

Understanding the 2011 Planting Outlook, Ethanol, and Food Pricing

March 31, 2011

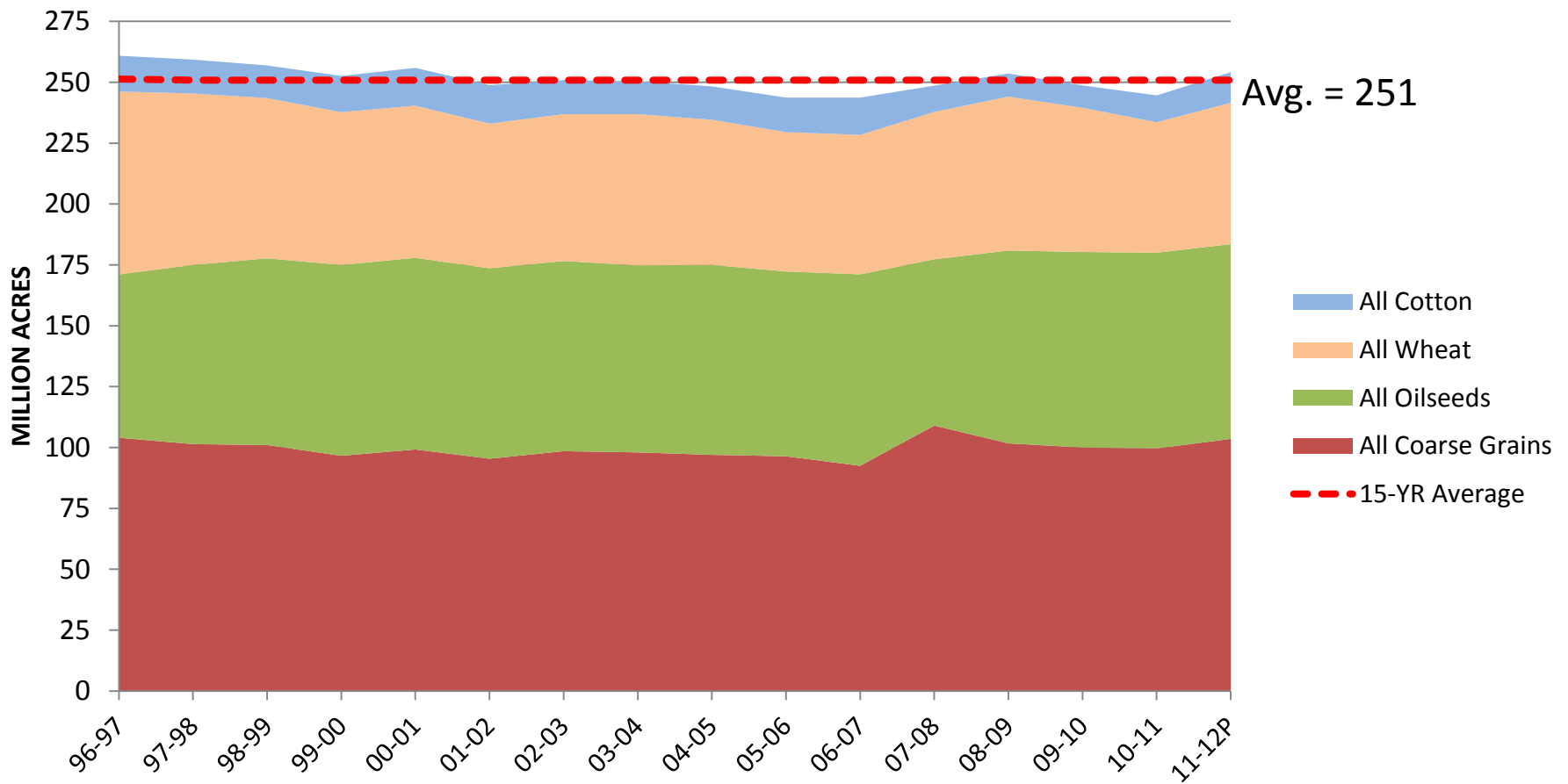
Planted acres by crop

- USDA Prospective Plantings report based on farmer surveys conducted during first two weeks of March
- In past 20 years, the prospective corn acreage estimate has varied from the final acreage estimate by an average of 1.14 million acres.
- In past 20 years, prospective corn acreage estimate has been below actual 8 times and above actual 12 times

	2011 Pros. Plantings	2010 Actual	2009 Actual
	<i>Million Acres</i>		
Corn	92.2	88.2	86.4
Oats	2.8	3.1	3.4
Barley	3.0	2.9	3.6
Grain Sorghum	5.6	5.4	6.6
All Wheat	58.0	53.6	59.2
Soybeans	76.6	77.4	77.5
Sunflower	1.8	2.0	2.0
Canola	1.6	1.0	0.8
Cotton	12.6	11.0	9.2
TOTAL	254.2	244.6	248.7

Over past 15 years, additional corn and soy acres have come through crop switching, not land expansion

