Fundamental Analysis for Grain

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Texas A & M University Master Marketers Conference, Waco, Texas, January 26, 2011

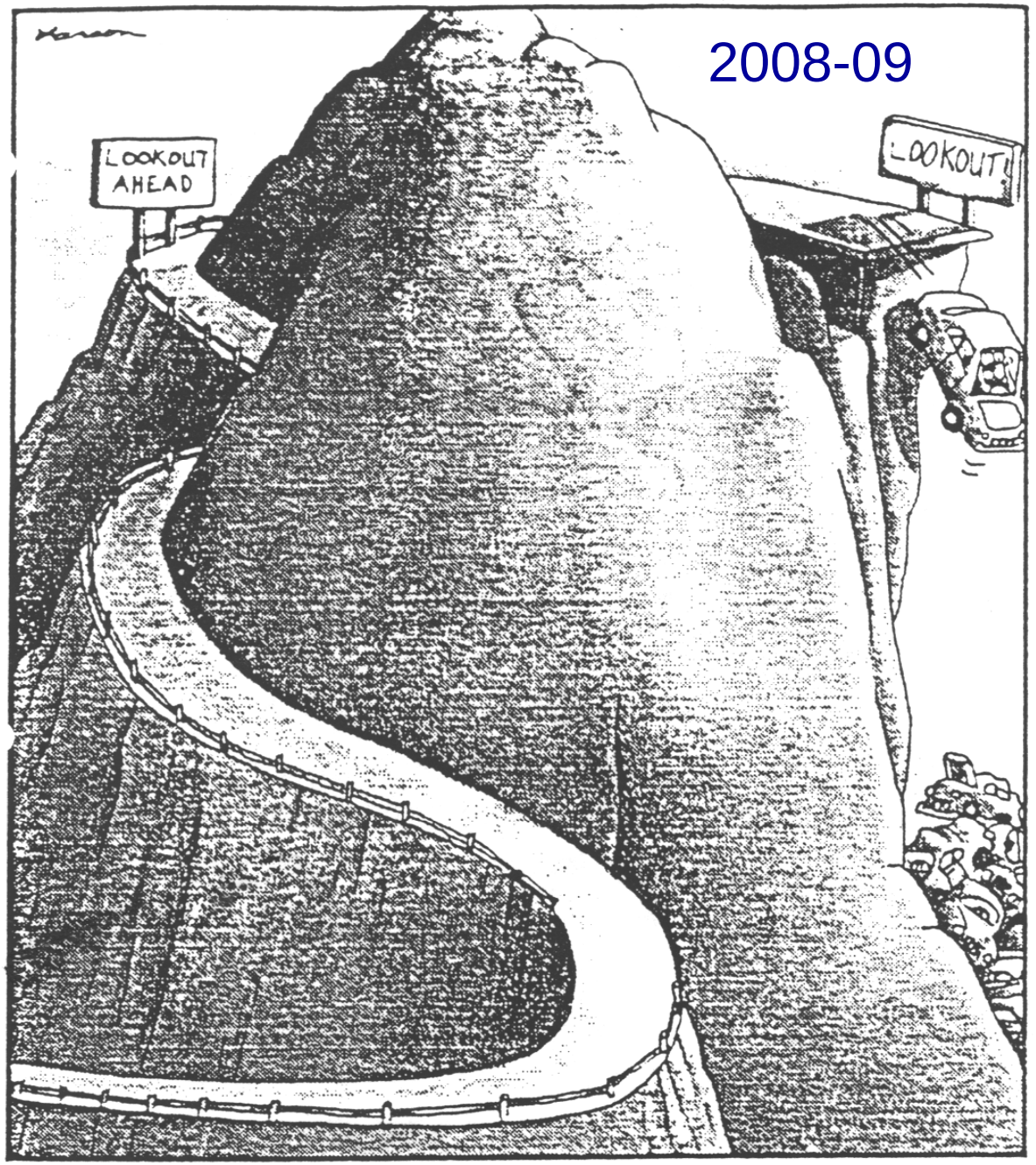
- **The process of analyzing supply and demand, developing price forecasts**

Objectives

- **Illustrate some key tools of grain price forecasting**
- **Explain the role of fundamental analysis in marketing**
- **Show our current outlook for corn, soybeans, & wheat – 2011 & 2012 crops**
- **Some longer-term developments**

Marketing Plan Fundamentals

- **Start early**
- **Know *your* cash-flow costs & *risk bearing* ability**
- **You can't go broke taking a profit**
- **Very often, the best corn & SB pricing opportunities are during Jan.-May before harvest. Consider puts @ planting time**
- **Use revenue insurance as companion to pre-harvest pricing, not substitute**
- **Be cautious with complicated new contracts**
- **Understand basis & storage costs**
- ***Use fundamental analysis as mktg. guide***


2008-09
LOOKOUT AHEAD
LOOKOUT!

Today's Risk Environment

- **Uncertain U.S. Dollar & Weather**
- **Global Biofuels – large new Demand**
- **Low World Grain Reserves**
- **Newer Risk-Management Tools**
- **Uncertain Govt. Payments**
- **Insurance: a companion tool for mktg.**
- **Reduced World Competition**

Topics to Be Discussed

- Processes for Grain Supply-Demand Analysis
  - Old-crop & new-crop
- U.S. Ethanol Trends & Effects on Global Feed Supply-Demand
- USDA & other information sources
- Key Players in World Grain & Feed Trade
- Emerging Developments in China's Grain
- The Future: Potential Areas for increased Crops
  - South America
  - Former Soviet Republics
  - China Corn?

Fundamental Analysis

- **Balance Sheets – A Key Concept**
- **Analyzing Export Demand**
- **Analyzing Domestic Demand**
- **Analyzing Potential Supply**
- **S-D, Carryover & price relationships**
- **Seasonality**
- **Some Key Web Sites**
- **Current Examples**

Why Forecast?

Market Risks are large

Business Decisions: based on committed & expected future costs & returns

- **Crop acreage mix depends on prices**
- **How much N to put on corn**
- **Sell @ harvest, store into summer?**
- **Contract for harvest or later delivery?**

Base decisions on hunch or best available information?

Role of Fundamental Analysis

- **Shows what to watch**
- **Gives guide to market sensitivity**
- **Helps quantify new market impacts**
- **Provides a benchmark price for plans**
- **Guiding principle: Price *influenced* by *expected* supply and demand**

Fundamental vs. Technical Analysis

- *Technical:* road map and driving rules for traders as they follow market reaction to Supply-Demand
- *In the short run, markets over re-act & deviate from fundamentals, but supply & demand ultimately rule the market*

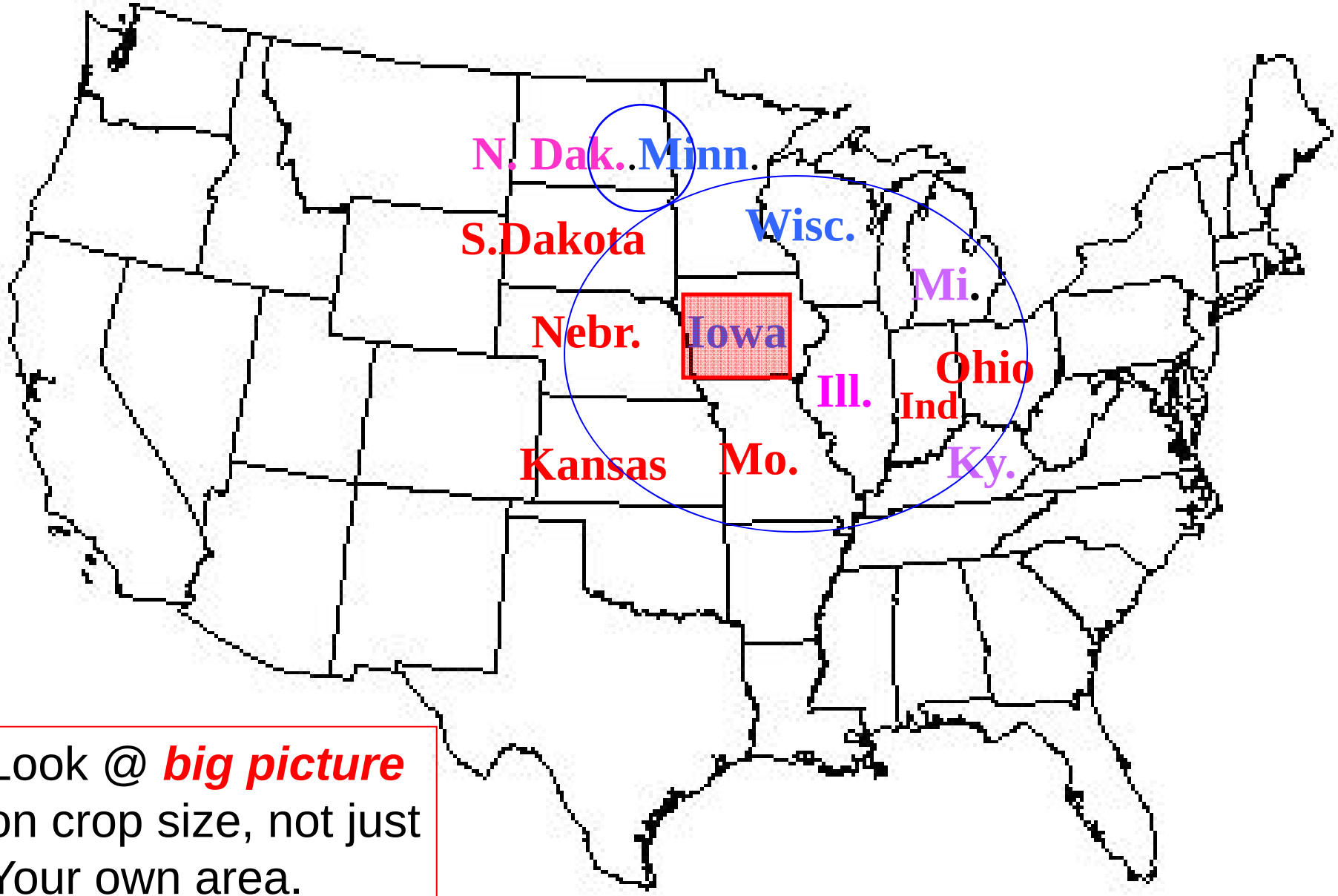
Objectives in This Session

- Not to make you expert forecasters
- Understand how good forecasts are made
- Understand limitations of forecasts
- Identify good information sources
- Provide guides to help anticipate market reactions
- Update on grain outlook for 2011-12 & how outlook was developed

Forecasting Rules

- Search for the **big picture**
- New-crop futures markets are not good forecasters
- ***Never say always or never***
- If you forecast, forecast often
- Have a good historical perspective
- **Be a contrarian:** majority of traders is often wrong
- Respect market trends
- Inflation seldom increases corn & bean prices **(but may via oil & $)**

The U.S. Corn/Soybean Belt



Look @ ***big picture*** on crop size, not just Your own area.

81% of U.S. corn & 85% of soybeans are grown outside Iowa

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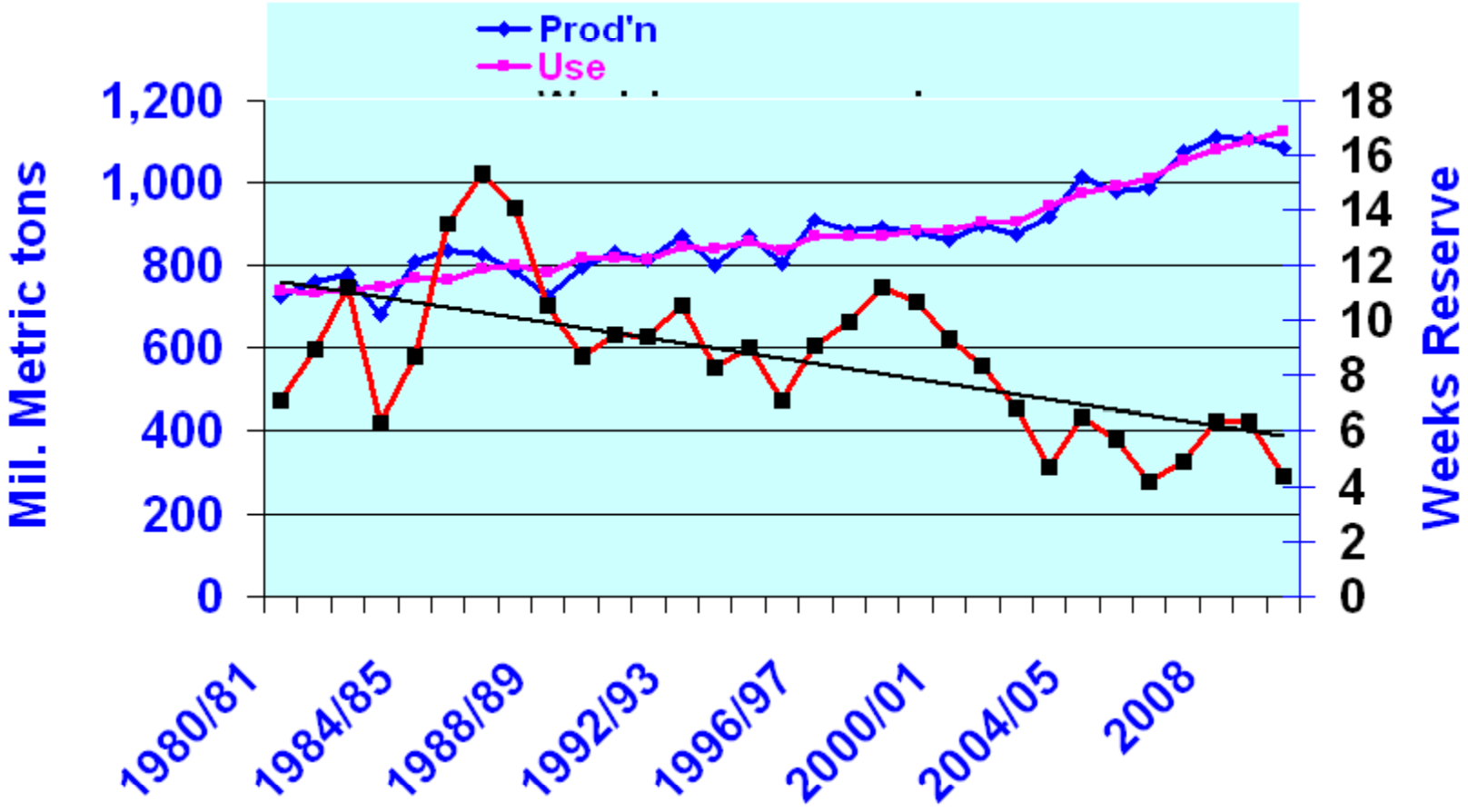
World Feed Grain Production, Use, Carryover & Months of Reserve Supply Beyond Pipeline Needs



