS Spot   \$5.70 to \$7.65 per bushel**

**Higher Prices**

- Historically high corn prices

**Lower Prices**

- Increased domestic and global production
- Decreased US exports
- Rising ending stocks
- Strengthening US dollar

**US Supply and Demand**

Wheat	August	September	Change	
Beginning stocks:	0.31	0.31	-	
Production	2.46	2.46	-	
Imports	0.10	0.10	-	
<b>Total supply</b>	<b>2.87</b>	<b>2.87</b>	-	
Domestic use	1.29	1.29	-	
Exports	1.00	1.00	-	
<b>Total use</b>	<b>2.294</b>	<b>2.294</b>	-	
Ending stocks	0.57	0.57	-	25%

**2008/09 Crop Year Billions of Bushels**

**Global Supply and Demand**

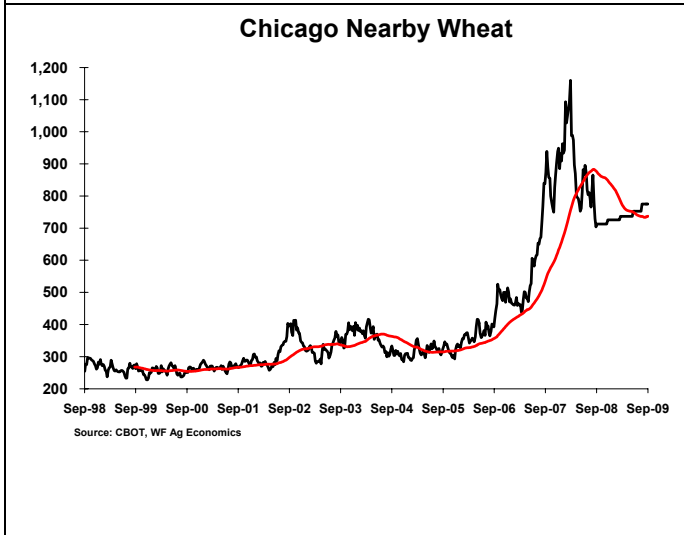
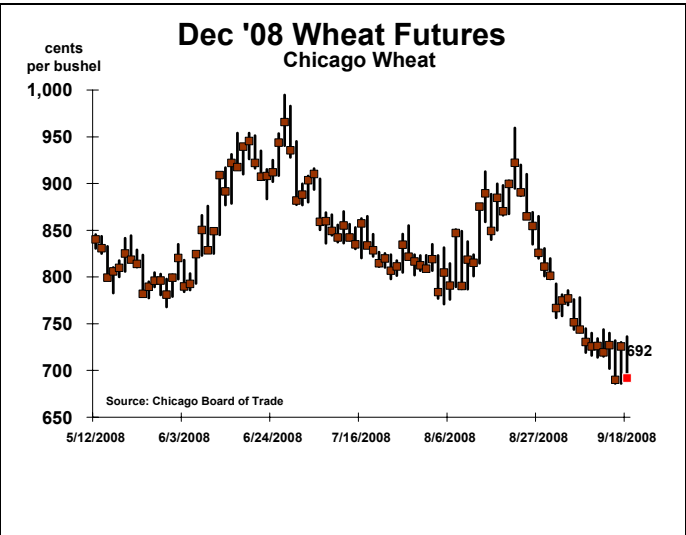
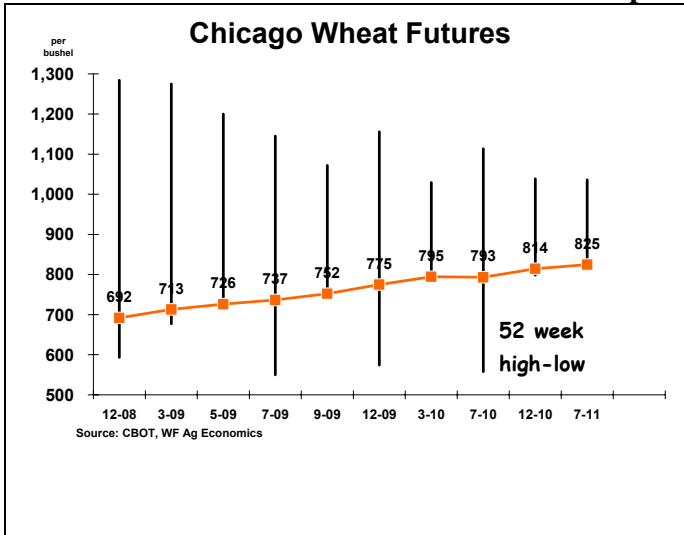
Wheat	August	September	Change	
Beginning stocks:	115.2	118.5	3.3	
Production	670.8	676.3	5.5	
Imports	118.6	120.2	1.7	
<b>Total supply</b>	<b>786.0</b>	<b>794.8</b>	<b>8.8</b>	
Total use	649.8	654.9	5.1	
Exports	121.3	122.9	1.6	
<b>Total use</b>	<b>649.8</b>	<b>654.9</b>	<b>5.1</b>	
Ending stocks	136.2	139.9	3.7	21%