PLANTED ACRES: OILSEED, WHEAT, COARSE GRAINS AND COTTON



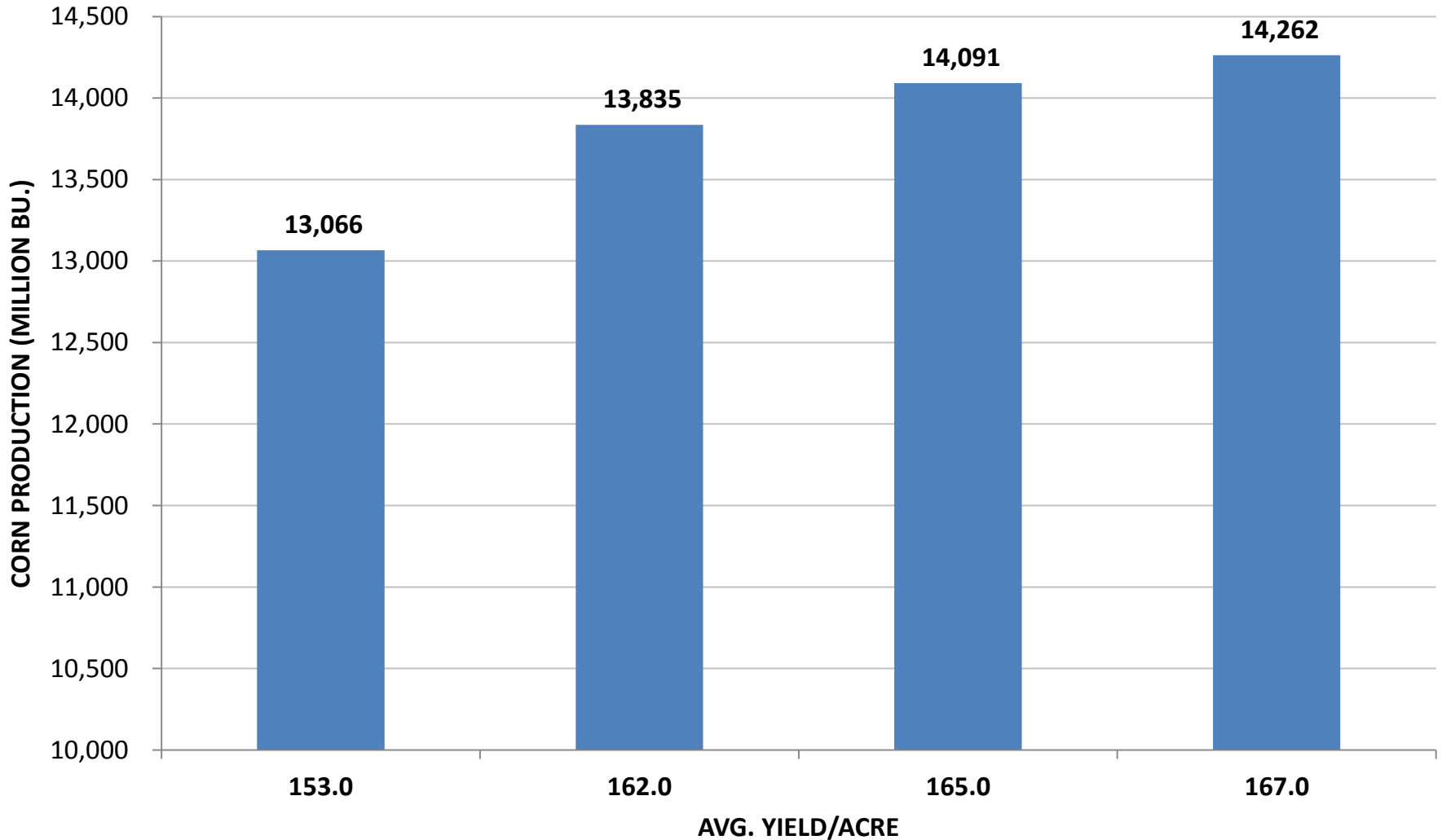
Source: USDA

2011/12 corn production & use

- Corn Acres = 92.2 million
- Yield Scenarios:
 - 153 bu./acre (2010 avg. yield)
 - 162 bu./acre (USDA trend)
 - 165 bu./acre (2009 avg. yield)
 - 167 bu./acre (ideal conditions)
- 2011/12 Assumed Use = 13,650 mm bu. (+1.1%)

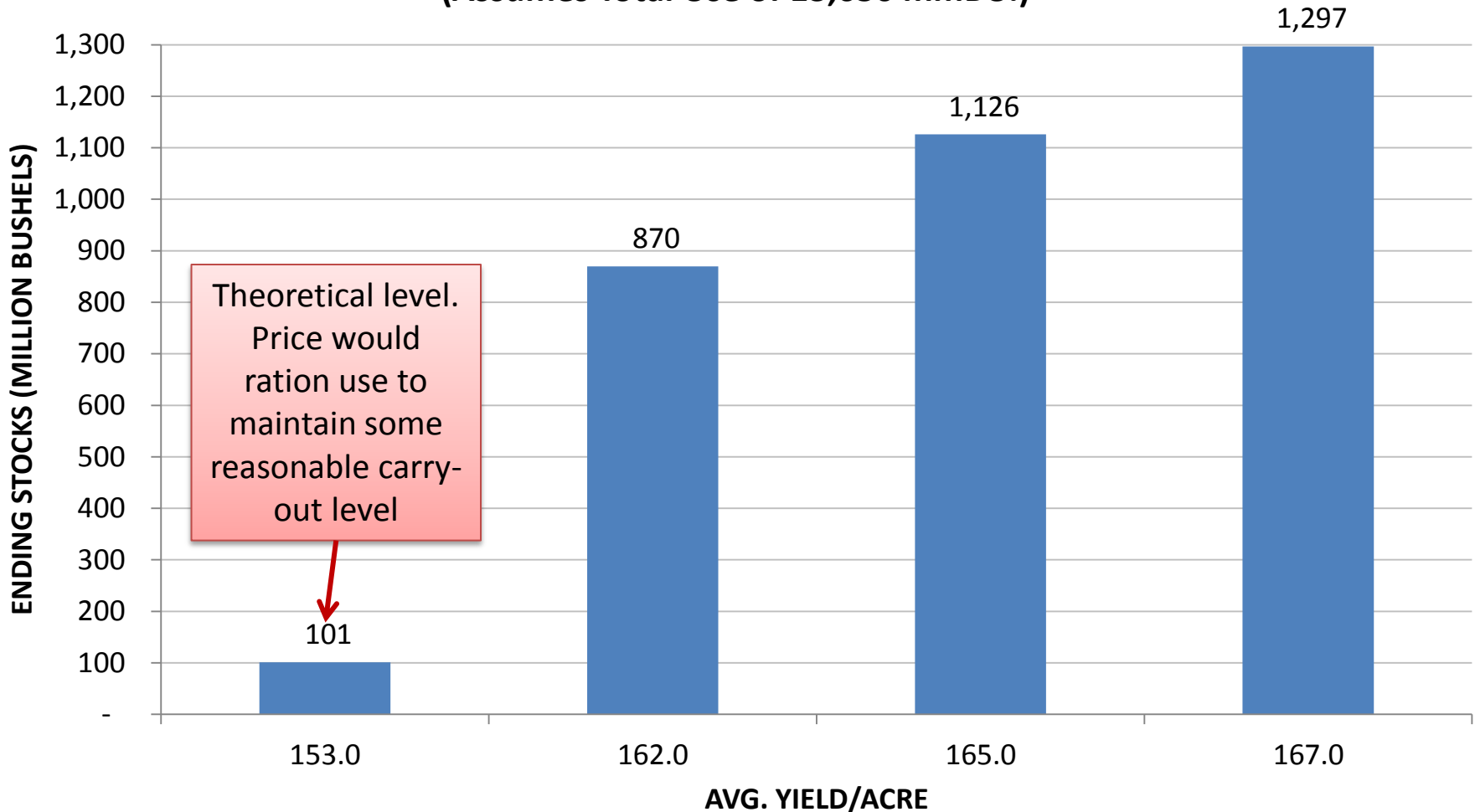
2011 Corn Production Scenarios

2011 CORN PRODUCTION AT VARIOUS AVG. YIELD/ACRE LEVELS



2011/12 Corn Carry-out Scenarios

2011/12 CORN ENDING STOCKS AT VARIOUS AVG. YIELD/ACRE
(Assumes Total Use of 13,650 mmBU.)