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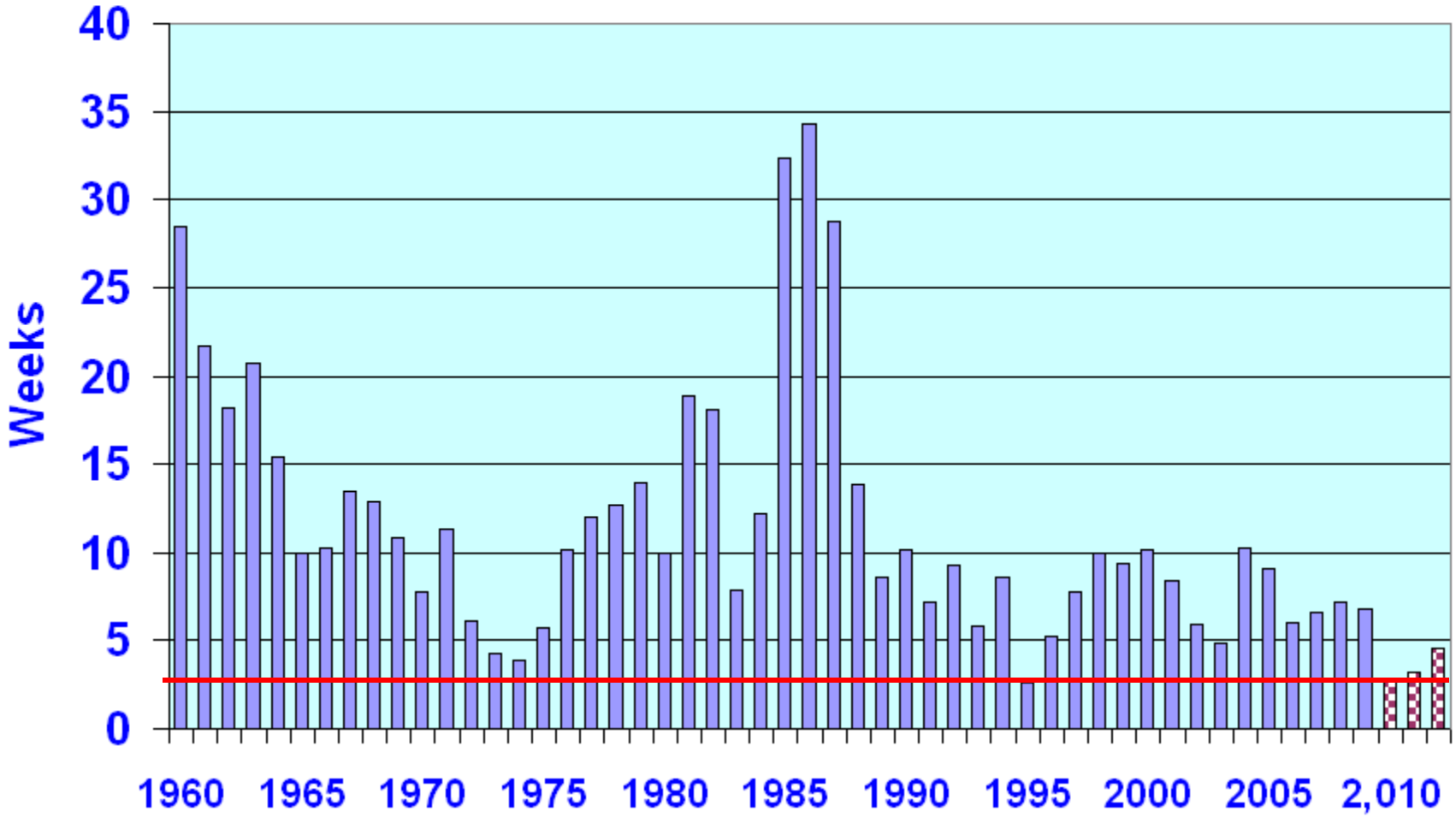
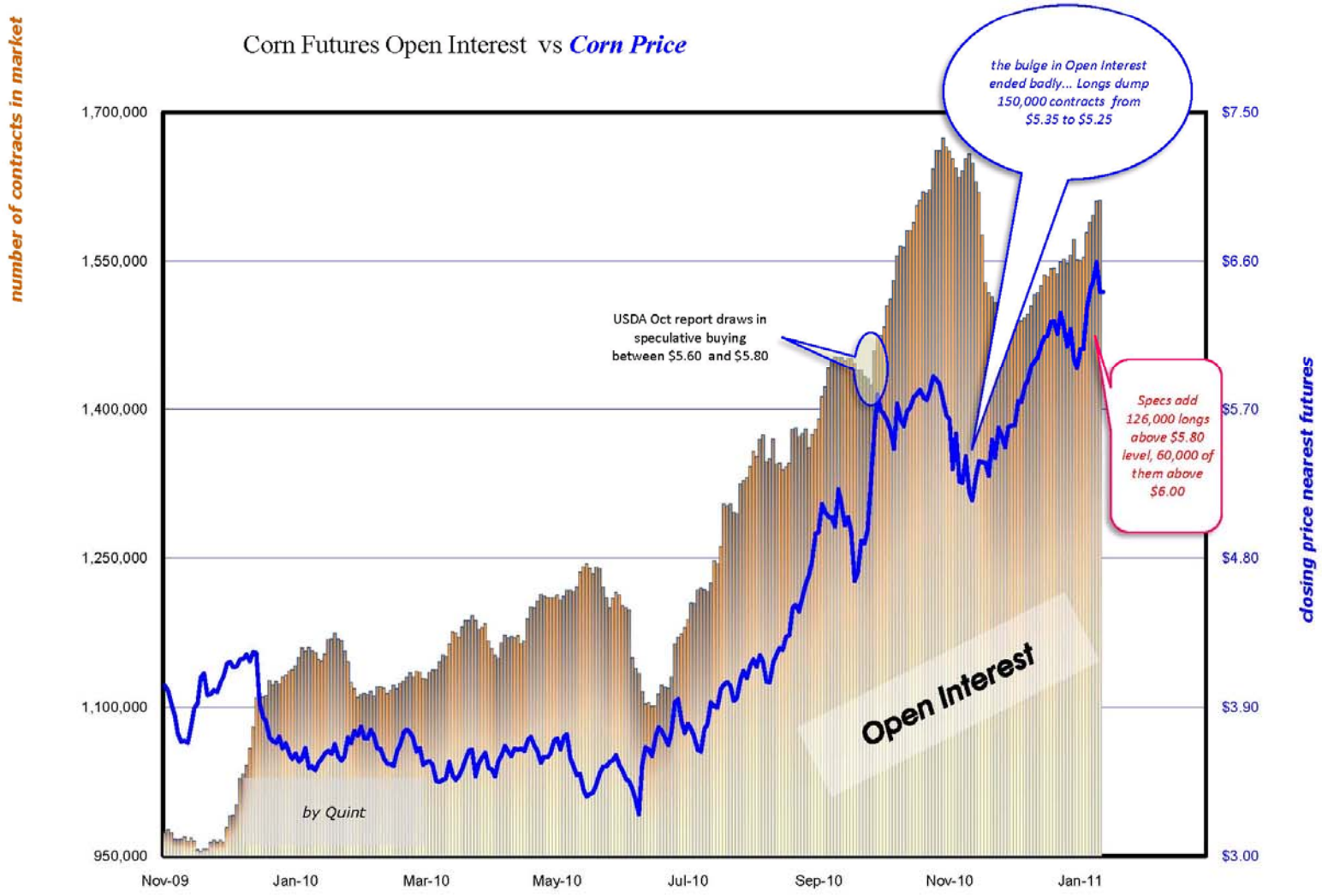
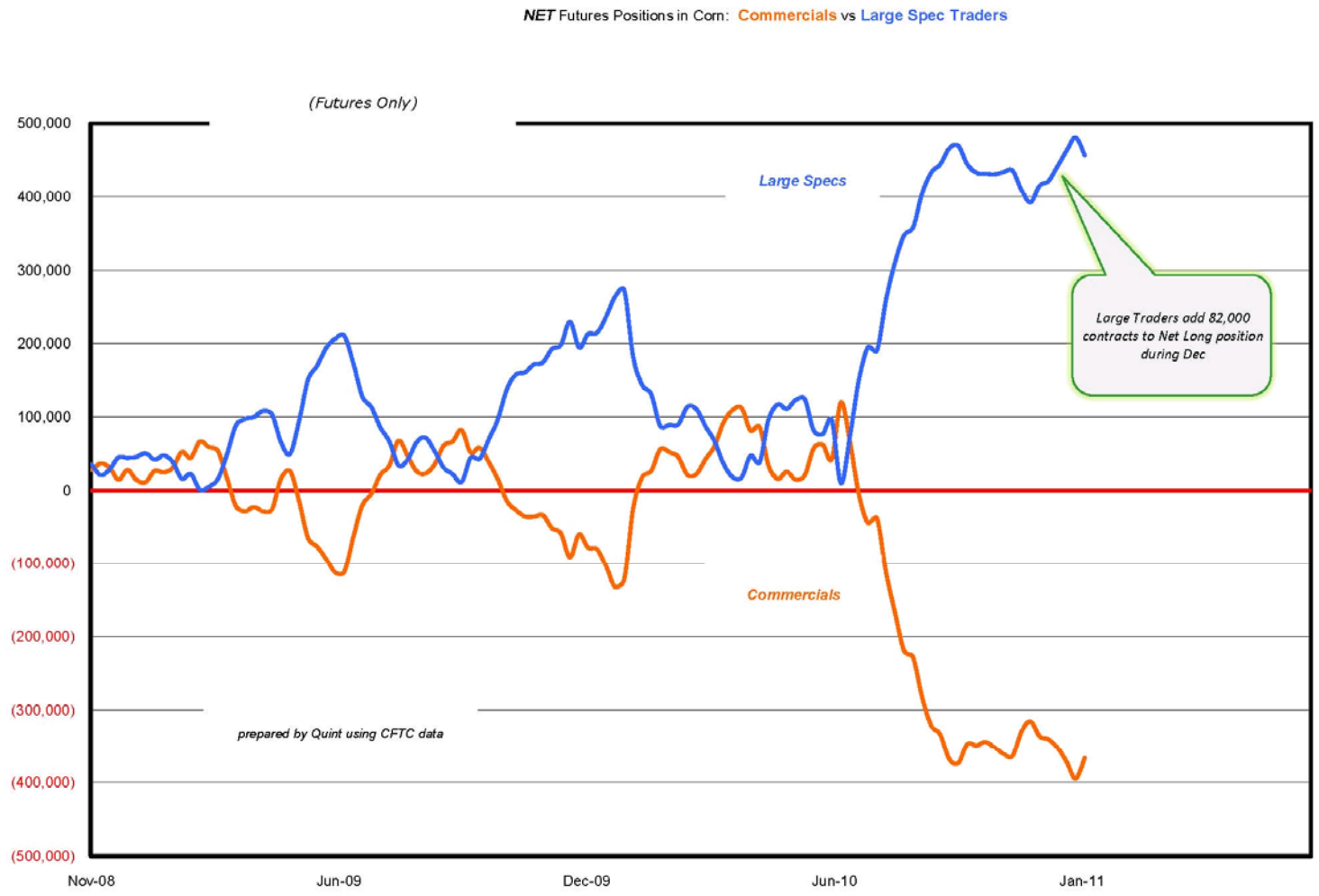
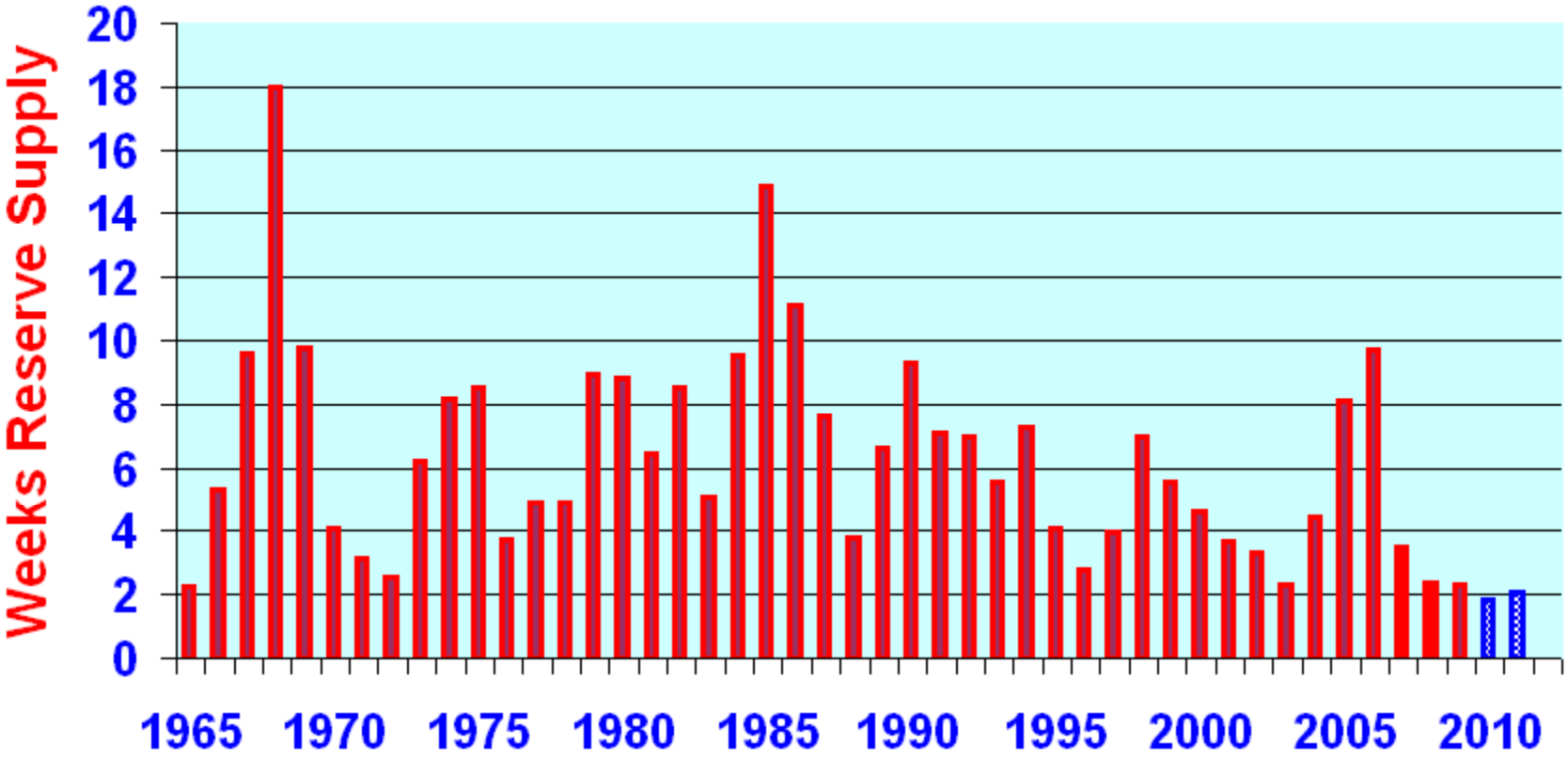
U.S. Corn Carryover Stocks in Weeks Supply