**2008/09 Crop Year Millions MTs**

# Agricultural Cash Prices Forecast

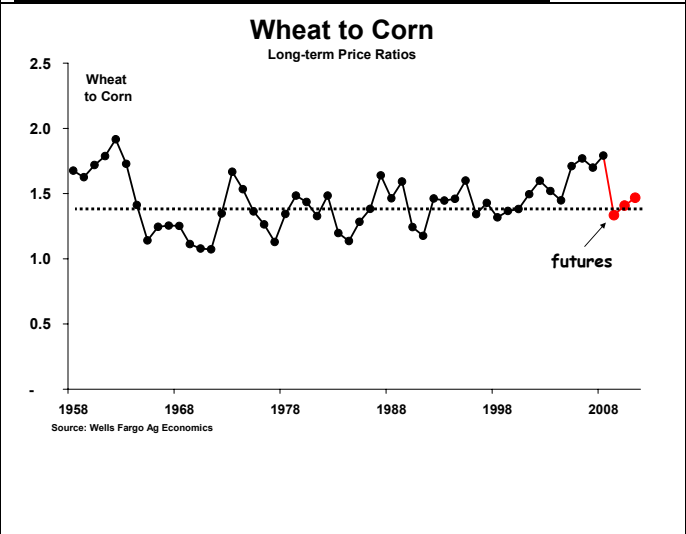
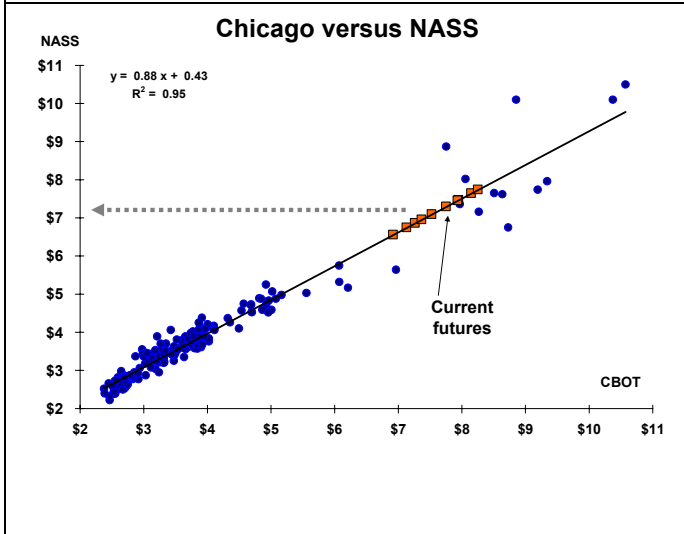
## Wheat – CBOT Futures Price