Implications of various avg. yields

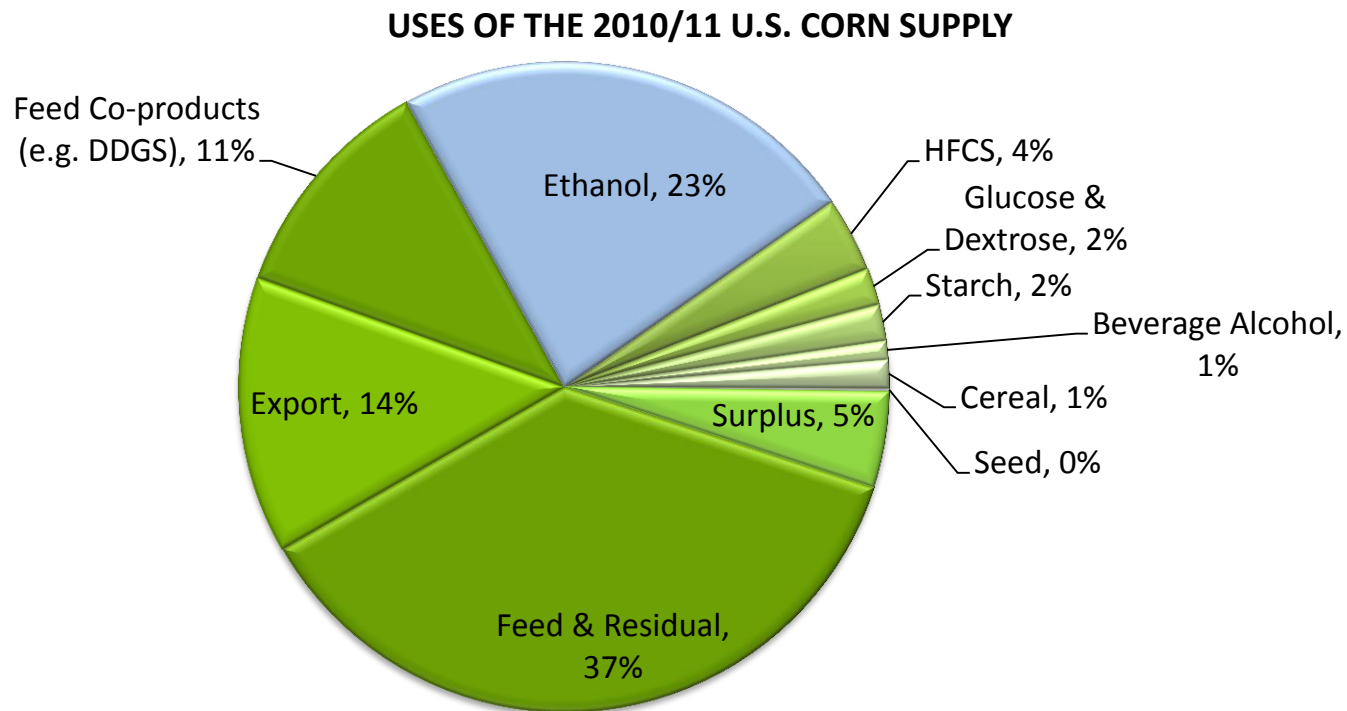
- Avg. yield of 159.7 bu/acre likely needed to maintain carry-out at ~675 mm bu.
- Yield of 163.5 bu/acre likely needed to restore carry-out to 1 bbu.
- USDA trend yield of 162 bu/acre produces 13.84 billion bushel corn crop
- Corn yield based on more recent trends or ideal conditions produces 14+ billion bu. crop

How Much Corn for Ethanol in 11/12?

- 2011/12 RFS demand = 13 bg
 - 2011 RFS = 12.6 bg
 - 2012 RFS = 13.2 bg
- E10 blend wall at ~13.5-13.6 bg
- Recent annualized run rate = ~13.75
- Slow roll-out of E15, but strong exports
- 13.8-14 bg seems reasonable for 2011/12
 - 4.95 - 5.05 billion bushels (gross) at ~2.8 gal./bu.
 - USDA likely underestimating ethanol yield (and overestimating corn use for ethanol)
 - Every 0.1 gal./bu. of underestimation = ~160 mm bu.
 - 2010 corn crop producing higher-than-normal ethanol yields

Ethanol industry's share of U.S. corn supply regularly overstated

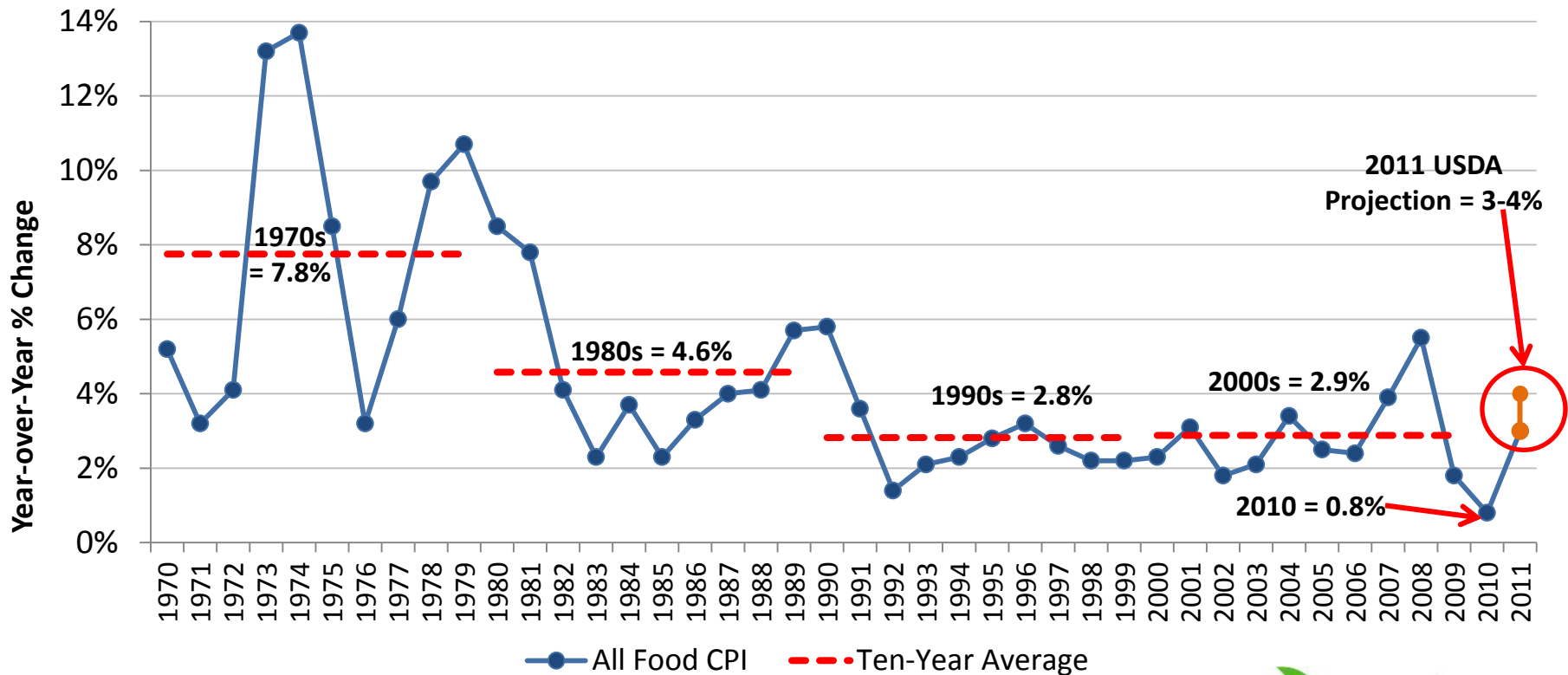
- Detractors regularly suggest ethanol using “40% of corn supply”
- On net basis, ethanol using only 23% of the 10/11 corn supply
- Remaining 77% goes to feed and food markets