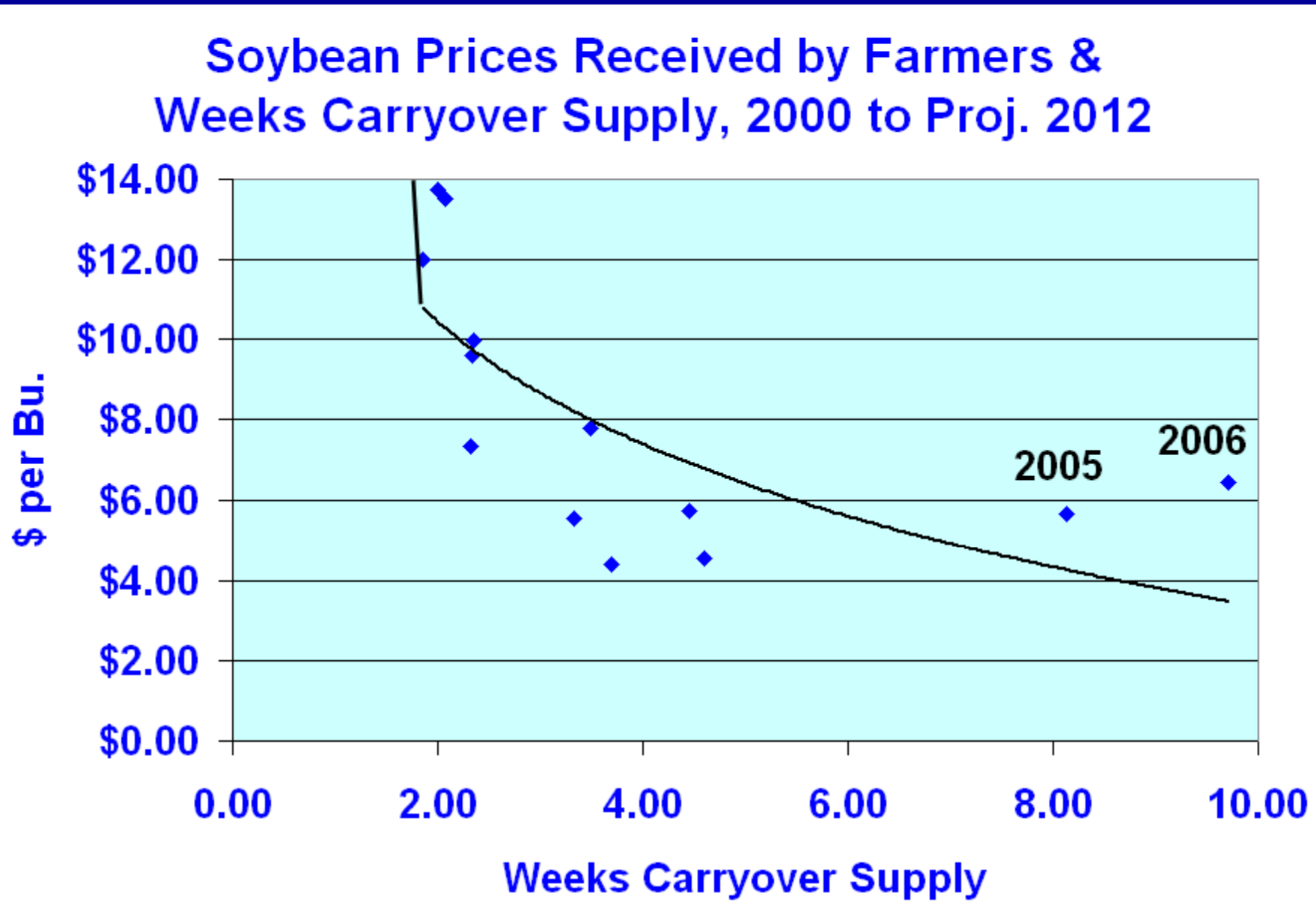



Corn Futures Open Interest vs Corn Price
number of contracts in market
closing price nearest futures
1,700,000
1,550,000
1,400,000
1,250,000
1,100,000
950,000
$7.50
$6.60
$5.70
$4.80
$3.90
$3.00
Nov-09
Jan-10
Mar-10
May-10
Jul-10
Sep-10
Nov-10
Jan-11
the bulge in Open Interest ended badly... Longs dump 150,000 contracts from $5.35 to $5.25
USDA Oct report draws in speculative buying between $5.60 and $5.80
Specs add 126,000 longs above $5.80 level, 60,000 of them above $6.00
Open Interest
by Quint


NET Futures Positions in Corn: Commercials vs Large Spec Traders
(Futures Only)
500,000
400,000
300,000
200,000
100,000
0
(100,000)
(200,000)
(300,000)
(400,000)
(500,000)
Large Specs
Commercials
Large Traders add 82,000 contracts to Net Long position during Dec
prepared by Quint using CFTC data
Nov-08
Jun-09
Dec-09
Jun-10
Jan-11

U.S. Soybeans,Weeks Supply




Soybean Prices Received by Farmers &
Weeks Carryover Supply, 2000 to Proj. 2012
$ per Bu.
$14.00
$12.00
$10.00
$8.00
$6.00
$4.00
$2.00
$0.00
2005
2006
0.00
2.00
4.00
6.00
8.00
10.00
Weeks Carryover Supply

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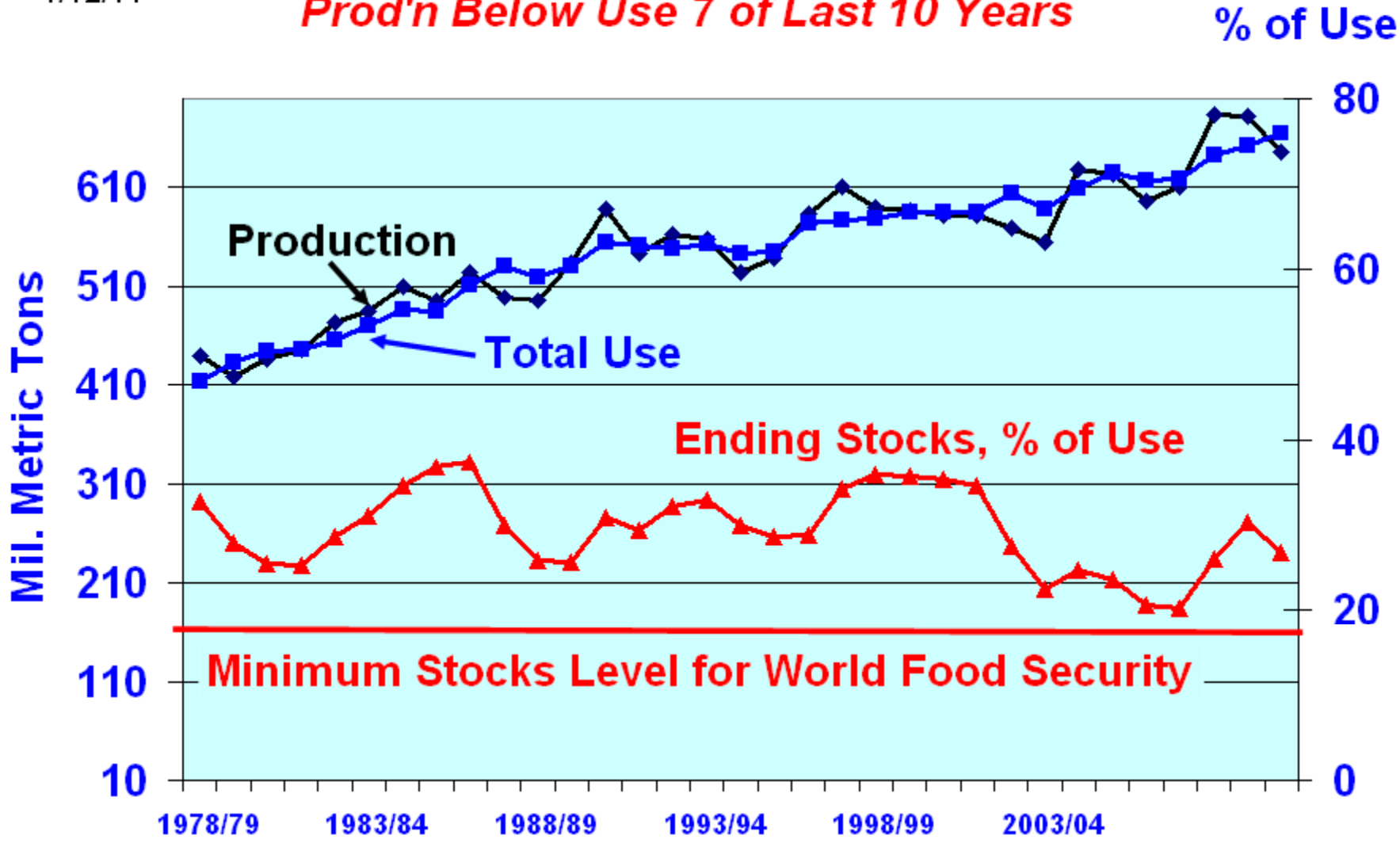
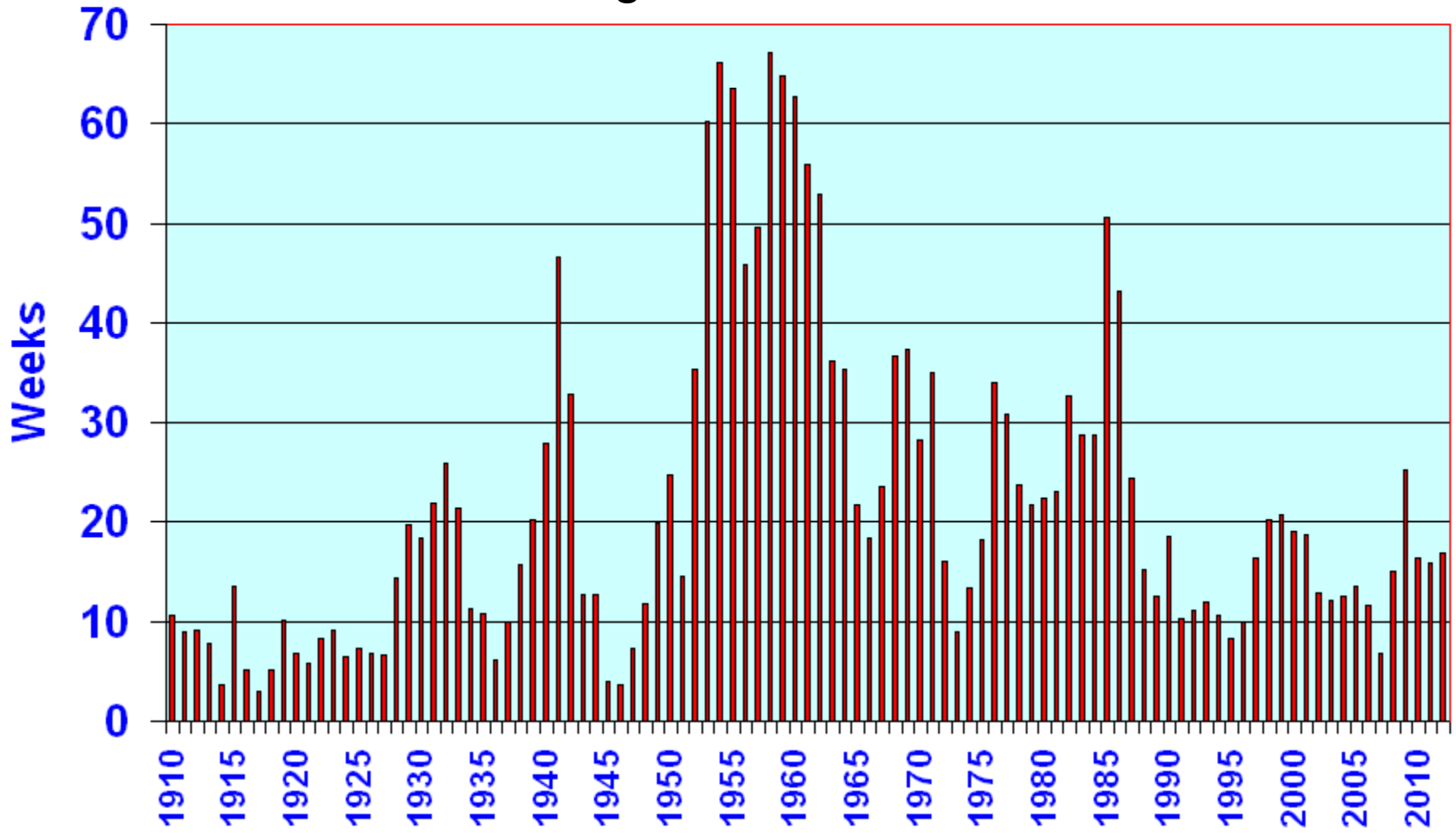
World Wheat Production, Use & Stocks