### September 08



### CBOT Nearby Wheat

Year	Min	Max	Spread
98	2.33	2.97	0.64
99	2.28	2.81	0.53
00	2.47	2.89	0.42
01	2.58	4.04	1.46
02	2.78	4.14	1.36
03	3.00	4.16	1.17
04	2.84	3.57	0.73
05	2.93	4.16	1.23
06	3.93	7.67	3.75
07	7.04	11.60	4.56
08 prj	7.13	7.75	0.62



**Agricultural Cash Prices Forecast**  
**#1 Yellow Soybean, Central Illinois Spot**  
**September 08**

**Overview:** Soybeans have suffered the collateral damage from the corn and energy markets and stronger dollar. Biodiesel is not yet the driver of the soybean market like ethanol in the corn complex. The connection that drives the linkage remains the relative competition for acres.

At the moment, the market seems to be offering major discounts for soybeans. 2009's soybean to corn ratio at 2.05 is well below the historical average of 2.57. And, 2010's ratio of 1.93 would be the lowest since 1959's ratio of 1.89.

There are two ways to approach this deviation from historical ratios. First, the market is nuts. If you believe this, you should not sell beans until it gets back into a more historical balance. Second, the market is onto something. If fertilizer and seed costs make corn too expensive to plant, the market will get all the soybean acres it needs at these ratios. This means that soybeans will be trading relative to the corn complex regardless of the tight supplies.

Looking at the input-output ratios, soybeans definitely will be cheaper to plant. They simply have less exposure to fertilizer and chemical expenses as a percentage of the total cost. This can be seen with the current year-to-date price ratios and their impact a projected margins. Year-to-date, Minnesota cash soybeans to cash corn has yielded a 2.55 price ratio which is very similar to the historical ratio.

If we double corn's fertilizer costs from 2008 to 2009 and apply the market's current 2009 soybean to corn price ratio of 2, soybeans and corn each earn about \$100 per acre before overhead. This represents the market at work. It hates to leave easy money on the table.

**Expected Price Range (next 12 months): CBOT Futures      \$9.50 to \$12.75 per bushel**  
**NASS Cash    \$8.70 to \$11.40 per bushel**

**Higher Prices**

- A relatively weak dollar continues to support exports
- Domestic stocks-to-usage at 5%
- High priced corn

**Lower Prices**

- Relatively high global stocks-to-usage at 22%
- Brazilian production growth

**US Supply and Demand Estimates**

Soybeans	August	September	Change
Beginning stocks:	0.14	0.14	0.01
Production	2.97	2.93	(0.04)
Imports	0.01	0.01	-
<b>Total supply</b>	<b>3.12</b>	<b>3.08</b>	<b>(0.03)</b>
Domestic use	1.98	1.95	(0.03)
Exports	1.00	1.00	-
<b>Total use</b>	<b>2.98</b>	<b>2.95</b>	<b>(0.03)</b>
Ending stocks	0.14	0.13	(0.00)

**2008/09 Crop Year Billions of Bushels**

5%

**Global Supply and Demand Estimates**

Soybeans	August	September	Change
Beginning stocks:	49.3	50.1	0.9
Production	237.4	238.0	0.6
Imports	76.2	77.5	1.2
<b>Total supply</b>	<b>286.6</b>	<b>288.1</b>	<b>1.5</b>
Global use	237.9	236.8	(1.1)
Exports	75.7	77.6	1.9
<b>Total use</b>	<b>237.9</b>	<b>236.8</b>	<b>(1.1)</b>
Ending stocks	49.3	51.2	2.0