Food prices to follow historic norms in 2011

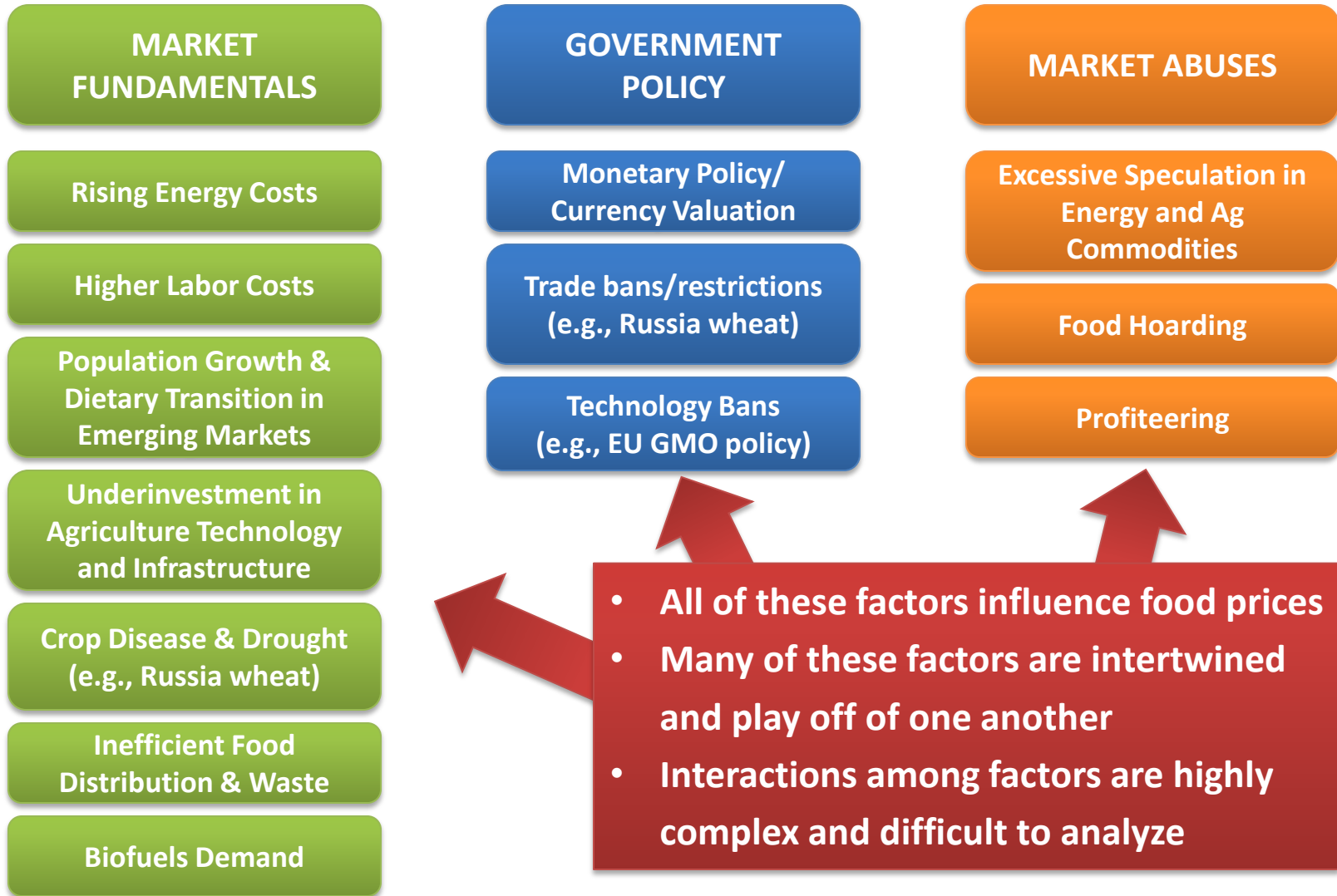
- 2010 food inflation rate of 0.8% was lowest *since 1962*
- Average annual food inflation rate since 1980 = 3.4%
- Primary 2011 drivers so far: energy, fruits/vegetables, meat

U.S. Food Inflation (Year-over-Year % Change)



Sources: Bureau of Labor Statistics; USDA

What is generally driving higher food prices?



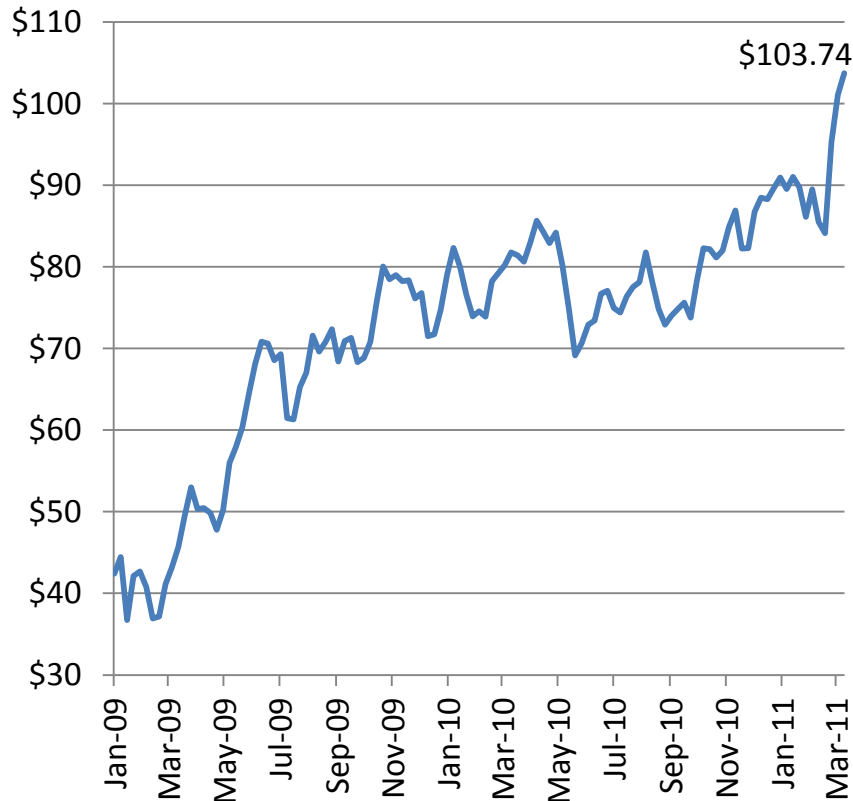
Energy prices are rising rapidly

CONSUMER PRICE INDEX--ENERGY (Seasonally Adjusted)

