

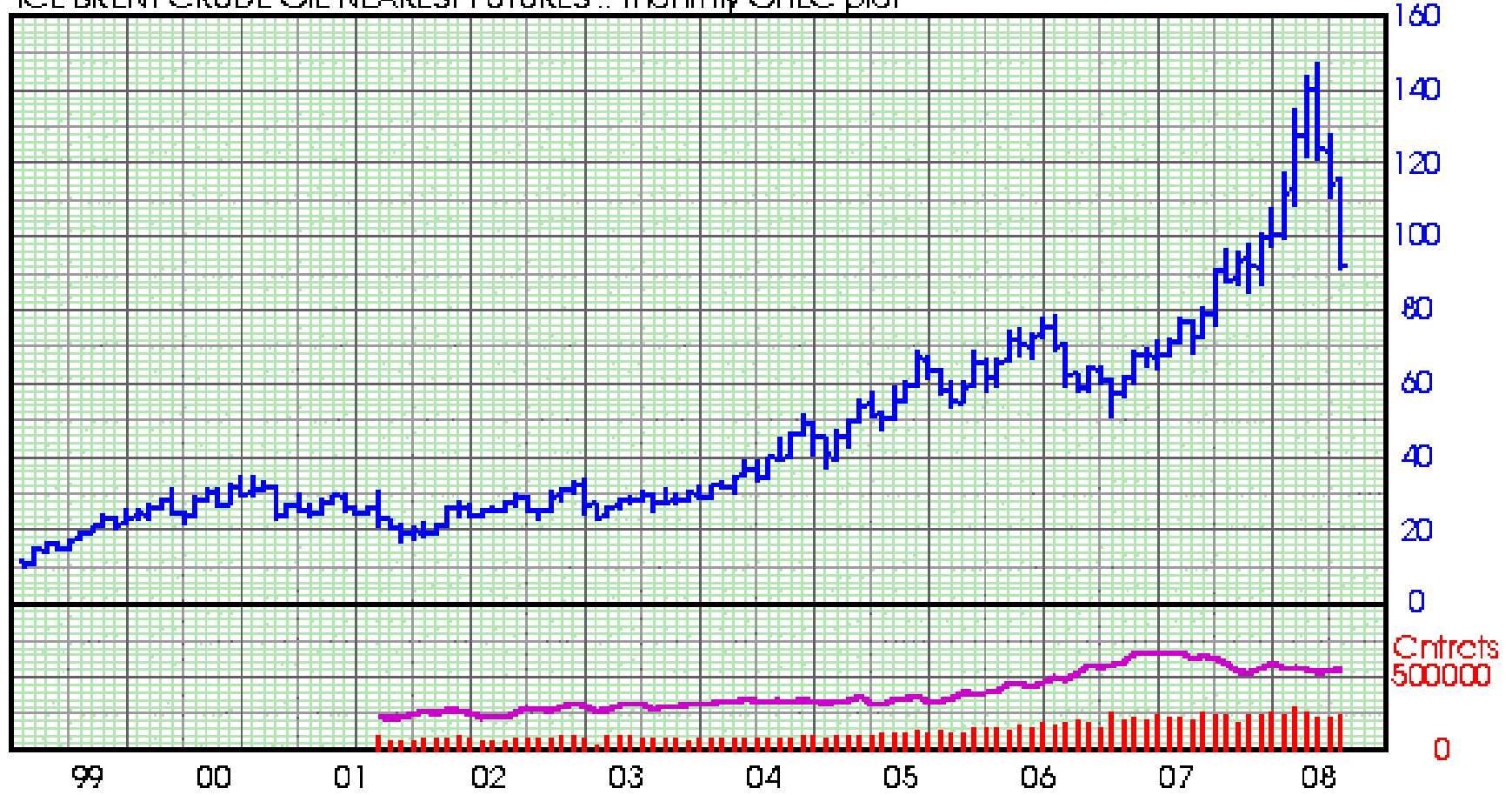
Food Price Inflation and Price Stability

Presented at the Federal Reserve Bank of Chicago
October 2nd 2008
Dermot Hayes
Iowa State University

Outline

- Is the rise in food prices driven by market fundamentals or a fear of inflation?
- Comparison across markets
- Do the fundamentals explain all of the increase in grain prices?
- Impact of grain price increases on the CPI
- Policy Implications