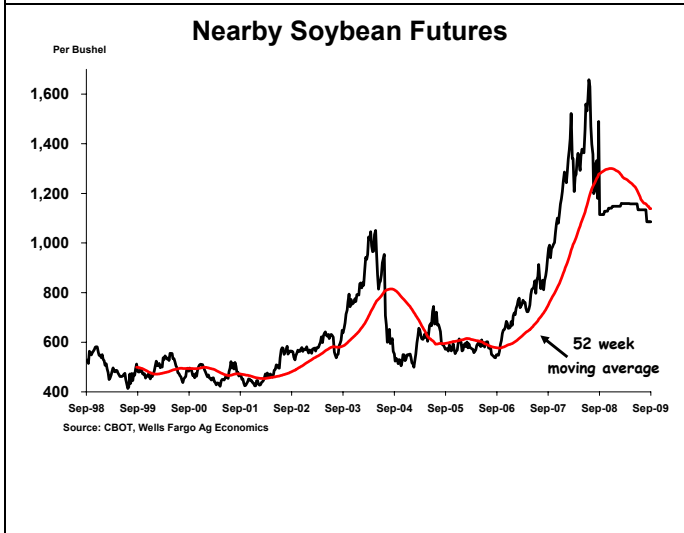
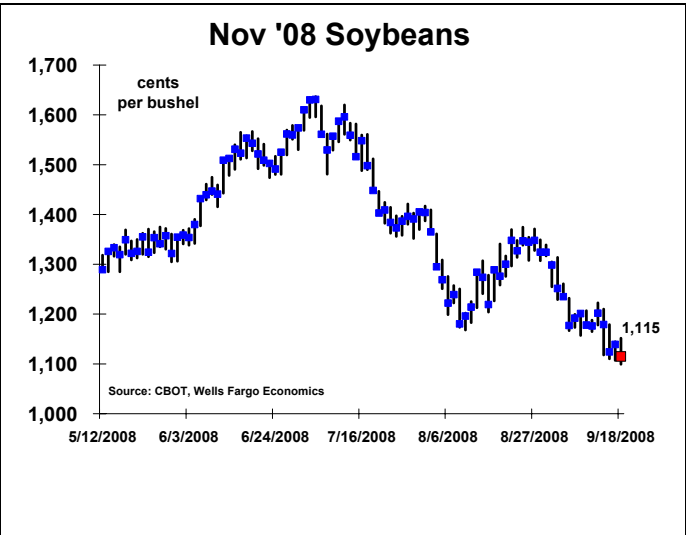
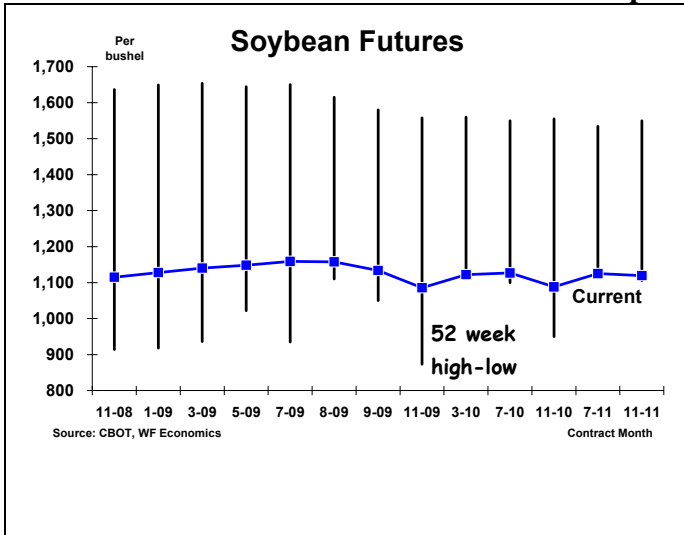
**2008/09 Crop Year Millions MTs**