Prod'n Below Use 7 of Last 10 Years

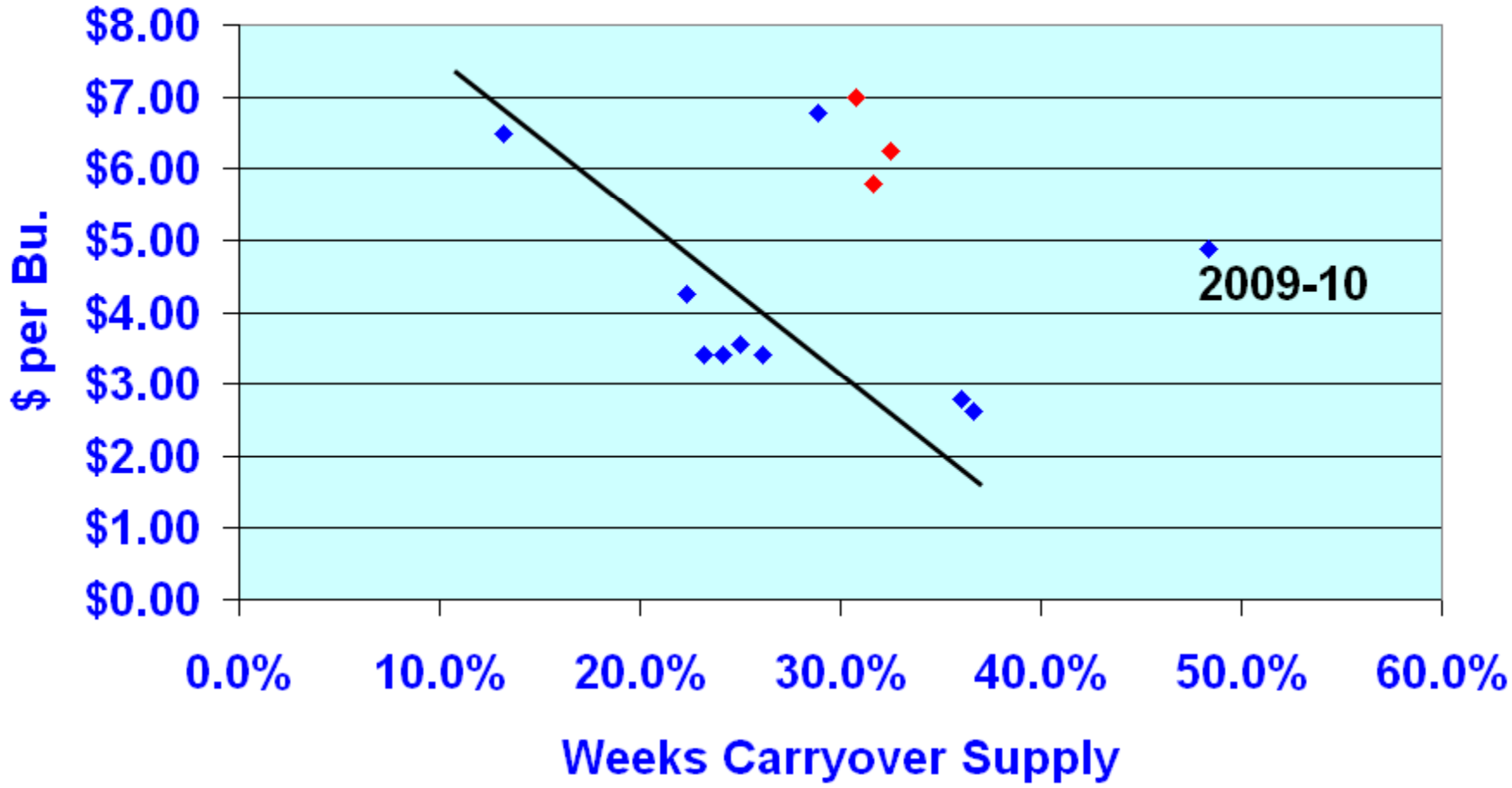


U.S. Wheat Carryover Stocks, Weeks' Supply

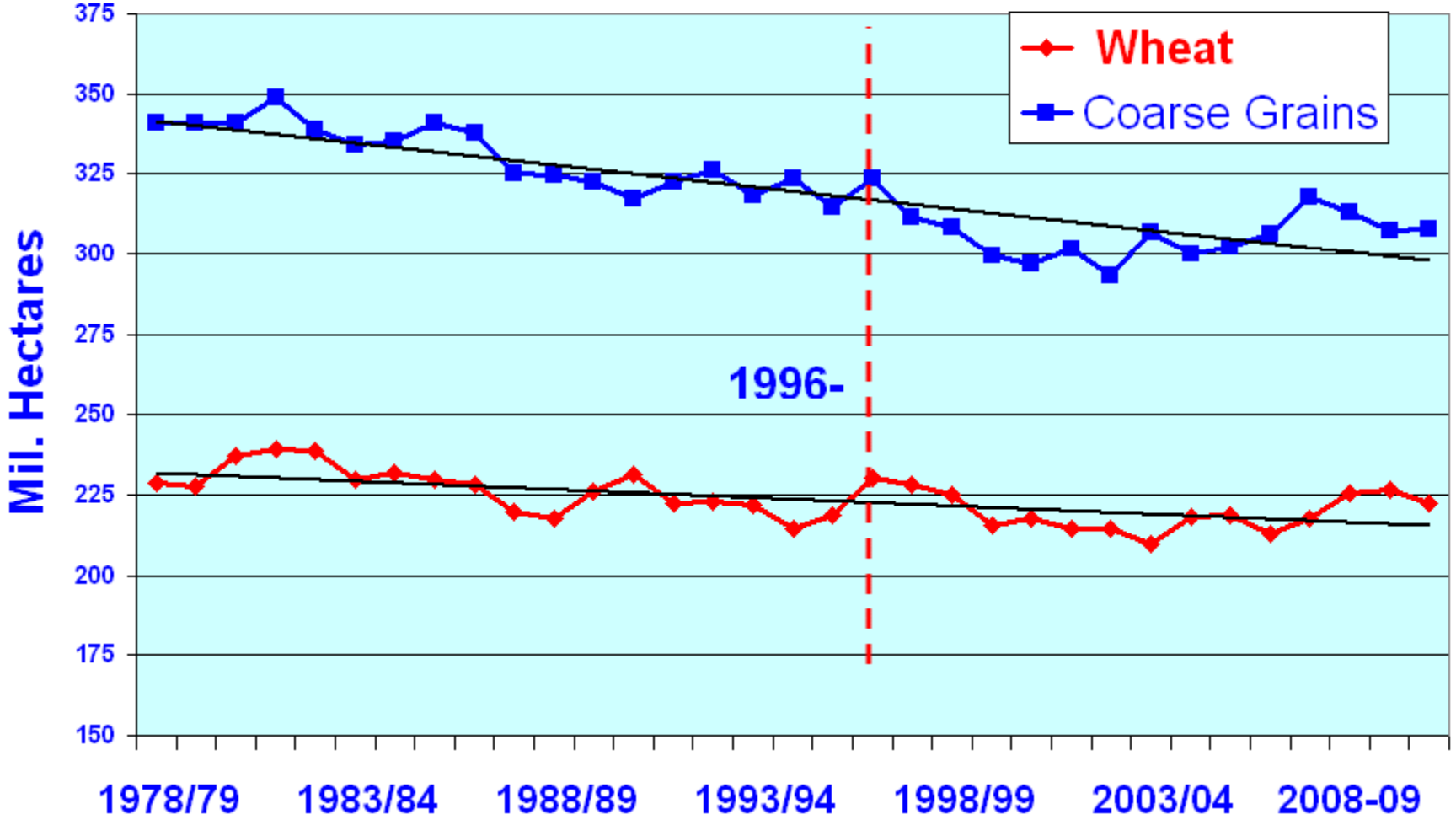
Not as tight as corn & sb



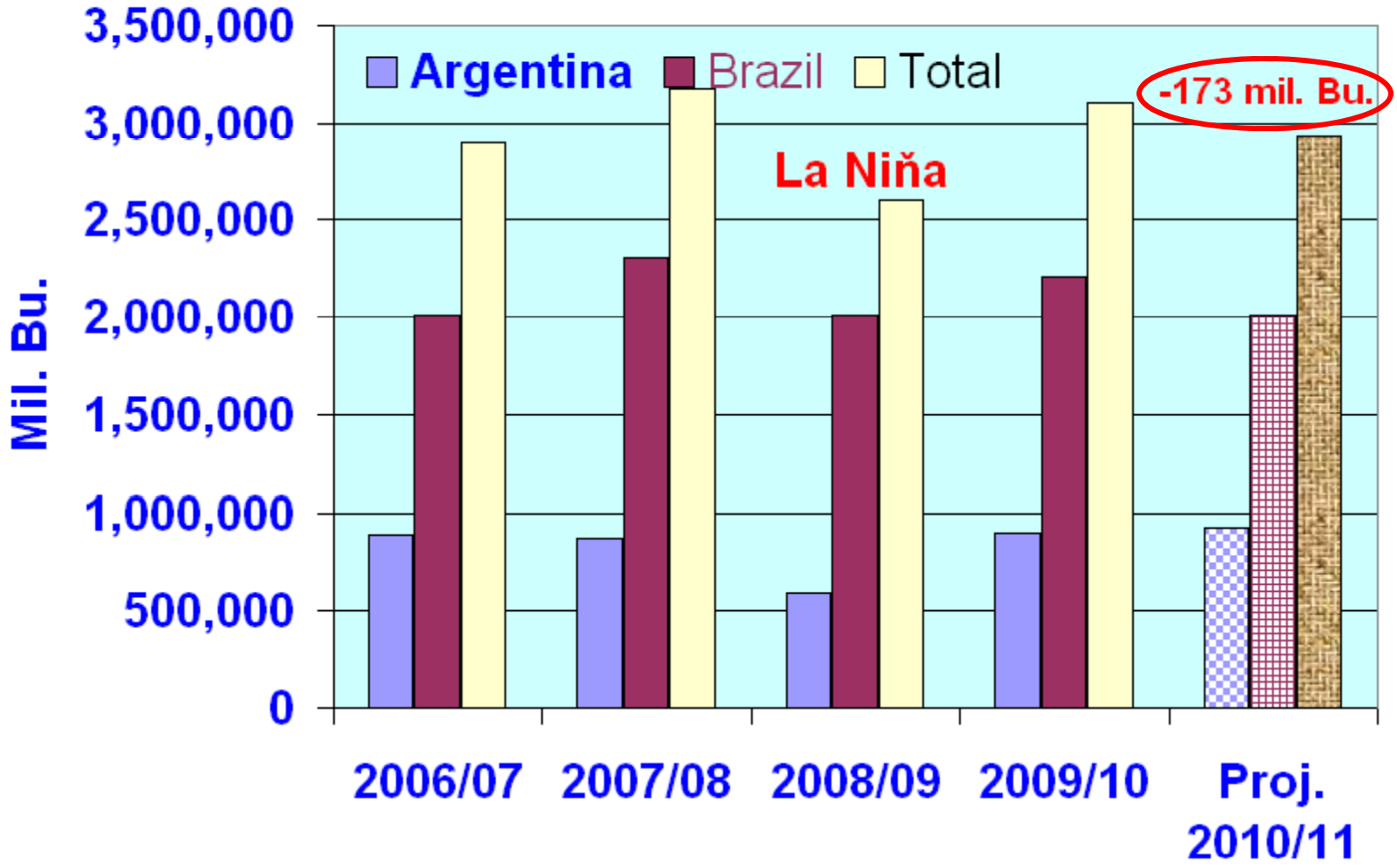
Wheat Prices Received by Farmers & Carryover % of Use, 2000 to Proj. 2012



World Wheat & Coarse Grain Area: Another 1996?