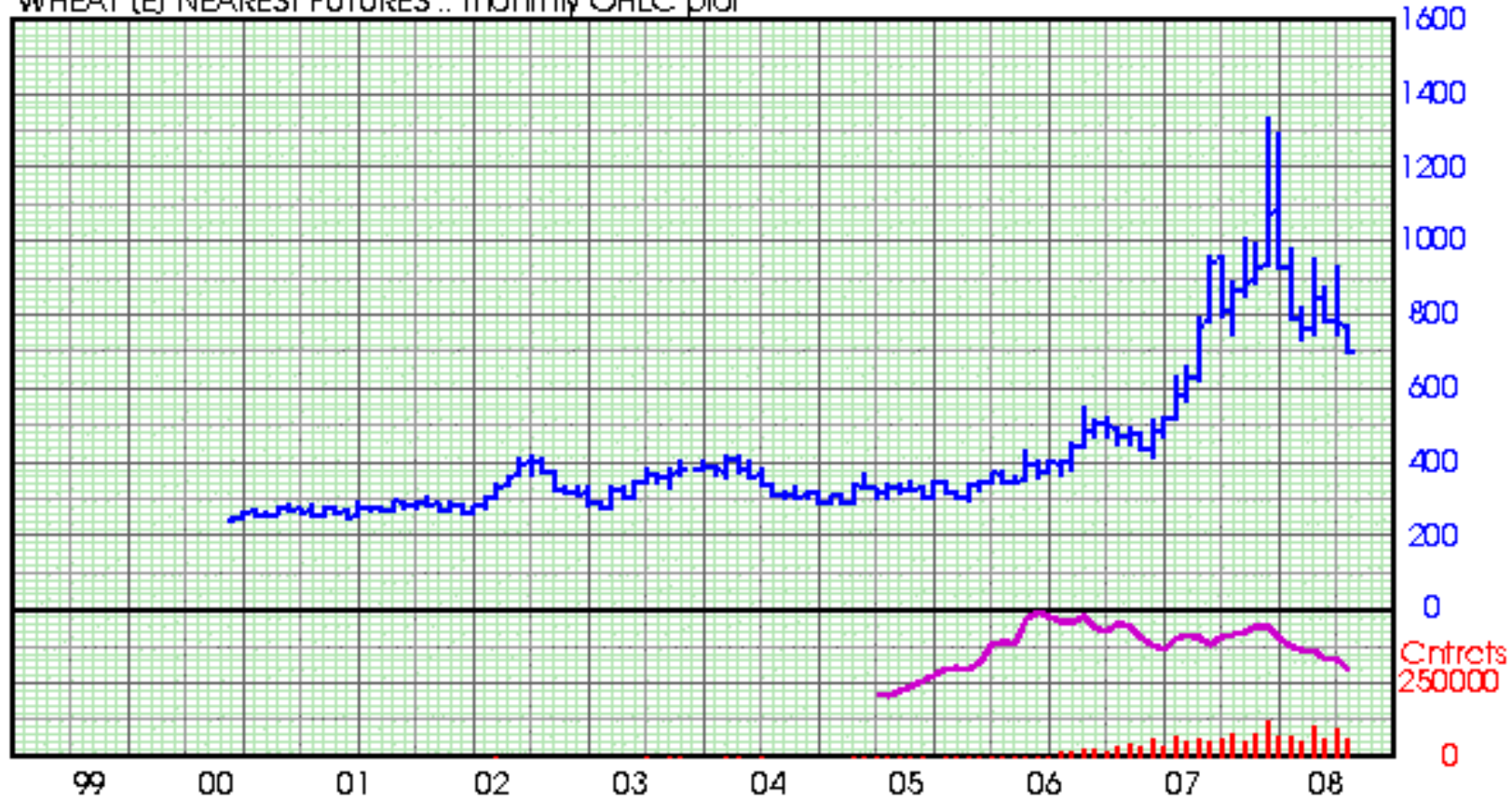
ICE BRENT CRUDE OIL NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