22%

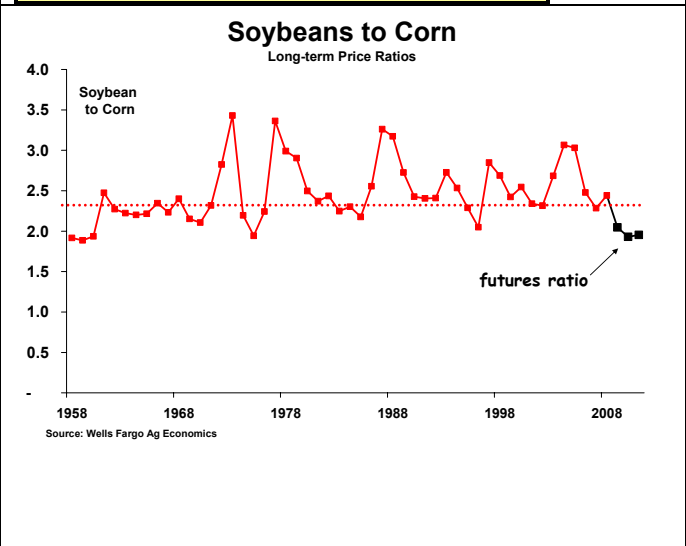
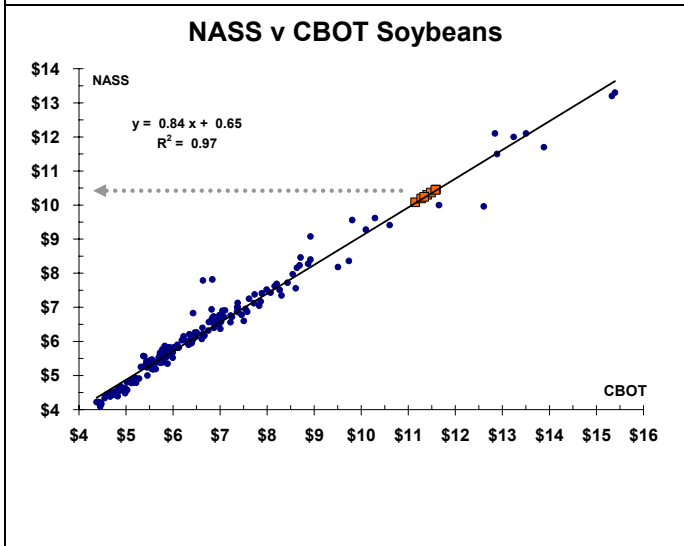
# Agricultural Cash Prices Forecast

## #1 Yellow Soybean, Central Illinois Spot

### September 08



CBOT Nearby Soybean			
Year	Min	Max	Spread
98	4.14	5.82	1.69
99	4.37	5.55	1.18
00	4.23	5.22	0.99
01	4.24	5.83	1.59
02	5.29	6.42	1.14
03	5.95	10.51	4.56
04	5.00	7.45	2.45
05	5.39	6.13	0.75
06	5.37	9.13	3.76
07	8.91	16.58	7.67
08 prj	10.86	11.59	0.73



**Agricultural Cash Prices Forecast**  
**#2 Yellow Corn, Central Illinois Spot**  
**September 08**

**Overview:** Corn continues to get its price signal from the energy markets. The spreads between ethanol and gasoline have improved in ethanol's favor. The real problem is that a \$45/barrel drop in crude oil has pushed down both gasoline and ethanol relative value. At the moment, corn has fallen faster than ethanol helping improve margins for ethanol producers. Those margins are still historically weak but positive.

Outside of the ethanol complex, corn has weakened on the stronger dollar and rocky economic outlook. Much of the volatility has come from non agricultural factors such as index funds trading relative positions within their larger portfolios.

The USDA remains bullish on the roll-out of additional ethanol production. Through June 2008, ethanol producers supplied 7.75 billion gallons for the previous 12 months. Using industry standard yields, this would have consumed 2.8 billion bushels of corn. To get to the USDA's 4.1 billion bushels of usage from September 2008 to August 2009, the industry would produce 11.5 billion gallons.

This increase continues to run head on into weak gasoline usage. The most recent gasoline distributions show a 52 week average of 9.25 million barrels a day. This represents the same level of distributions as October 2006. Between higher prices and weaker economic growth, the gasoline utilization has lost two years worth of growth.

This environment of weaker demand for gasoline in general makes the corn into ethanol demand component a key variable. Any further weakening in the price of ethanol will make it difficult for the industry to continue its ramp up.