Argentina & Brazil Corn Production



South American Soybean Production

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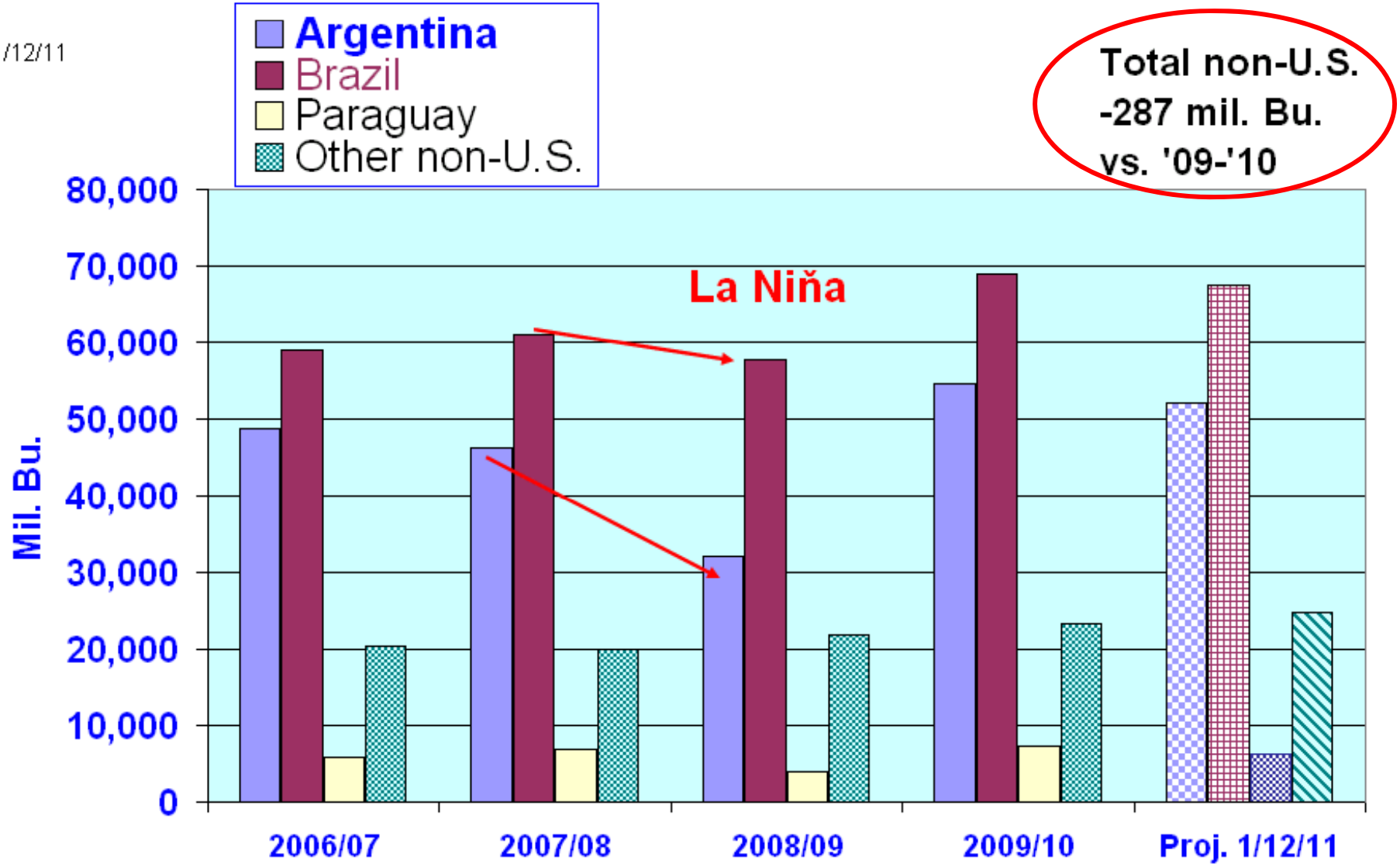


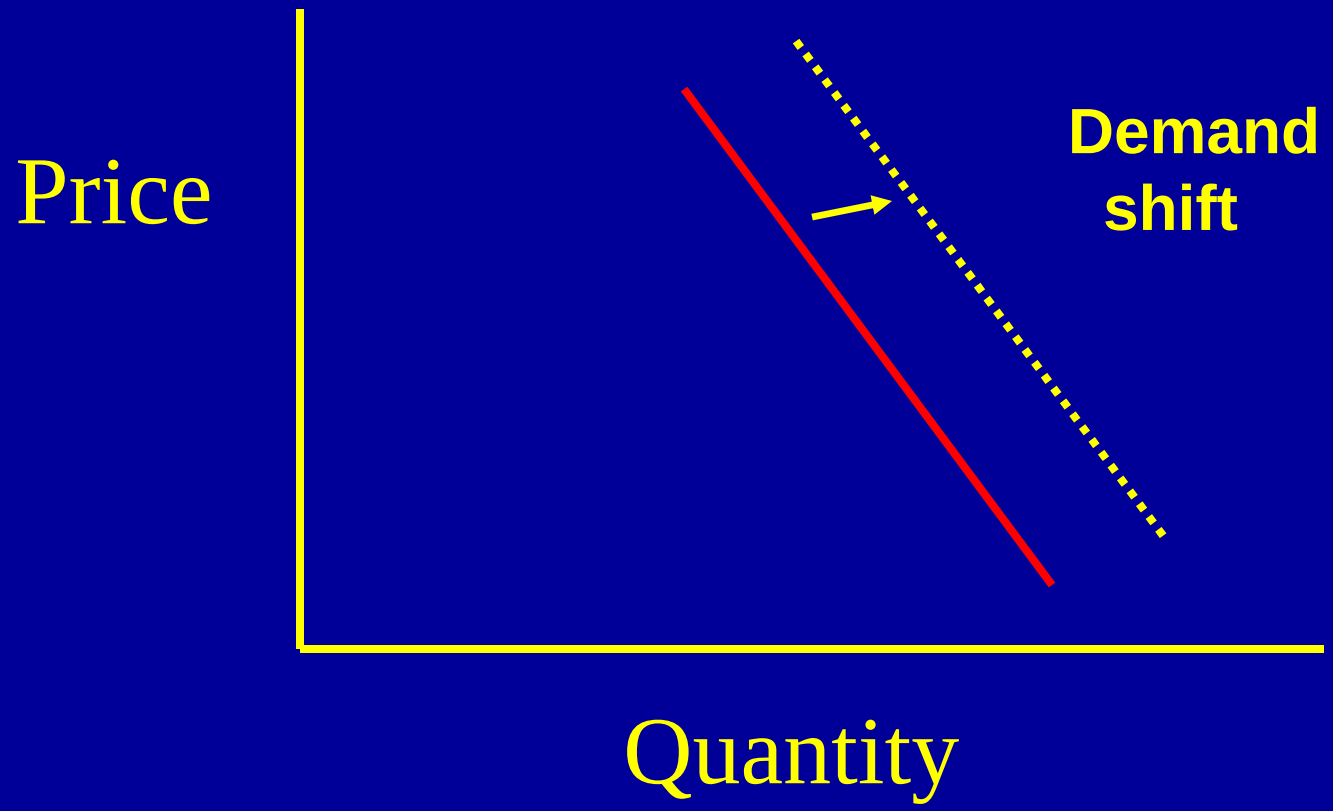
Some Principles

- **The market guides production**
- **Demand has two dimensions: *quantity & price***
- **Supply is two dimensional: *quantity & price***
- **Market equilibrium: *price where quantity demanded equals quantity supplied***
- **If quantity supplied exceeds quantity demanded, price declines**

FORECASTING CONSIDERATIONS: GRAIN

- **Price influenced by supply, demand, & competing products S-D (wheat)**
- **Prices influenced by current & expected future conditions**
- **Grain is a global Market**
- **Weather: a major supply factor**
- **Government policy: U.S. & foreign: EU biodiesel tax example**

Demand: Two dimensions



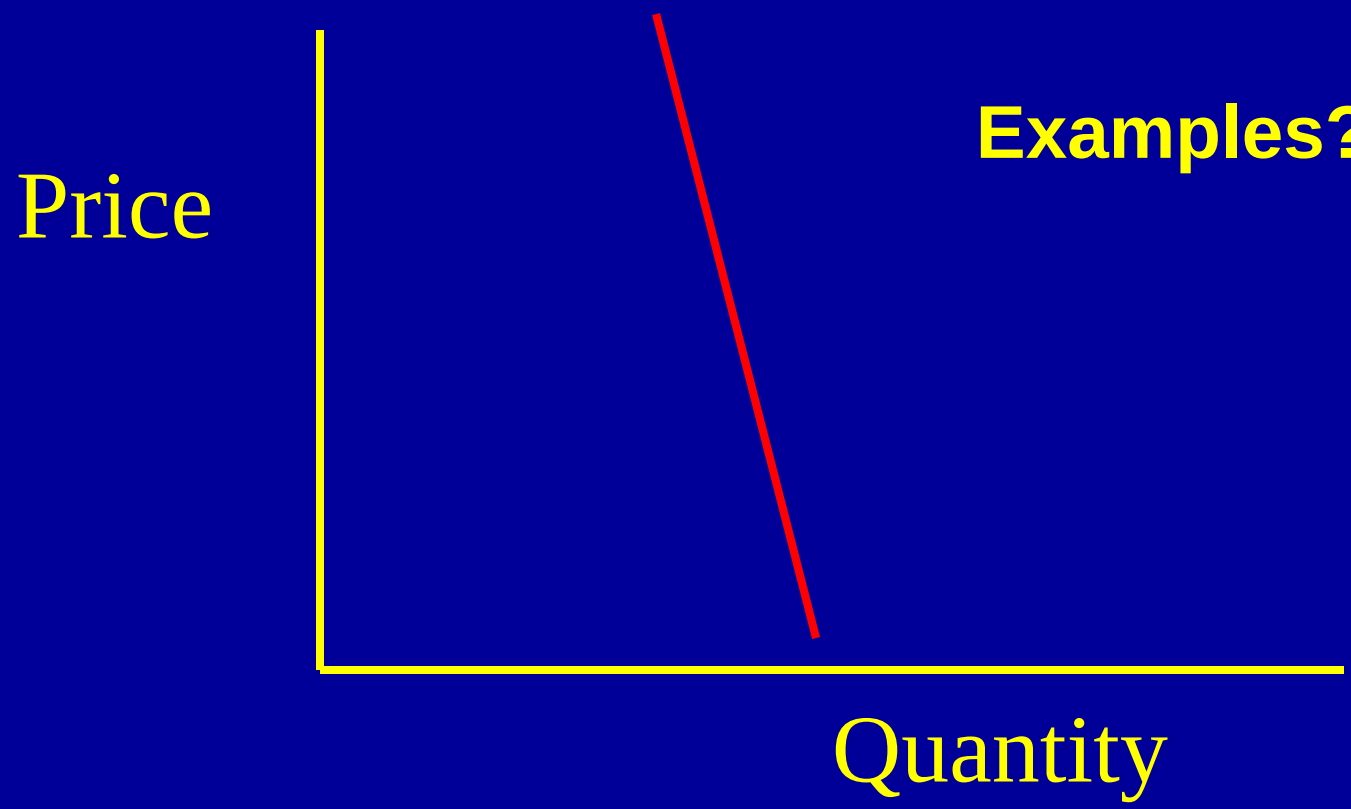
Price Elasticity of Demand

- How quantity demanded changes with price
- Mathematical expression:

% change in Quantity with a 1% change in price

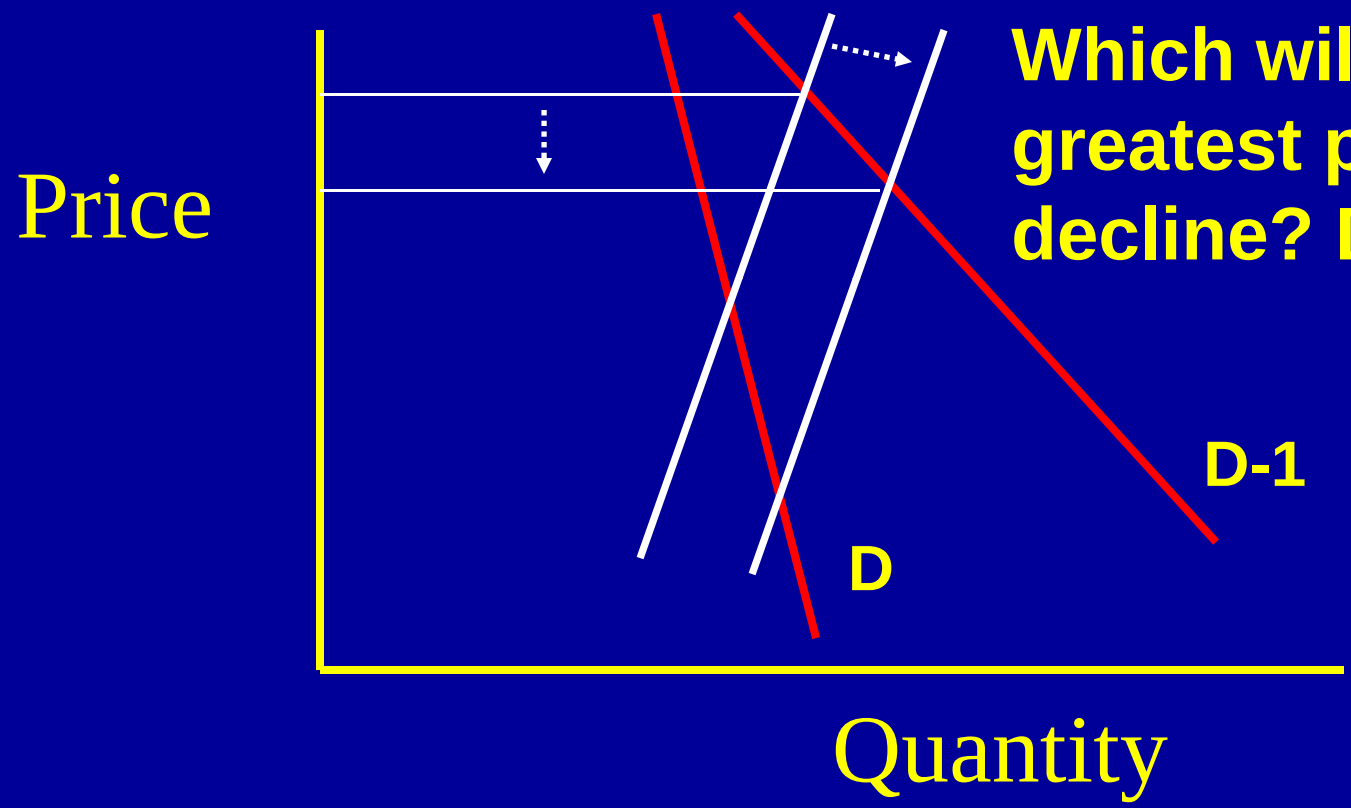
- Price flexibility: 1/elasticity (price impact with supply change)