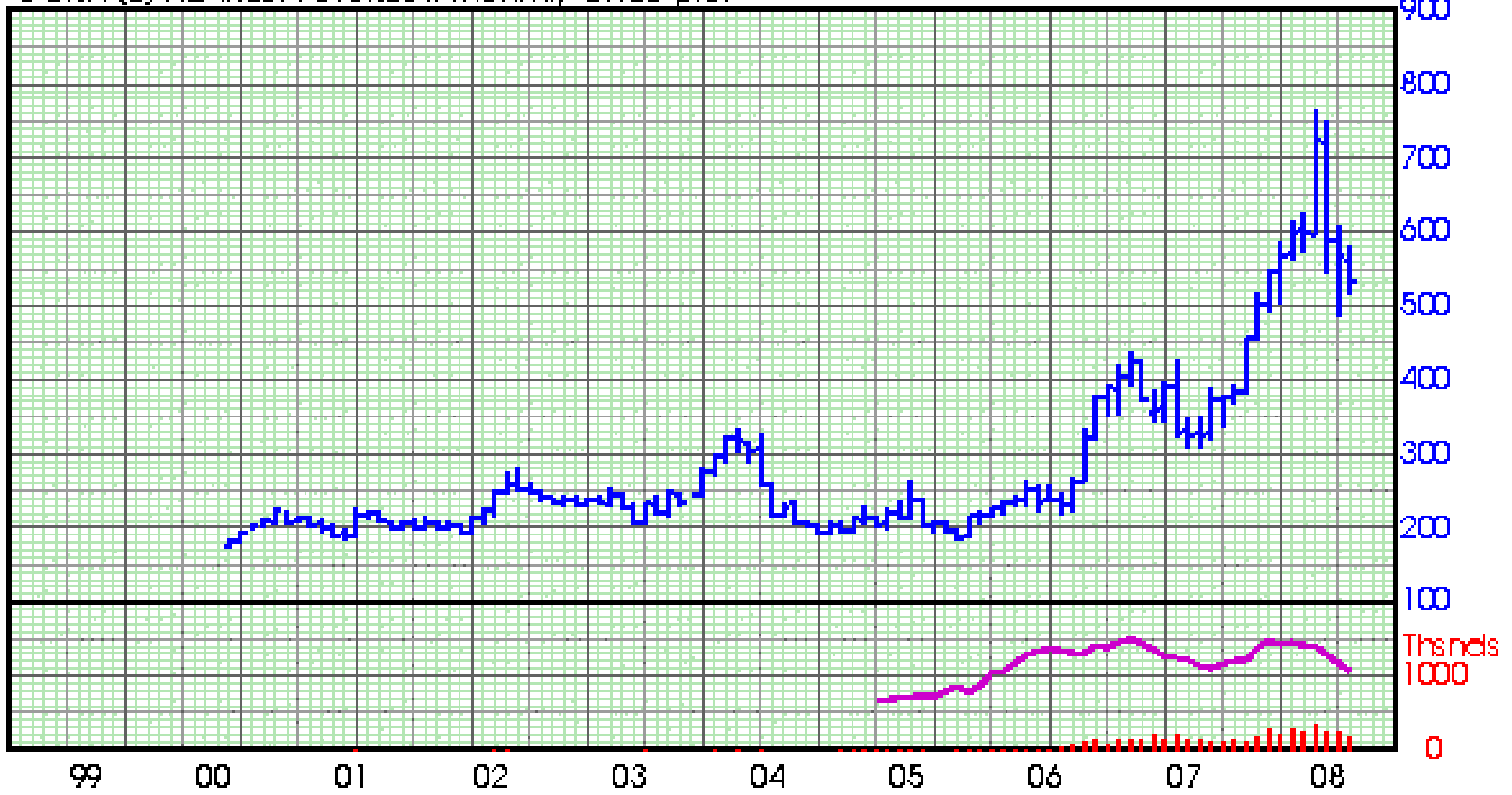
WHEAT (E) NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

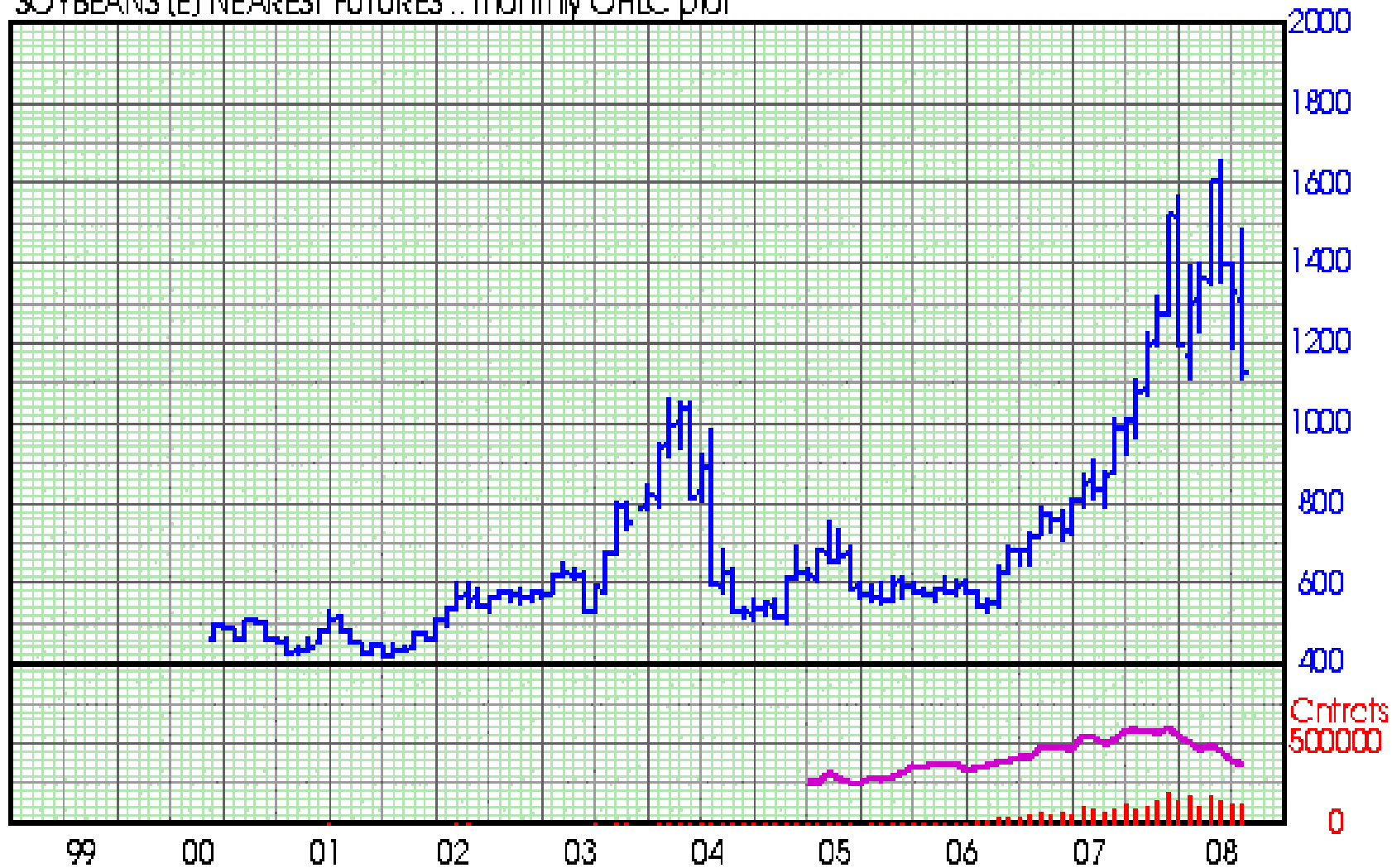
CORN (E) NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