**Expected Price Range (next 12 months): CBOT Futures                   \$4.65 to \$7.15 a bushel**  
**NASS Cash   \$4.15 to \$6.25 a bushel**

**Higher Prices**

- Tight supplies
- Strong projected ethanol usage

**Lower Prices**

- Exports and feeding usage depressed by higher prices
- Lower priced crude oil
- Weaker dollar

**US Supply and Demand Estimates**

Corn	August	September	Change	
<b>Beginning stocks:</b>	1.6	1.6	-	
<b>Production</b>	12.3	12.1	(0.22)	
Co-products	1.2	1.2	-	
Imports	0.0	0.0	-	
<b>Total supply</b>	15.1	14.9	(0.22)	
Feed	5.3	5.2	(0.10)	
Ethanol	4.1	4.1	-	
Other	1.3	1.3	-	
Exports	2.0	2.0	-	
<b>Total use</b>	12.7	12.6	(0.10)	
<b>Ending stocks</b>	2.38	2.26	(0.12)	18%

**2008/09 Crop Year Billions of Bushels**

**Global Supply and Demand Estimates**

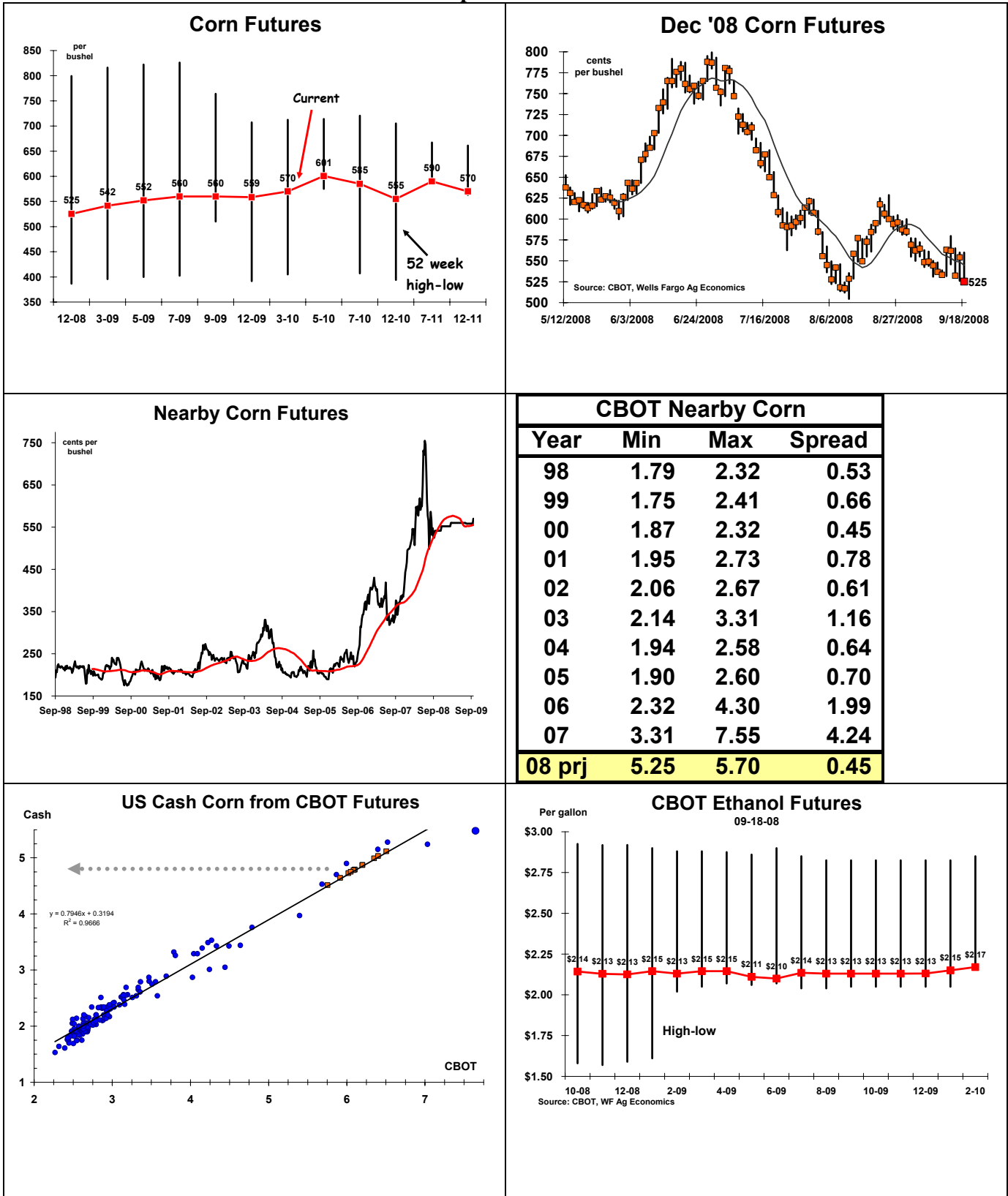
Coarse Grains	August	September	Change	
<b>Beginning stocks:</b>	148	151	2.9	
<b>Production</b>	1,089	1,087	(2.4)	
Imports	112	110	(2.9)	
<b>Total supply</b>	1,237	1,237	0.5	
Usage	1,093	1,090	(2.8)	
Exports	116	113	(3.0)	
<b>Total use</b>	1,093	1,090	(2.8)	
<b>Ending stocks</b>	144	147	3.2	13%