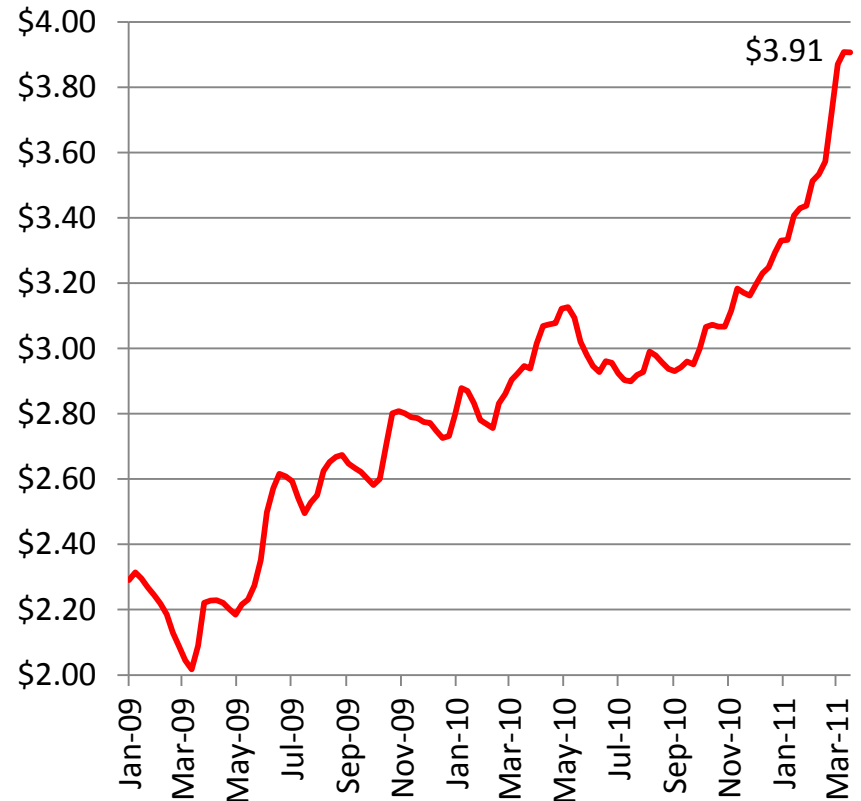


Petroleum prices are surging again

WEEKLY OIL SPOT PRICE (WTI)
[\$/BARREL]



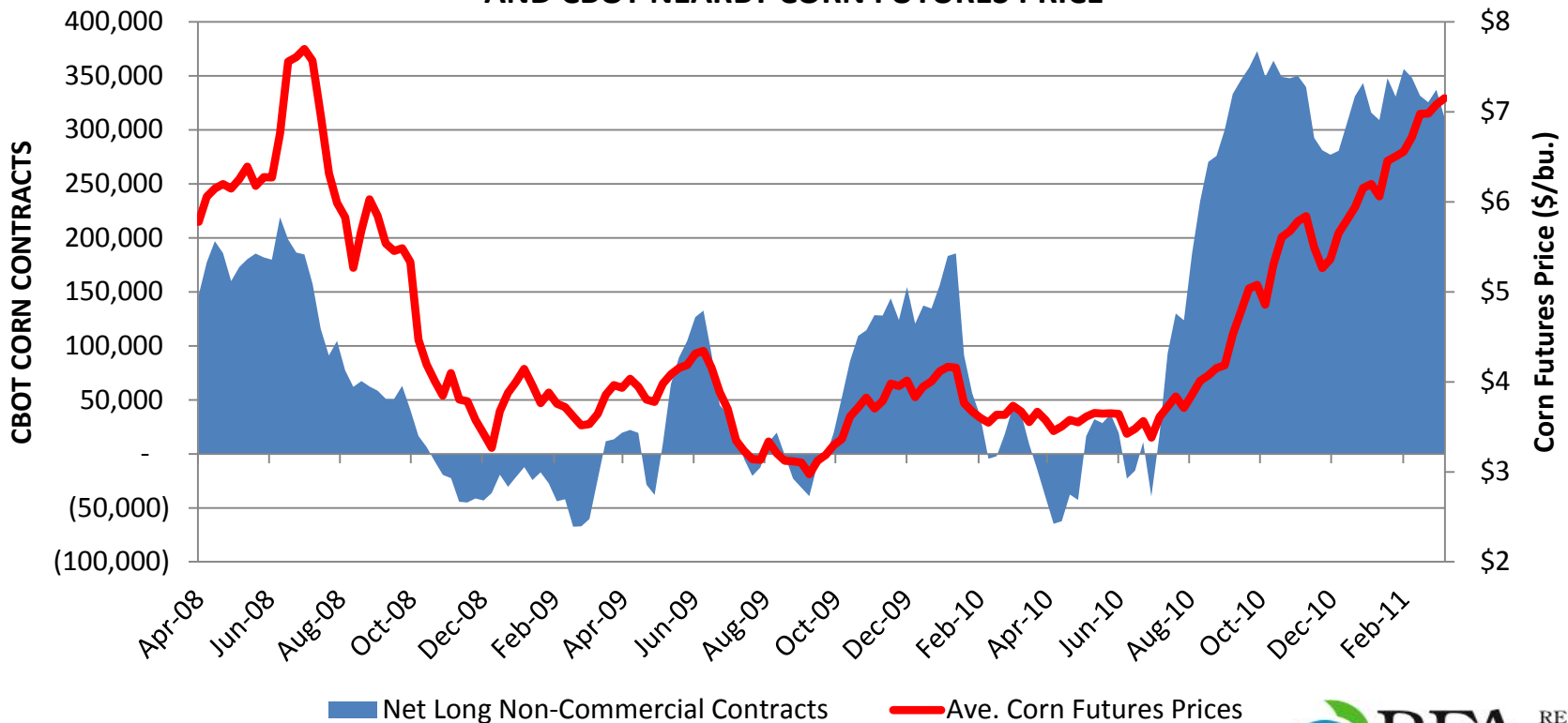
WEEKLY U.S. DIESEL PRICE (ALL TYPES)
[\$/GALLON]