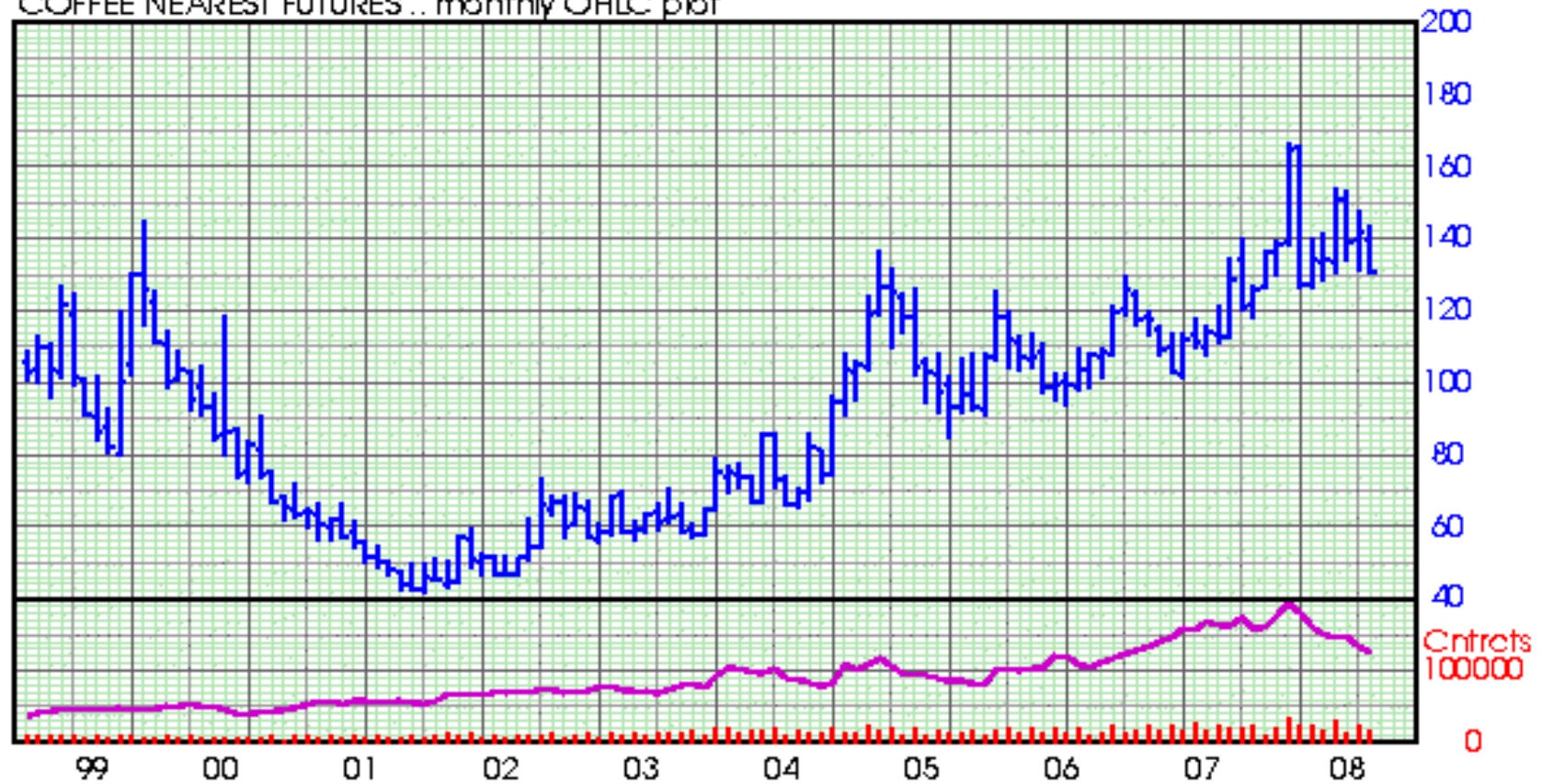
SOYBEANS (E) NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