**2008/09 Crop Year Millions MTs**

# Agricultural Cash Prices Forecast

## #2 Yellow Corn, Central Illinois Spot

### September 08



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**Agricultural Cash Prices Forecast**  
**National Spot Price for Middling Cotton**  
**September 08**

**Overview:** Cotton's prospects have been hit the hardest by the slight strengthening the dollar. With 77% of total dependent on exports, cotton has the most exposure of any major commodity to currency variations.

The long-term outlook still appears relatively bullish thanks to the switch of acreage to soybeans and corn, but that switch could be at risk with any further price declines in that complex.

As noted above, the biggest variable is the continued expansion of the ethanol complex requiring additional acres of corn. This link to the cotton market will remain a major price mover for the next 8 to 9 months as planting decisions get made for the 2008-2009 crop year.

**Expected Price Range (next 12 months): NYBOT Futures**      **\$0.55 to \$0.82 per lb.**  
**NASS Cash**      **\$0.54 to \$0.80 per lb.**

**Higher Prices**

- 

**Lower Prices**

- Modest domestic usage
- Decline in exports
- Increase in expected carry-out

**US Supply and Demand Estimates**

Cotton	August	September	Change	
Beginning stocks:	10.2	9.9	(0.3)	
Production	13.8	13.9	0.1	
Imports	0.0	0.0	-	
<b>Total supply</b>	<b>24.0</b>	<b>23.8</b>	<b>(0.2)</b>	
Domestic use	4.4	4.4	-	
Exports	15.0	14.5	(0.5)	
<b>Total use</b>	<b>19.4</b>	<b>18.9</b>	<b>(0.5)</b>	
Ending stocks	4.6	4.9	0.3	26%