Speculators are betting big on commodities

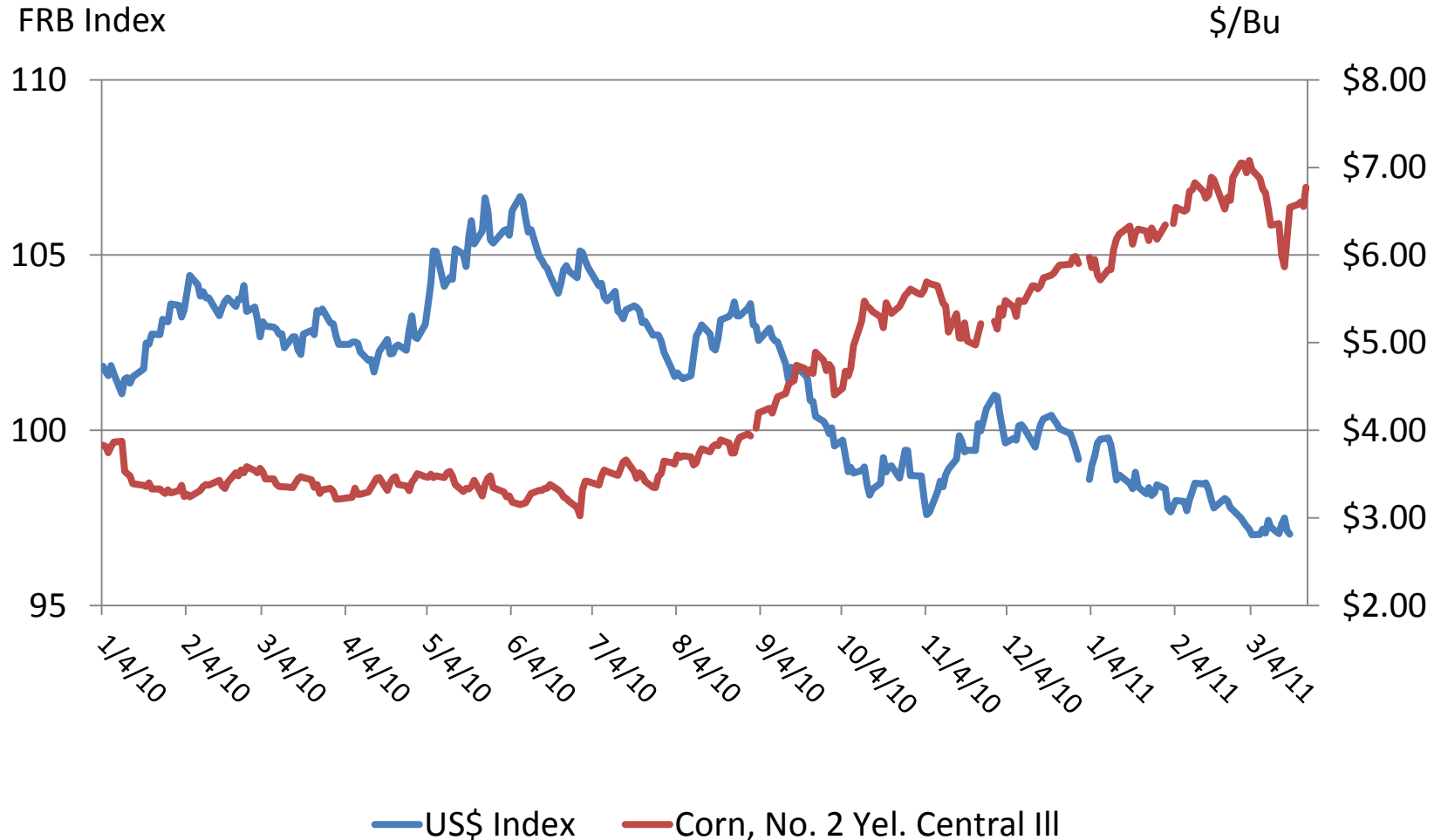
- Large hedge funds and other speculators largely left the corn market after 2008 bubble burst
- Speculators substantially re-entered the market in summer 2010; corn prices doubled
- In Fall 2010, non-commercials held ~350,000 net long positions (1.75 Bil. Bu.), while “index traders” held another ~470,000 (2.35 Bil. Bu.)
- Non-commercial speculators hold more corn contracts than actual commercial users

**NET LONG POSITIONS HELD BY NON-COMMERCIAL INVESTORS (i.e. SPECULATORS)
AND CBOT NEARBY CORN FUTURES PRICE**



Weaker dollar also driving corn price

U.S. DOLLAR INDEX AND CORN PRICE

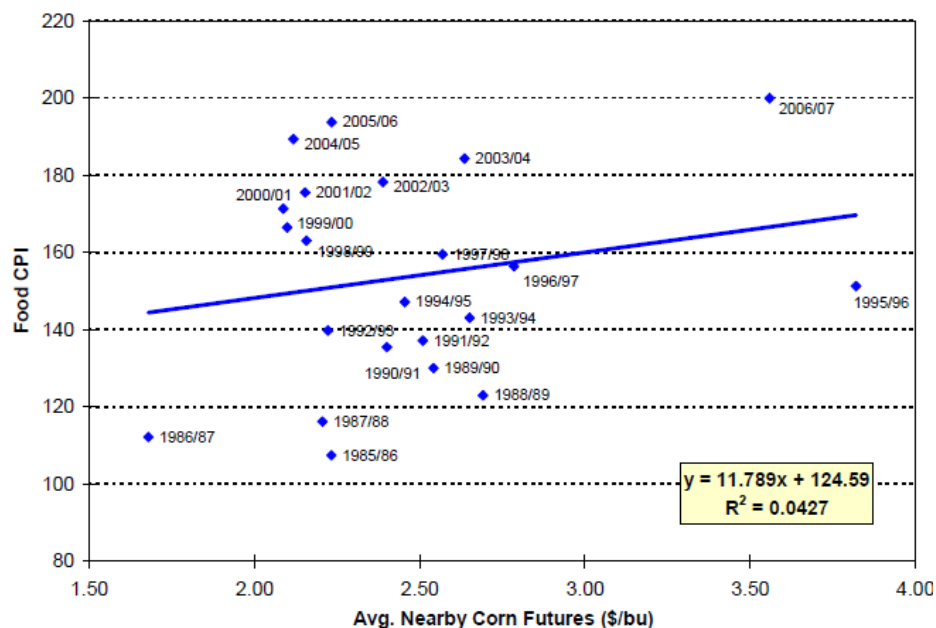


Corn and food prices: is there a relationship?

- “...it is statistically unsupported to suggest that high and/or rising corn prices are the causative reason behind high and rising retail meat, egg and milk product prices.”
- “...there has historically been very little relationship between corn prices and consumer food prices. Statistical relationships are weak even when corn price data are lagged to allow time for them to work their way through the food supply chain. The corn price would be considered a statistically insignificant variable in determining what drives the food CPI.”

Source: Informa Economics (2007)
“ANALYSIS OF POTENTIAL CAUSES OF
CONSUMER FOOD PRICE INFLATION”

Figure 11: Food CPI as a Function of the Corn Price



Corn is a minor cost component of most retail food items

Retail Food Product	Corn Required to Produce	Value of Corn in Unit @ \$3.55/bushel (2009/10 avg.)	Value of Corn in Unit @ \$5.40/bushel (2010/11 avg.)
1 Box Corn Flakes	0.63 lbs.	\$0.04	\$0.06
1 Bag Corn Chips	0.75 lbs.	\$0.05	\$0.07
1 lb. Chicken Breast	2.6 lbs.	\$0.16	\$0.25
1 Gallon Milk	3.5 lbs.	\$0.23	\$0.34

- A 50% increase in the corn farm price would be expected to raise the price of a box of corn flakes by **\$0.02 per box** (about 0.5% of the total retail price), assuming no other cost increases.
- Even for products where corn is a more important component (e.g., meat and dairy), expected retail cost increases are slight (2-3% of total retail cost).

Just 12 cents of every retail food dollar pays for farm goods/raw ingredients

- Remaining 88 cents pay for energy, packaging, food processing, transportation, and other costs
- Petroleum and other energy costs affect every link in the food supply chain
- A 33% increase in oil prices has three times the impact on retail food prices as an equivalent increase in corn prices (Urbanchuk 2008)