Inelastic Demand



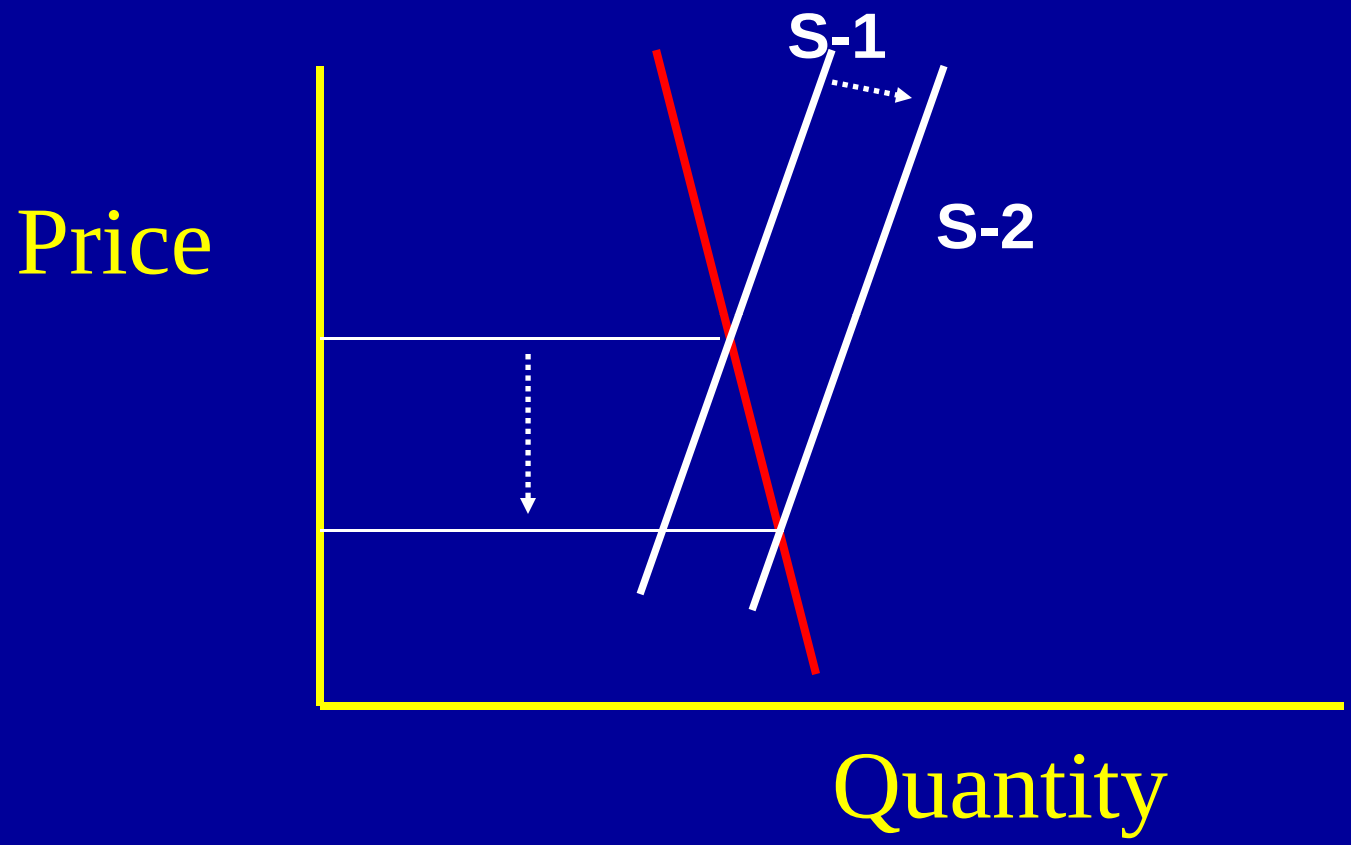
Examples?

Elastic & Inelastic Demand



Which will cause greatest price decline? D or D-1?

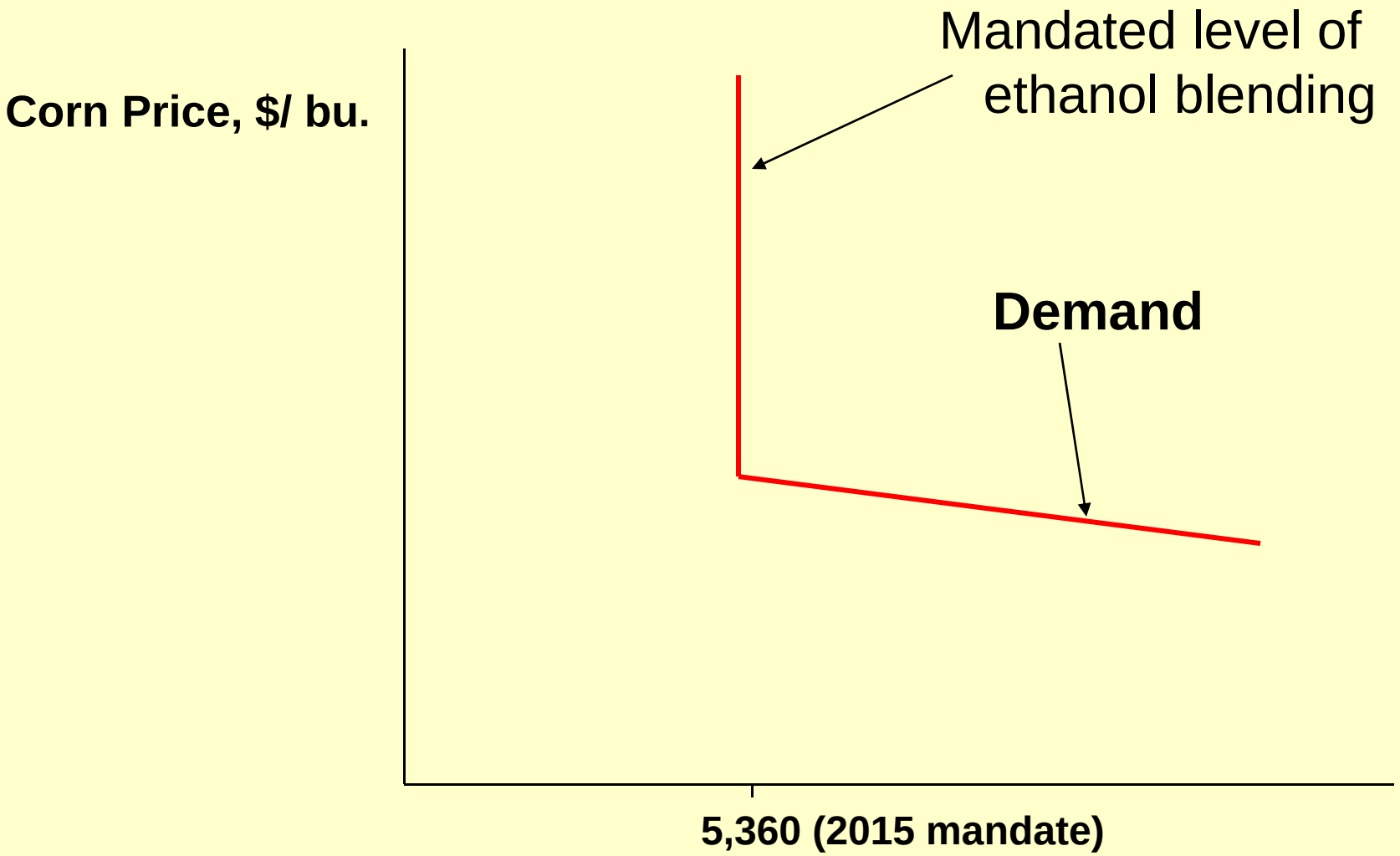
Inelastic Demand



Is elasticity of D for corn changing?

Corn Elasticity of Demand

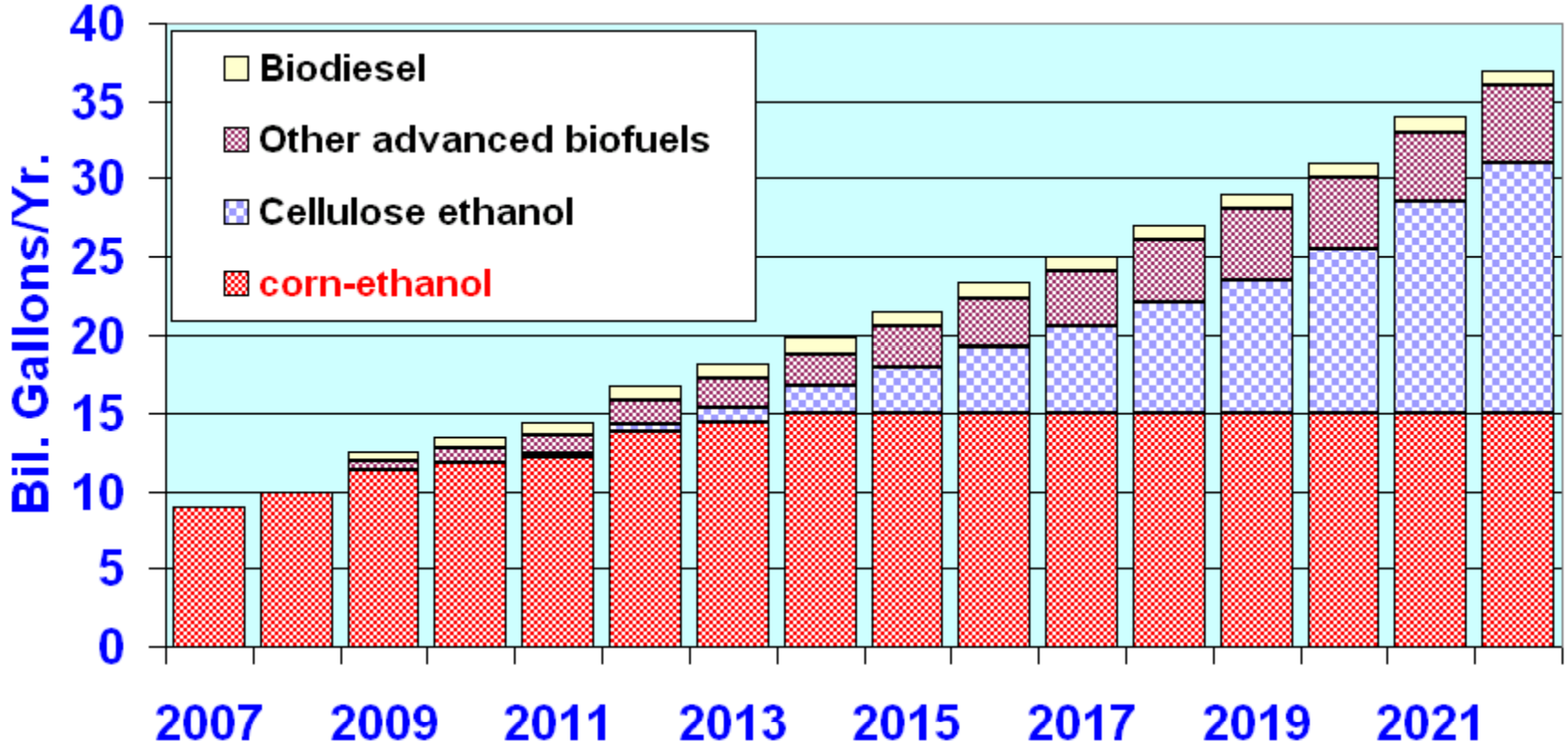
- **Percent change in Quantity demanded with one percent change in Price**
- **Corn: formerly -.5% (this may now be -.2)**
- **Soybeans: -.4% (this may now be -.25)**
- **Or 1% chg. in corn S = 5% chg. In price**
- **1% chg. In SB S = 4% chg. in price**
- ***With all other market factors unchanged***