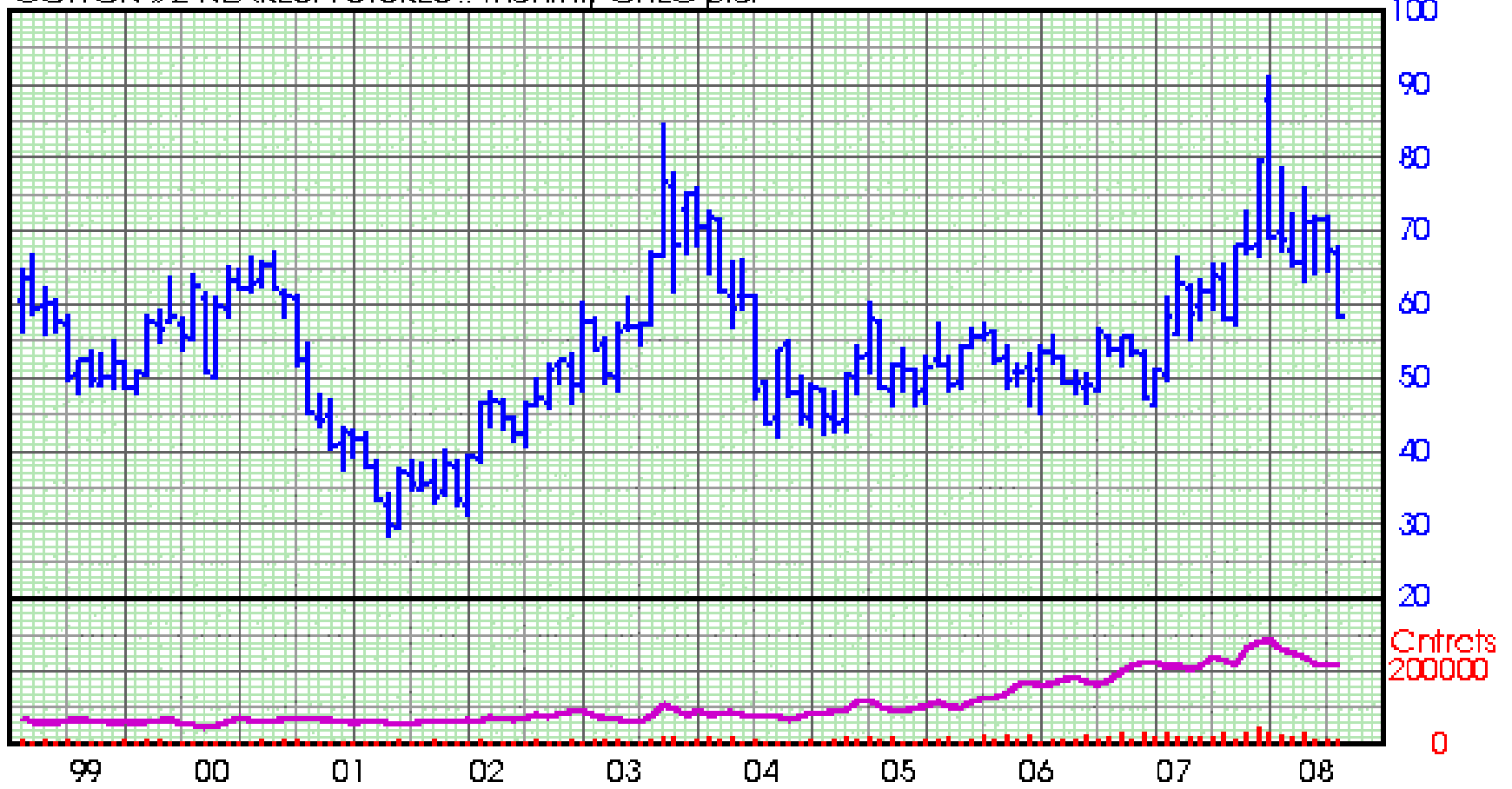
COFFEE NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