The U.S. Ethanol Industry Produces Fuel *and* Feed

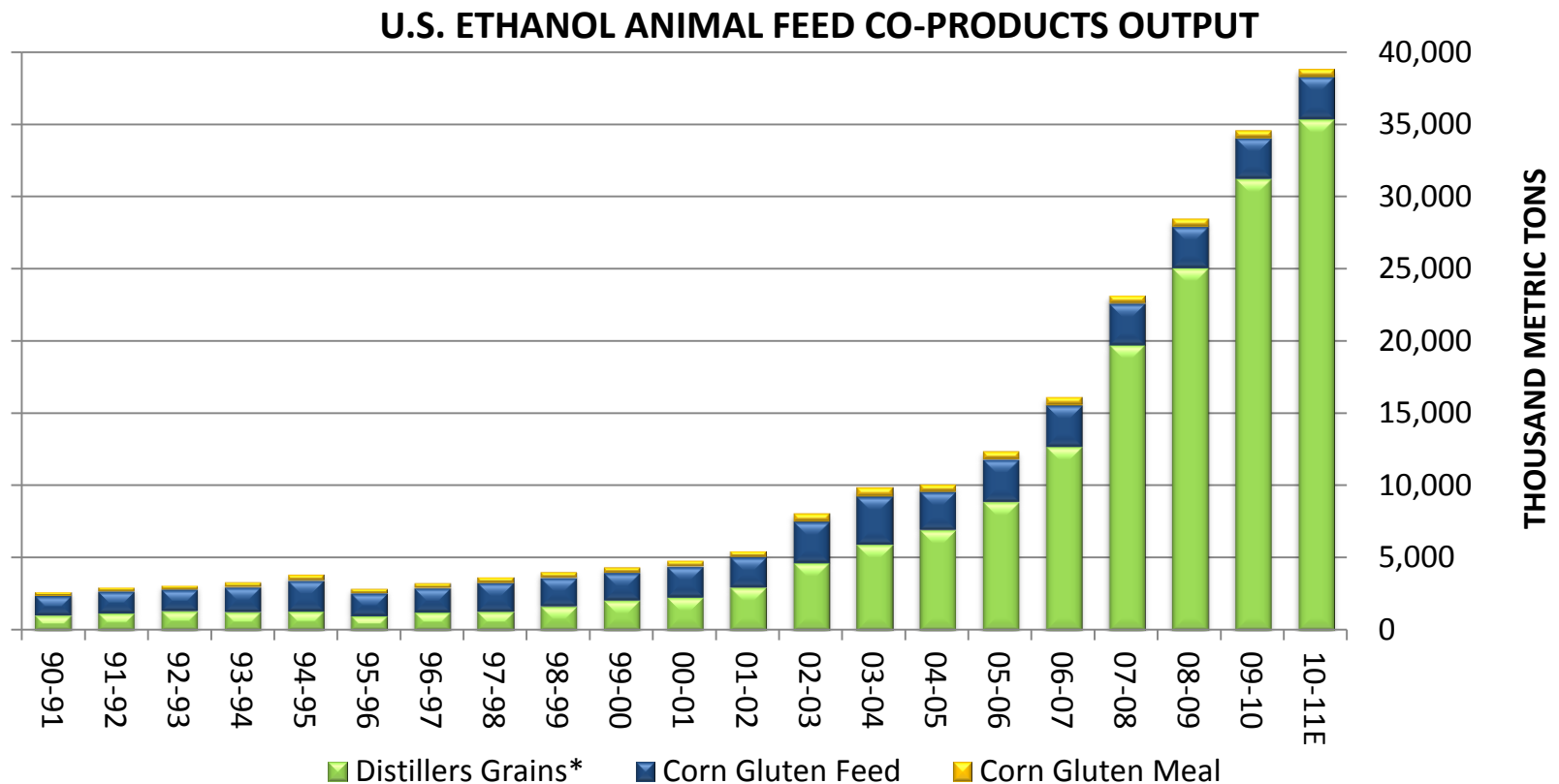
- Each 56-lb. bushel of grain produces:
 - 2.8 gallons of ethanol *AND*
 - 17 lbs. of livestock feed (distillers grains or corn gluten feed/meal)
- Ethanol production uses only the starch portion of corn kernel
- Protein, fat, fiber remain available to animal feed market
- Distillers grains protein content is ~3 times higher than corn

NUTRITIONAL COMPARISON OF YELLOW CORN AND DISTILLERS DRIED GRAINS W/SOLUBLES

	% Protein	% Fat	% Fiber
Corn, Yellow No. 2	9.3	3.9	1.9
Corn Distillers Dried Grains w/ Solubles	30.8	11.1	6.4

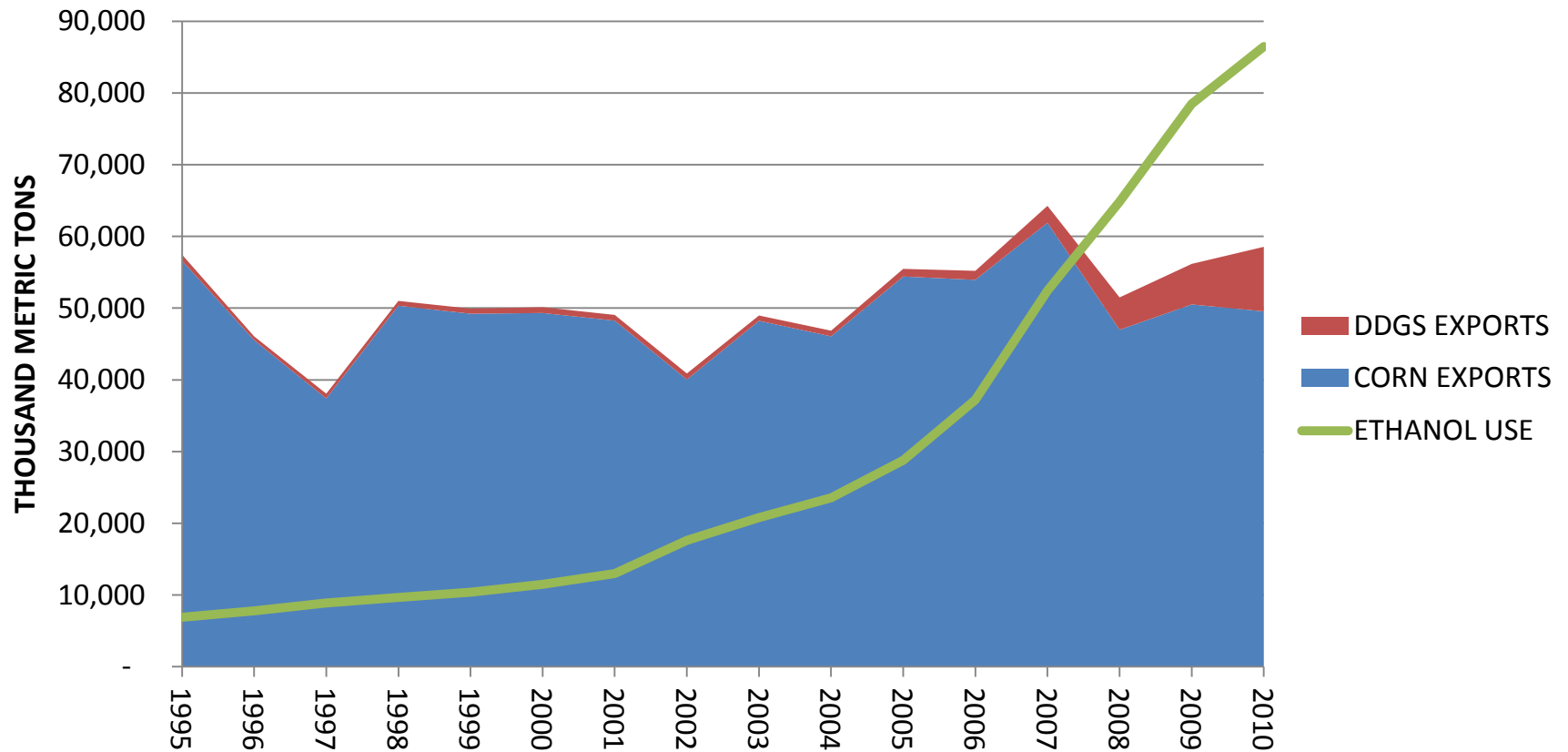
Ethanol Feed Co-products Displace Corn and Protein Meal in Livestock & Poultry Diets