Demand for U.S. Corn for ethanol With Mandates

GHG Emissions Also a Big Issue

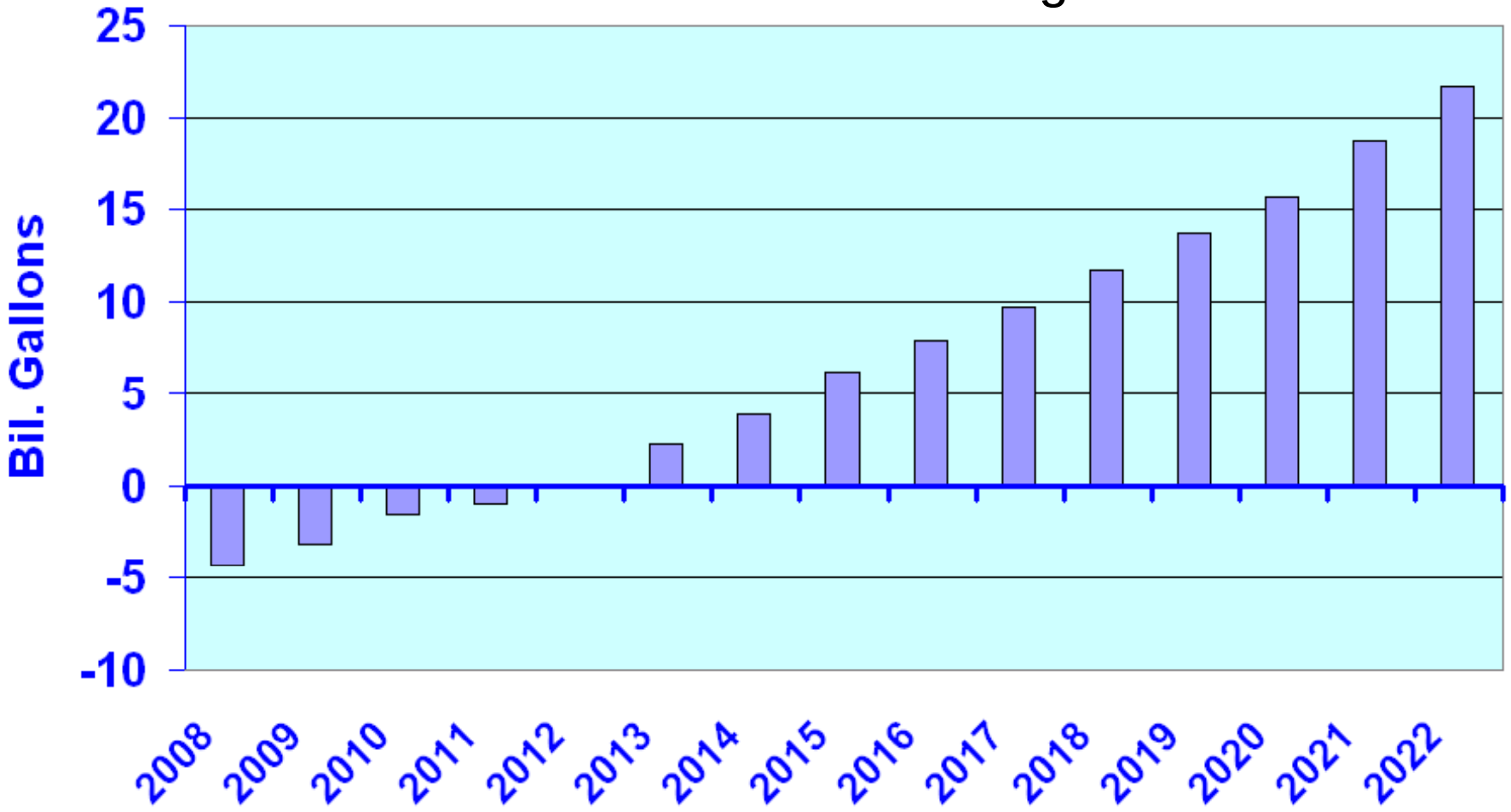
2007 U.S. Energy Act Biofuels Mandates



Mandates = Minimum ethanol blending volume

The Blending Wall: Ethanol Mandates in Billion Gallons Beyond the E-10 Market

E-15: a solution to the blending wall?



Current U.S. Ethanol Markets: E-10 & E-85

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Figure 2. Corn Utilization Trends

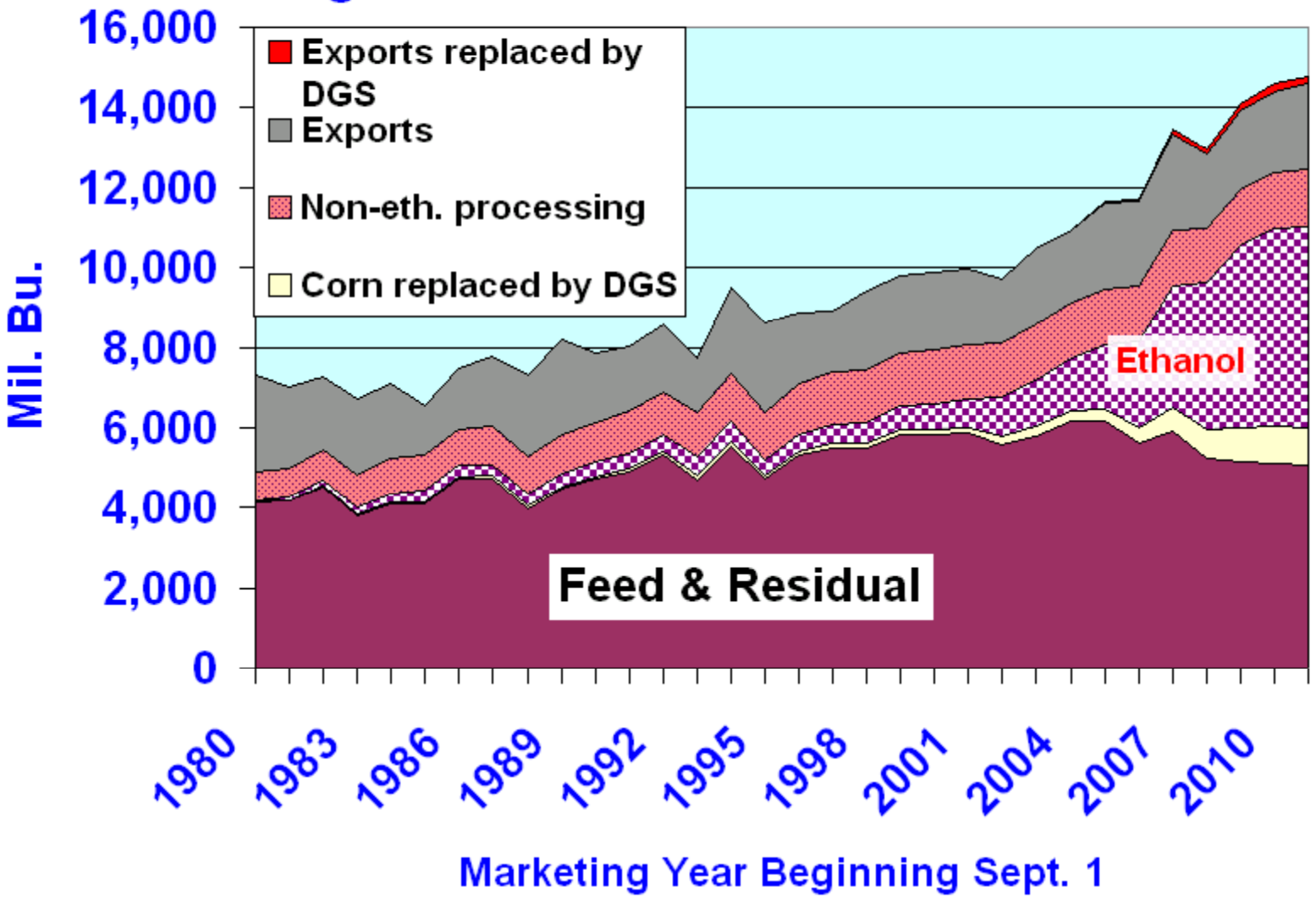

Figure 3. Mil. Tons Global Coarse Grain Exports & U.S. Corn Use for Fuel Ethanol

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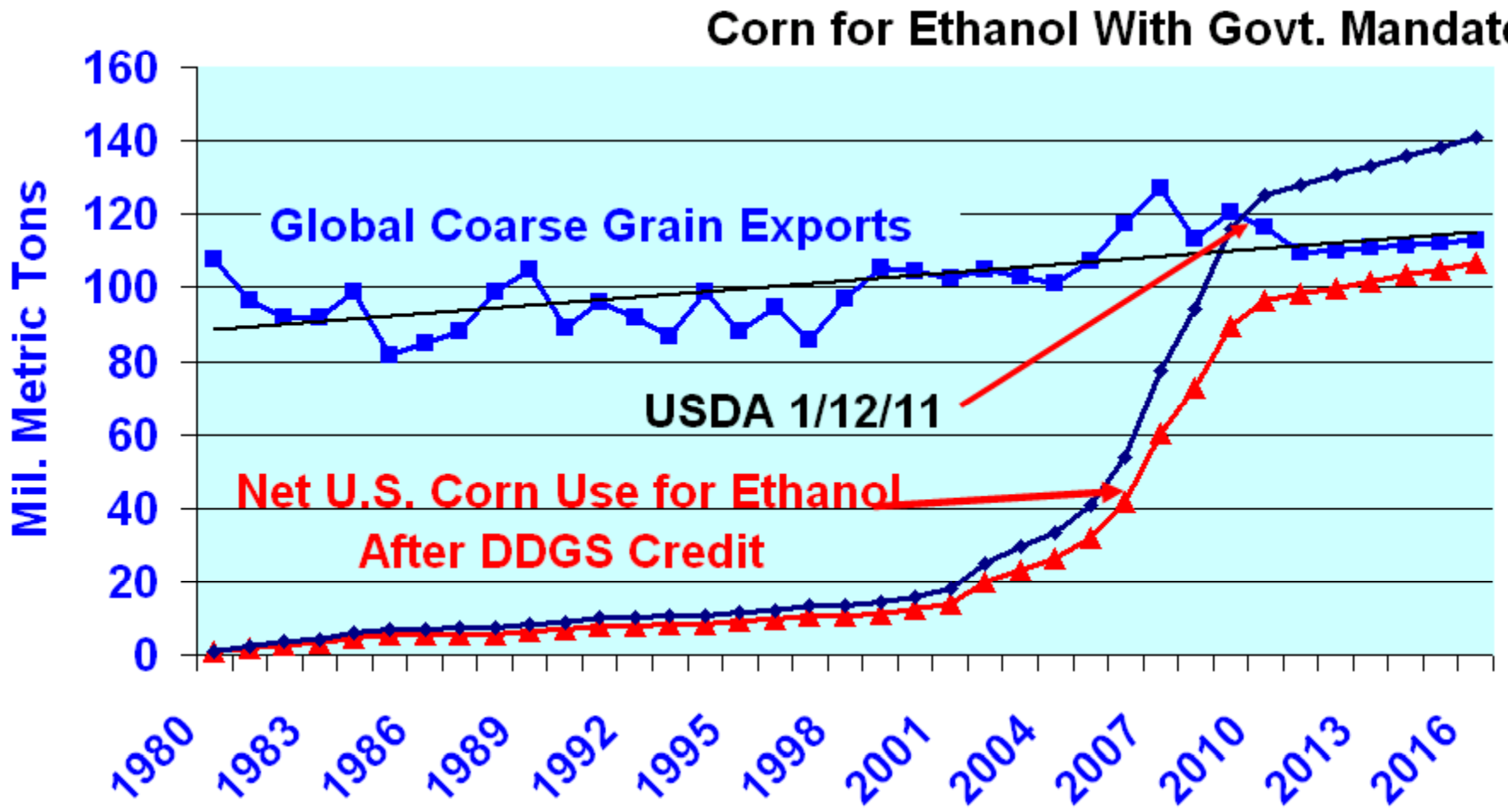

41 Countries Encourage Biofuels

Ethanol, demand growth & food inflation shifting China from to corn exporter to importer?

Three Grain Price Forecasting Methods

1. Carryover percent of total use
2. Computer forecasting model
3. Price flexibility based on elasticity of demand

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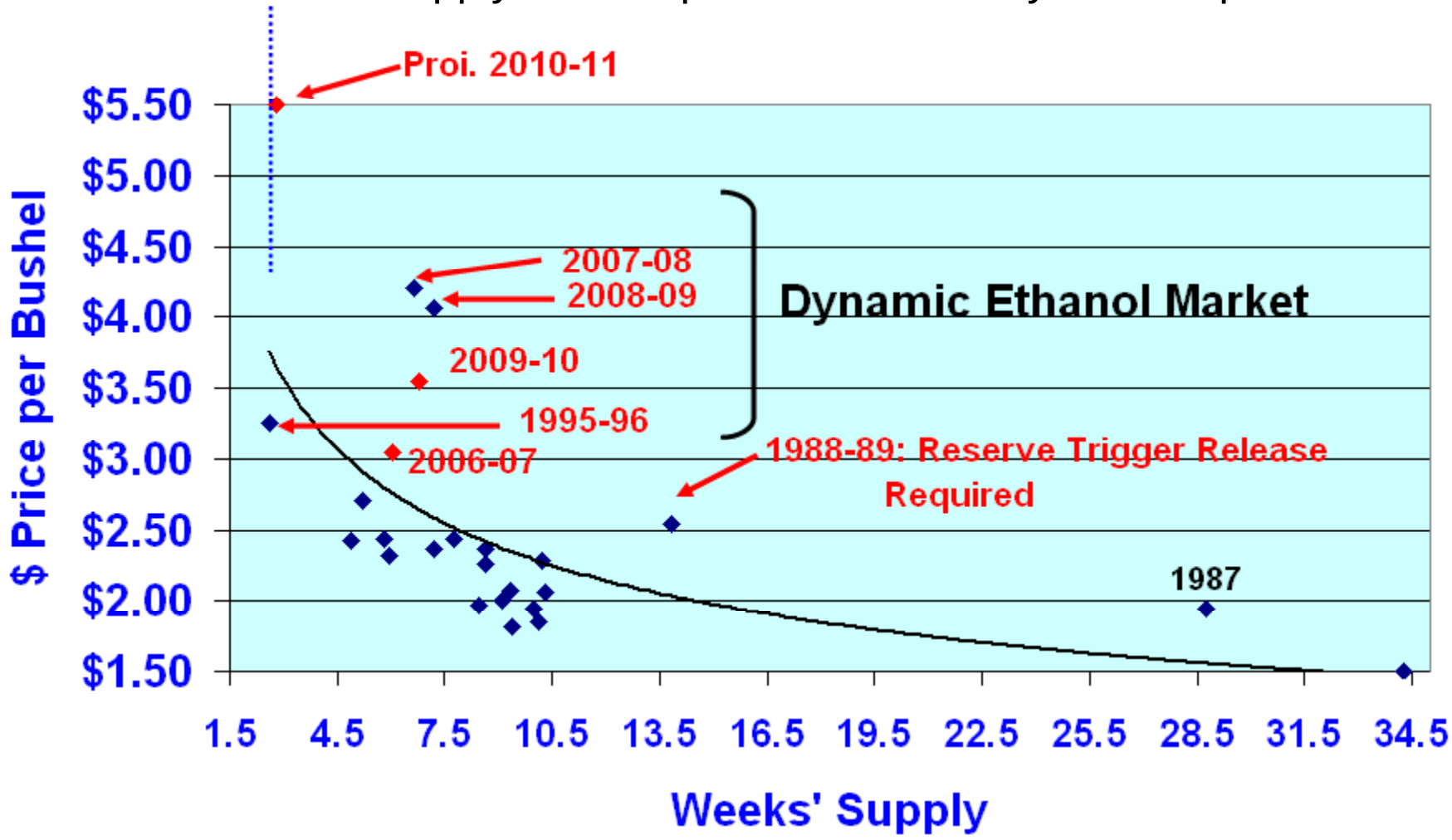
U.S. Corn Price & Carryover in Weeks Supply