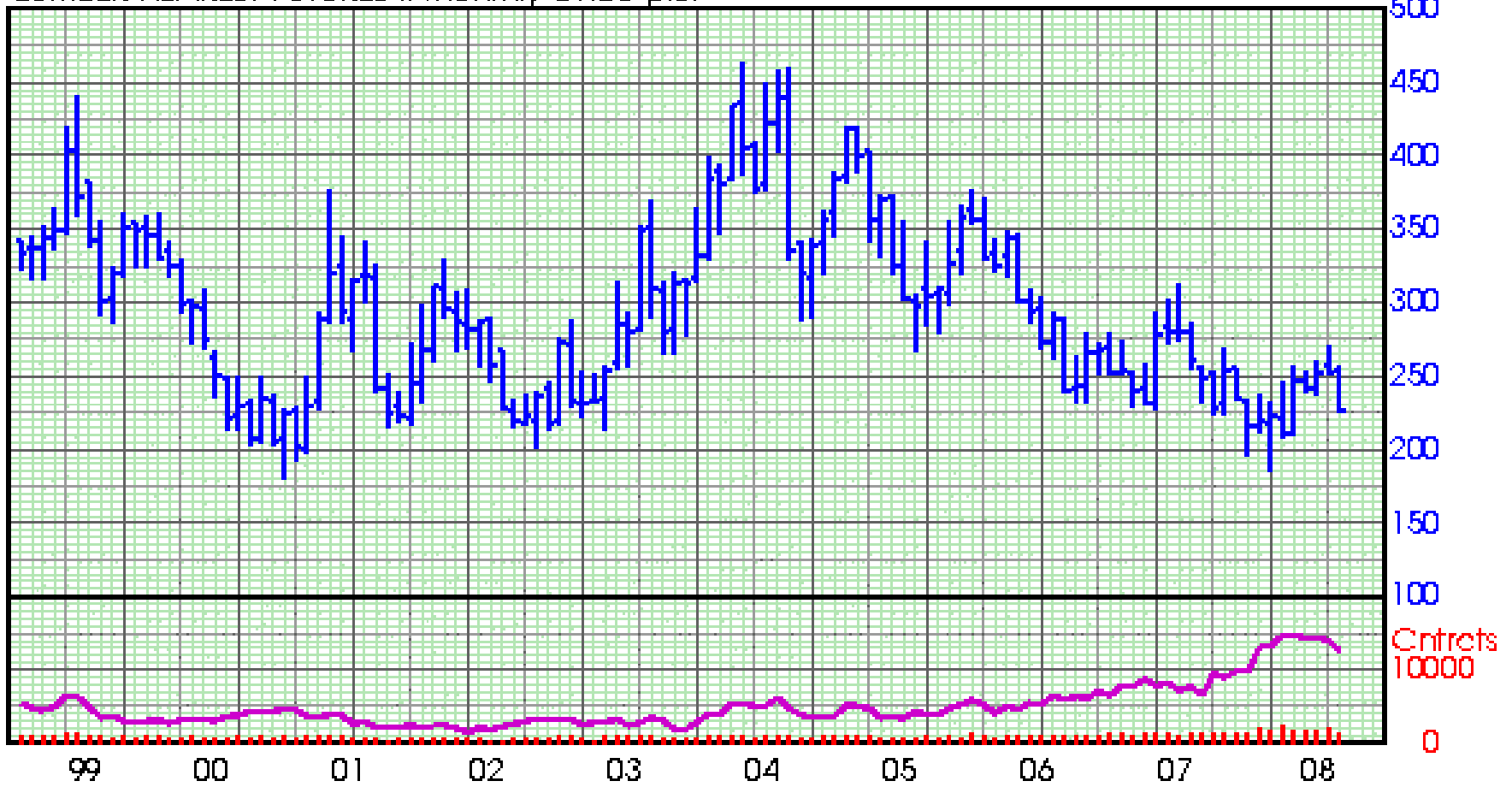
COTTON #2 NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