- Nearly 35 million metric tons produced in 2009/10
- More than 25% exported to more than 50 countries in 2010



U.S. corn exports have not declined as ethanol use has expanded

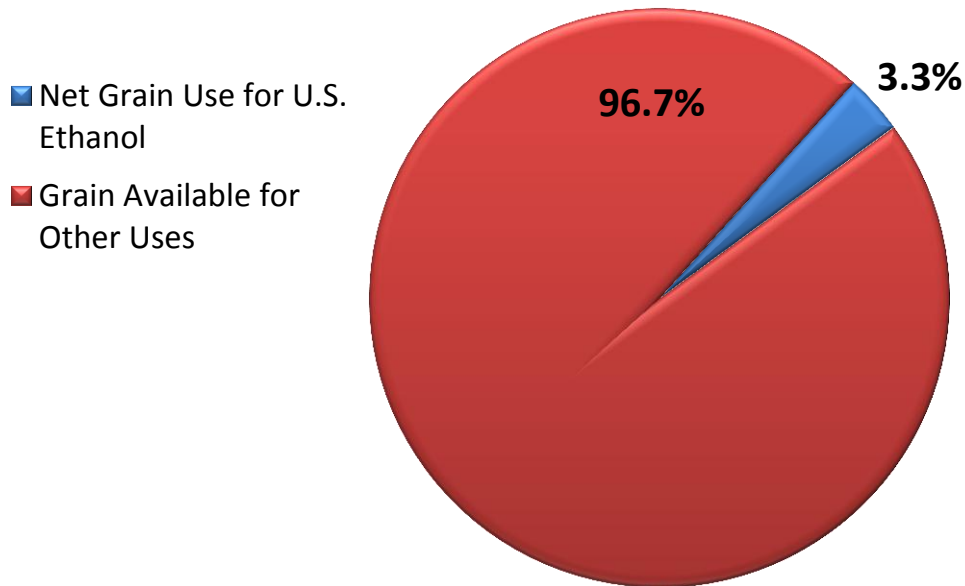
CORN AND DISTILLERS GRAINS EXPORTS VS. NET CORN USE FOR ETHANOL



U.S. ethanol uses just 3% of world grain supply

2010/11 U.S. ethanol use, gross basis	126 m. metric tons
<u>U.S. ethanol feed co-products output</u>	<u>- 39 m. metric tons</u>
U.S. ethanol use, net basis	= 88 m. metric tons
Global grain supply (coarse grains, wheat, rice)	2,665 m. metric tons
<u>U.S. ethanol use, net basis</u>	<u>- 88 m. metric tons</u>
Global grain supply available for other uses	= 2,577 m. metric tons

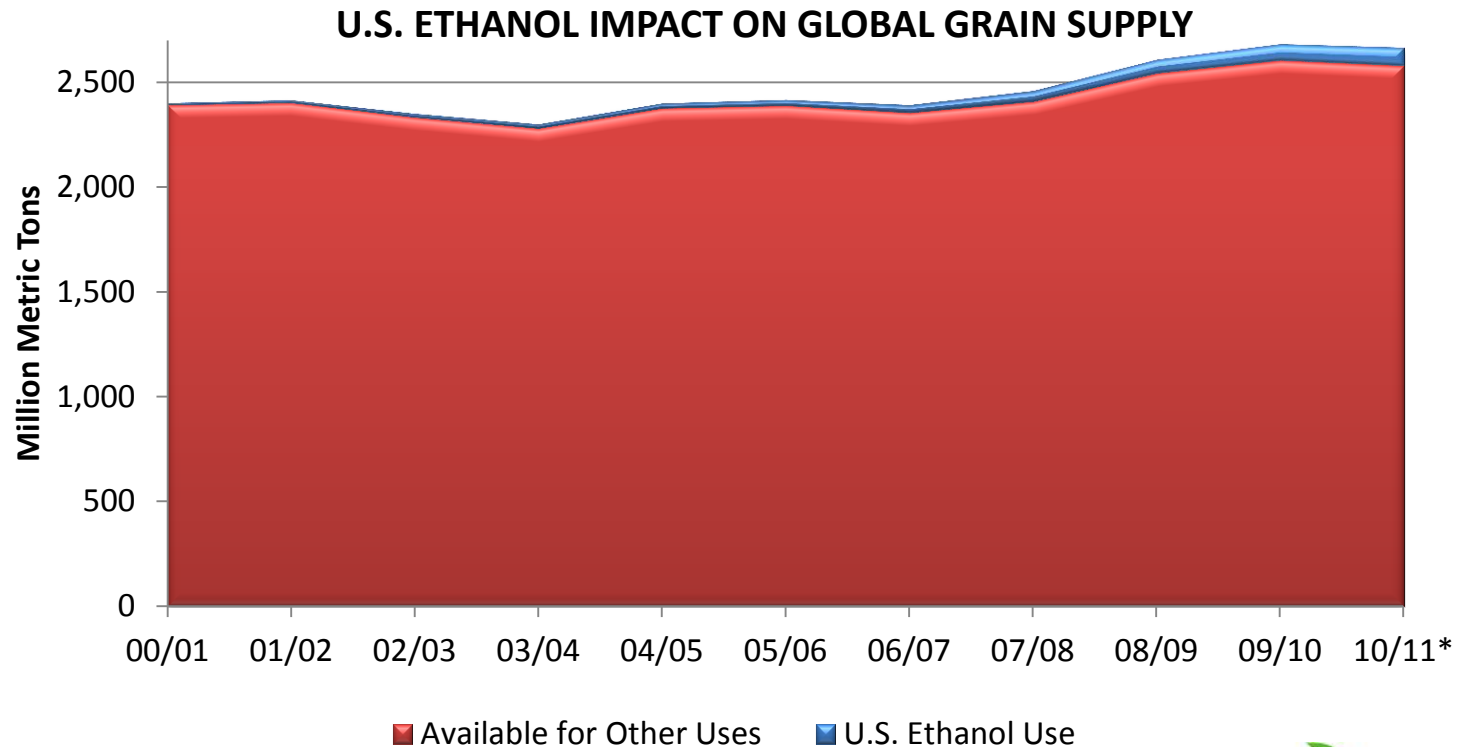
U.S. ETHANOL USE OF 2010/11 GLOBAL GRAIN SUPPLY



- U.S. ethanol industry uses NO wheat or rice, which are important food grains in developing world
- Coarse grains (corn, oats, etc.) generally not consumed directly by humans

Grain not being “diverted” for fuel use

- Ethanol has not affected availability of grains for feed and food use
- Total 2010/11 world grain supply 11% larger than 2000/01 supply
- Grain supply available for **non-ethanol** use:
 - 2000/01 = 2,392 m. metric tons
 - 2010/11 = 2,579 m. metric tons (7.8% larger)



Questions