**2008/09 Crop Year Millions of Bales**

**Global Supply and Demand Estimates**

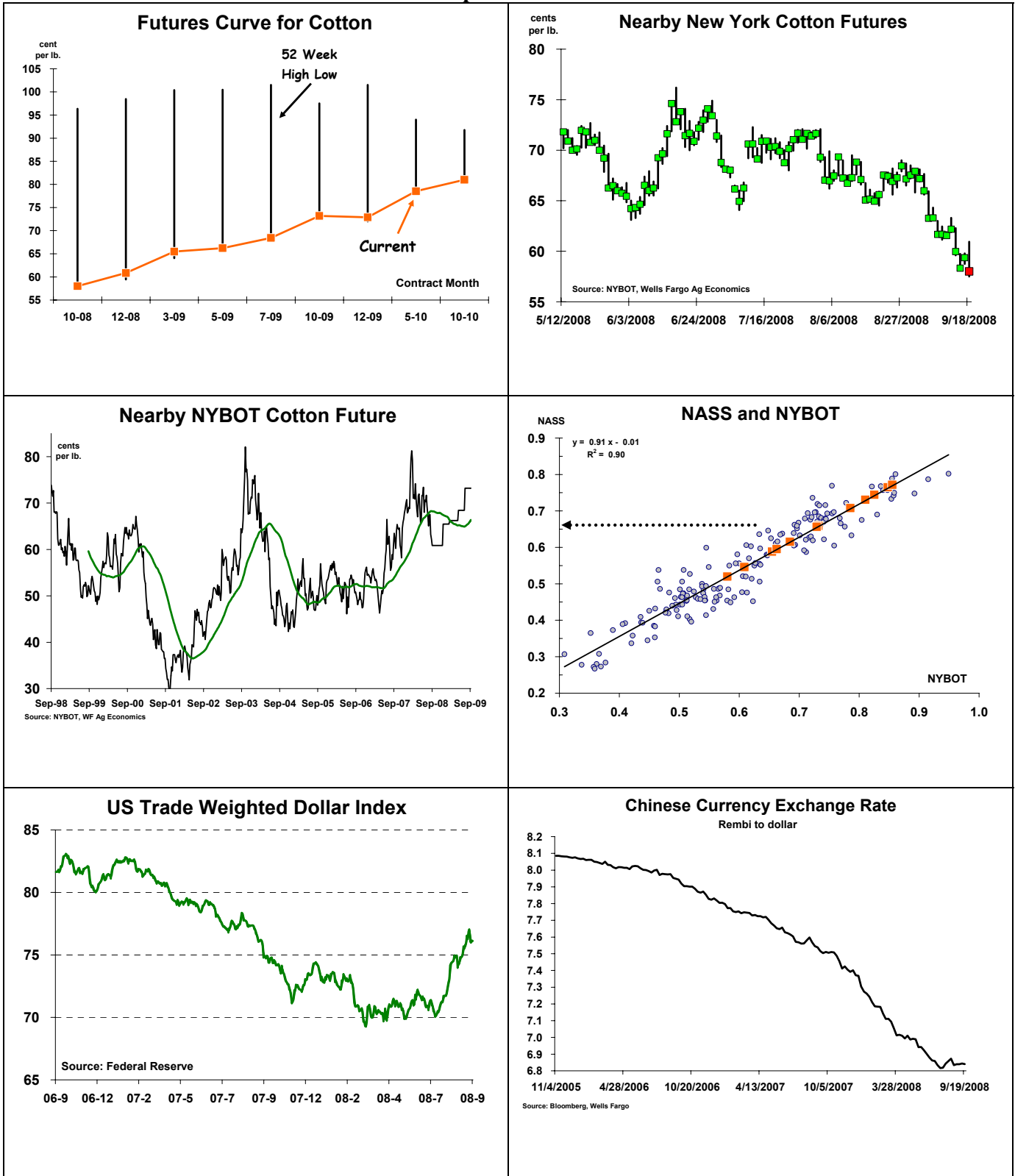
Cotton	August	September	Change	
Beginning stocks:	60.4	60.8	0.5	
Production	112.2	112.2	0.0	
Imports	39.3	38.5	(0.8)	
<b>Total supply</b>	<b>172.5</b>	<b>173.0</b>	<b>0.5</b>	
Total usage	124.5	123.7	(0.8)	
Exports	39.3	38.5	(0.8)	
<b>Total use</b>	<b>163.8</b>	<b>162.2</b>	<b>(1.6)</b>	
Ending stocks	51.0	52.3	1.3	32%

**2008/09 Crop Year Millions of Bales**

# Agricultural Cash Prices Forecast

## National Spot Price for Middling Cotton

### September 08



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