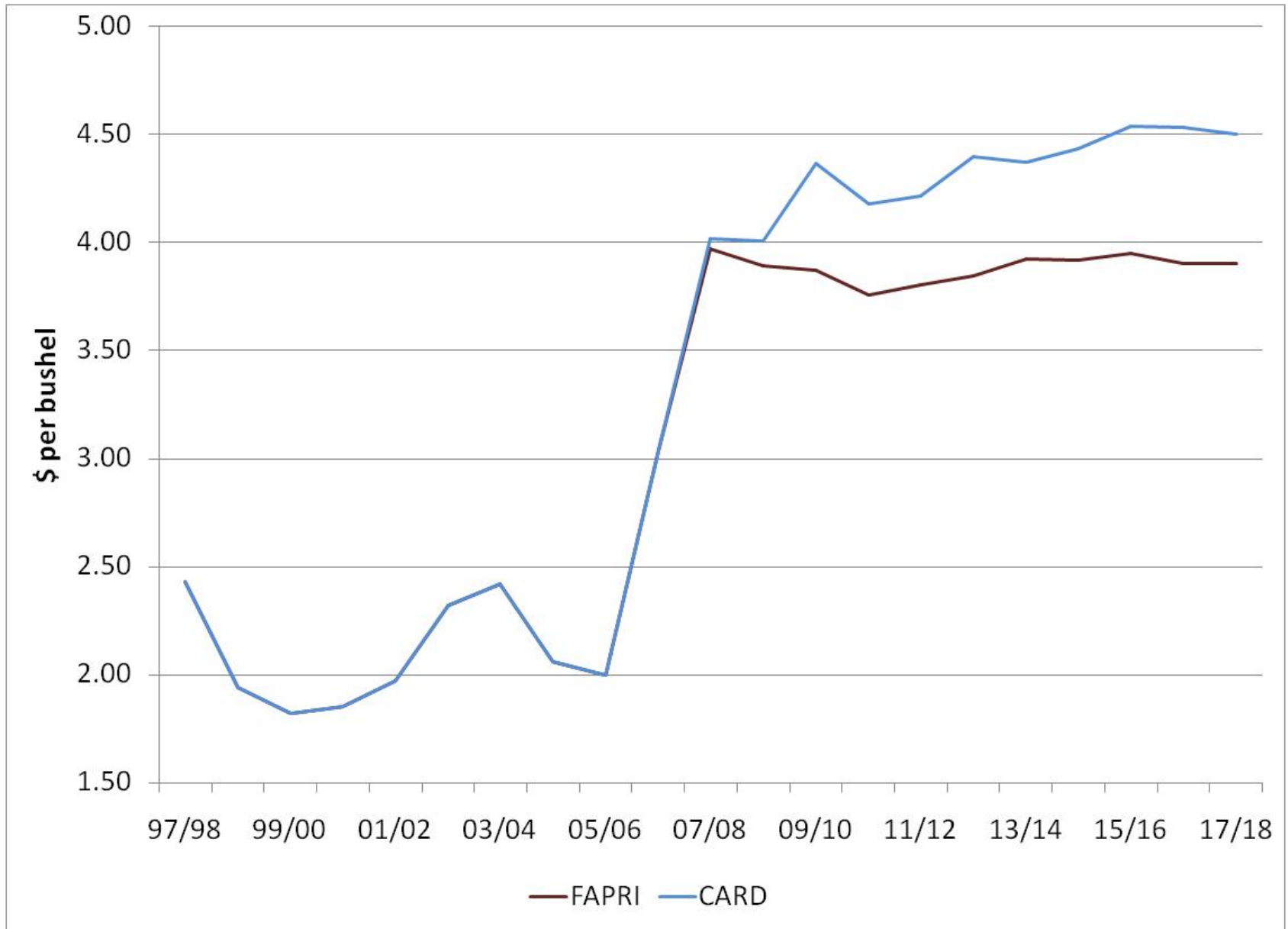
LUMBER NEAREST FUTURES .. monthly OHLC plot



As of 09/01/08

@ Barchart.com

Corn Farm Price



So what else caused the price increases

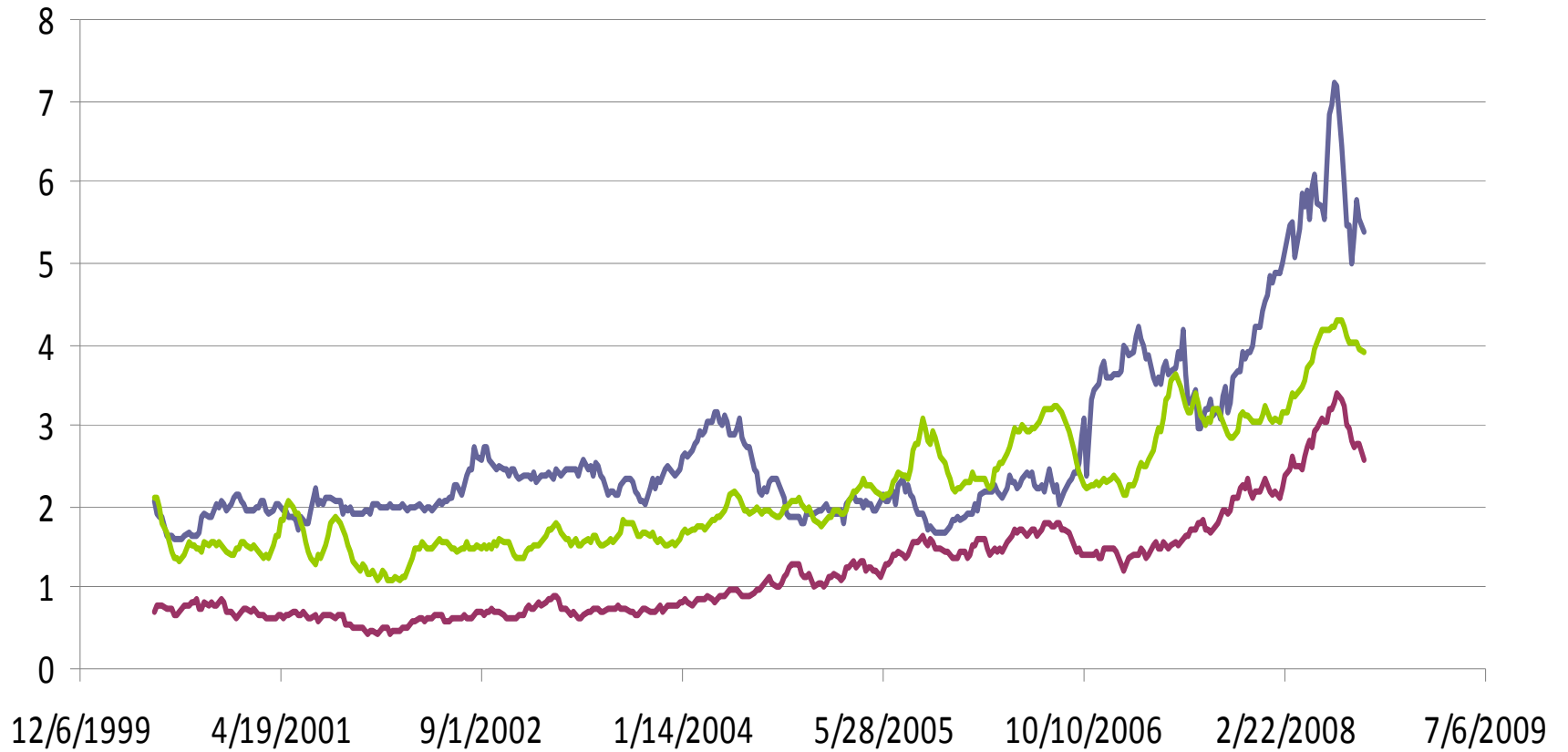
- Speculation due to possible future ethanol construction
- Energy value versus food value
- Panic reaction in foreign markets
- Weather
- Unknown livestock response

Speculation due to ethanol

- Pretend that you are a potential ethanol investor, what corn price will deter investment?
- Ethanol plants use 67% of each bushel for ethanol and can sell the remaining by product at approximately the market price of corn
- Break-even corn price = (Ethanol value – costs)/0.67
 - Operating Costs \$1.56/bu
 - Fixed Costs \$0.72/bu
- $\$2.70 \times 2.8 = (\$7.56 - \$2.28) / .67 = \7.88

Break-even Corn Price

Wholesale Gas Price \$/Gal	2.0	2.5	3.0	3.5
Ethanol Price \$/Gal	1.9	2.2	2.5	2.9
Ethanol Revenue \$/bu	5.2	6.1	7.1	8.0
Variable Cost \$/bu	1.6	1.6	1.6	1.6
Fixed Cost \$/bu	0.7	0.7	0.7	0.7
Break Even Corn Price \$/bu	4.3	5.7	7.1	8.5
B/E Corn Price, No Credit	2.2	3.6	5.0	6.4



— Corn price — OK-Crude Oil Price — Retail gasoline price

Panic reaction in foreign markets

- India, China, Argentina, Ukraine and Russia have imposed restrictions of various types on grain exports
- Other countries are suddenly easing restrictions in food imports
- Food as the new crude

Weather

- Carryover Supply summer of 09
 - Corn 2.3 to 2.8 weeks
 - Soybeans 2.5 to 3.9 weeks
- These are pipeline levels and will require some rationing
- Any further reduction in 2008 production will have a dramatic impact on prices
- In June of this year it looked like we had lost 5% to 10% of the crop

Livestock response

- We have never experienced a permanent real increase in feed prices
- In the past feed price increases were a bump in the road for those livestock producers who survived
- In the fall of 2006 we did not know if the livestock industry would cut back or expand
- Corn used in feed *increased* from 5.6 billion bushels in 2006/07 to 6.15 bbu in 07/08

Change in Grain Price in Response to a \$1/Bu change in Corn Prices

- Wheat 0.59 \$/bu
- Rice 0.04 \$/bu
- Soybeans 1.02 \$/bu
- Beef 0.16 \$/lb
- Pork 0.10 \$/lb
- Broilers 0.06 \$/lb

**Percent Changes for CPI Food Indices
Resulting from a \$1/Bu increase in Price of Corn**

FOOD	0.8%
Food at Home	1.0%
Cereal and Bakery	0.4%
Meat	2.9%
Beef	3.7%
Pork	3.2%
Poult	3.5%
Eggs	5.5%
Fish	0.0%
Dairy	1.7%
Milk	2.1%
Cheese	1.8%
Ice Cream	0.6%
Fruit and Vegetables	0.0%
Other Food At Home	0.2%
Sugar and Sweets	0.7%
Fats and Oils	0.7%
Other Prepared Items	0.0%
Non-alc. Beverages	0.3%
Food Away From Home	0.7%

Policy

- The actual movements in grain prices over the past two years can be explained by energy price movements coupled with the tax credit to ethanol producers and poor weather
- These price movements are correlated because there is a land constraint
- There has been a food CPI impact of almost 3%
- There does not appear to be an inflationary or speculative component to these price movements