5 weeks supply or less: price influenced by ethanol price



Forecasting with price flexibilities

- Percent change in ’10-1 supply vs. Y/A
- Adjustment for demand growth
  - Feed use
  - Processing
  - Exports
- Forecast: Price flexibility x adjusted supply change x previous year’s price
- Adjustment for unusual developments

R. Wisner — Updated:1/12/2011

Table 1. Corn Balance Sheet	2006-07	2007-08	2008-09	2009-10	Projected 2010-2011	Projected 2011-2012 Low	Projected 2011-2012 Med.5/	Projected 2011-2012 High	Projected 2012-2013 Low	Projected 2012-2013 Med.5/	Projected 2012-2013 High
Yield (bu. per acre)	149.1	150.7	153.9	164.7	152.8	152.0	162.0	168.0	153.0	164.2	170.0
Long-term Historical Yield Probability:						18%	65%	17%	18%	65%	17%
Supplies:											
Planted acres (million)	78.3	93.5	86.0	86.4	88.2	91.5	91.5	92.0	91.5	91.5	92.0
Harvested acres (million)	70.6	86.5	78.6	79.5	81.4	83.9	84.5	85.0	83.9	84.5	85.0
Production (mil. bu.)	10,535	13,038	12,092	13,092	12,447	12,753	13,689	14,280	12,837	13,875	14,450
Beginning carryover (mil. bu.)	1,967	1,304	1,624	1,673	1,708	715	715	715	835	835	835
Total Supply (incl. imports)	12,514	14,362	13,729	14,774	14,165	13,485	14,415	15,005	13,690	14,720	15,295
Total Usage: (mil. bu.)											
Feed & residual	5,598	5,913	5,246	5,140	5,125	4,500	5,050	5,125	4,500	5,100	5,175
Ethanol	2,117	3,049	3,677	4,568	4,925	4,925	5,025	5,035	5,050	5,100	5,150
Food, ind. & seed	1,371	1,338	1,276	1,371	1,375	1,375	1,380	1,380	1,380	1,385	1,385
Exports	2,125	2,437	1,858	1,987	2,025	2,025	2,125	2,150	1,900	1,950	2,000
Total Usage	11,210	12,737	12,056	13,066	13,450	12,825	13,580	13,690	12,830	13,535	13,710
Ending Carryover: (mil. bu.)	1,304	1,624	1,673	1,708	715	660	835	1,315	860	1,185	1,585
Carryover, weeks of total use	6.0	6.6	7.2	6.8	2.8	2.7	3.2	5.0	3.5	4.6	6.0
Prices:											
U.S. weighted avg. farm price	$3.04	$4.20	$4.06	$3.55							
Iowa weighted avg. farm price	$2.99	$4.15	$4.01	$3.50							
Counter-cyclical pmt.	$0.00	$0.00	$0.00	$0.00							
Harvest price (central Iowa)	$2.80	$3.30	$3.50	$3.60							
Dec. futures price (harvest avg.)	$3.15	$3.80	$3.85	$3.95							
Wheat/Corn Price Ratio	1.40	1.54	1.67	1.37							
Soybean/corn price ratio	2.12	2.40	2.46	2.70							
Wheat Price	4.26	6.48	6.78	4.85							

Assignment:

Insert your forecasts of 2010-11 U.S. weighted avg. farm prices for corn.

U.S. supply chg. vs 2009-10	_____
Plus S. American crop chg.	-173
Plus demand change	_____
Effective S equiv. chg.	_____
Effective S equiv. chg. % of 2009-10 total supply	_____
Forecast Price: above % chg. (Times 5)(times 2009-10 price):	_____

R. Wisner				Updated:1/12/2011								
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U.S. supply chg. vs 2009-10	-609
Plus S. American crop chg.	-173
Plus demand change	-339
Effective S equiv. chg.	-1121
Effective S equiv. chg. % of 2009-10 total supply	-0.076
Forecast Price: above % chg. (Times 5)(times 2009-10 price):	$4.90

1/5/10

Forecasting with corn price flexibility (Price Elasticity -.2)

- 2010-11 corn supply - 609 mil. bu.
- Adjustment for demand growth
  - Feed & residual use -15 mil. bu.
  - Processing +357 mil. bu.
  - Exports +38
- Adjusted supply chg. -1121 mil. Bu. or -7.6%
- Forecast:7.6% x 5 = +38% price impact
- **Price forecast: $3.55 x 1.38 = $4.90 U.S. avg./bu.** ('10-11 mkt. yr.)
- *My forecast in balance sheet is adjusted up for 2011 acreage battle: corn, wheat, cotton & soybeans*

R. Wisner					Updated:2/8/2011						
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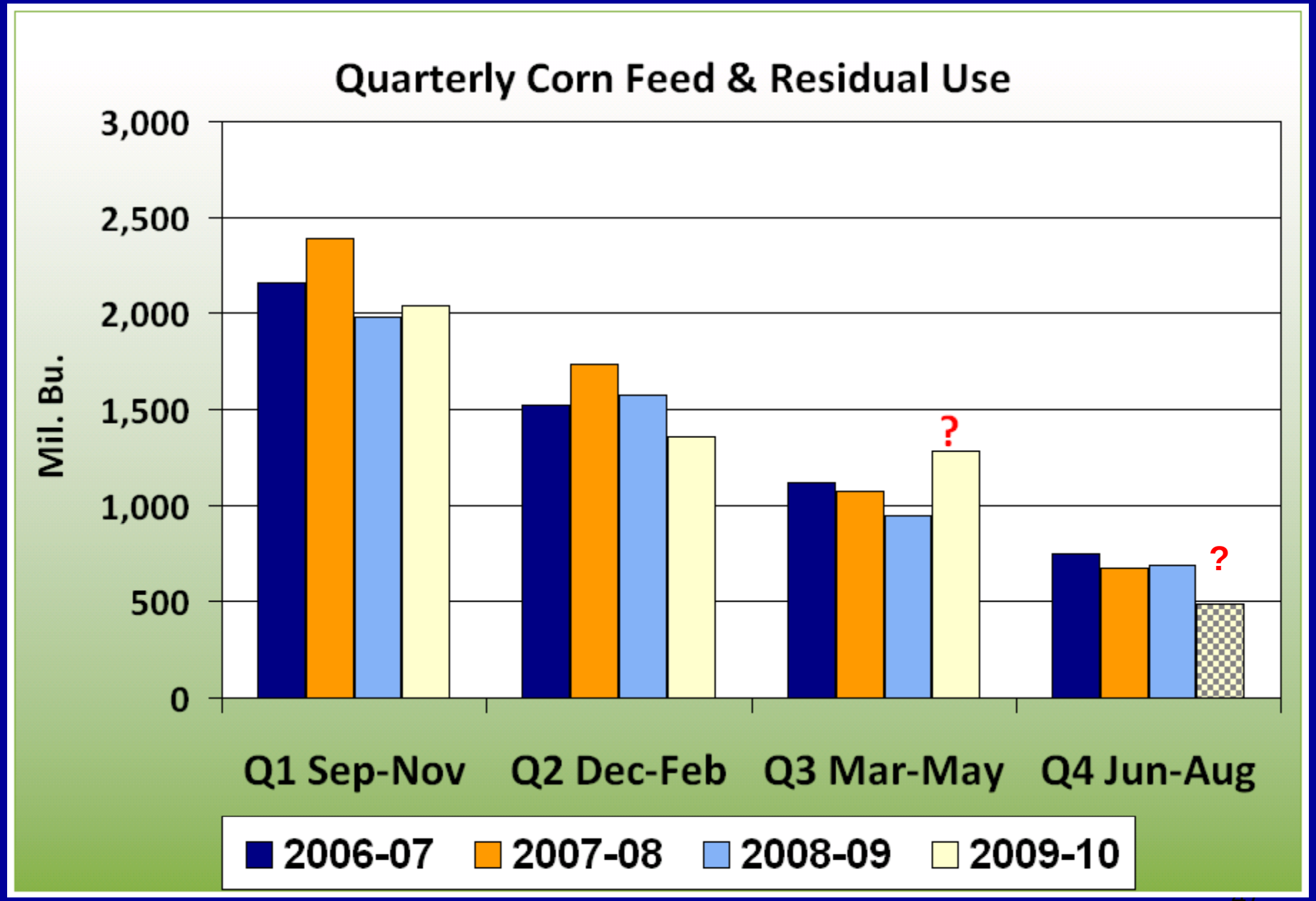
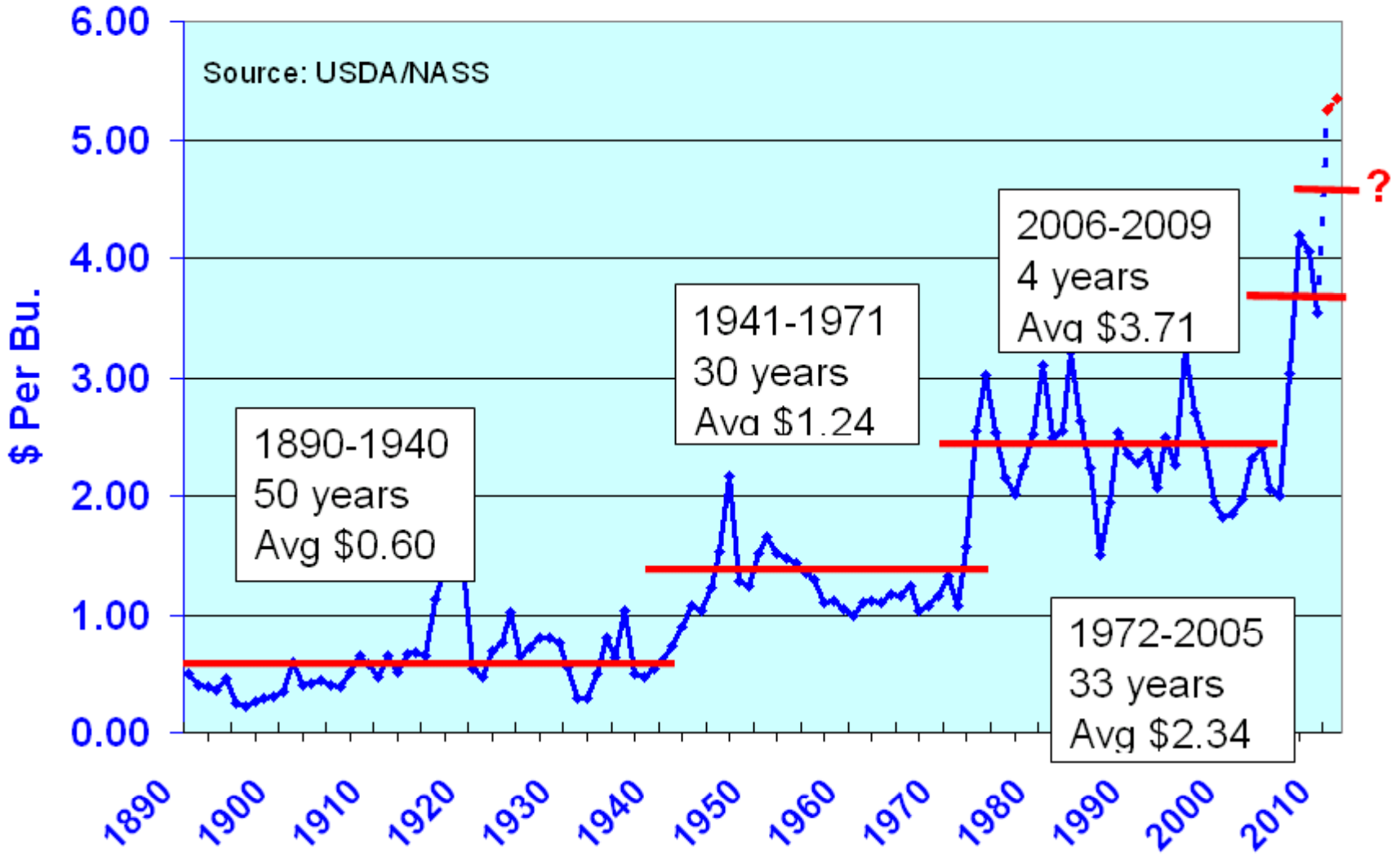
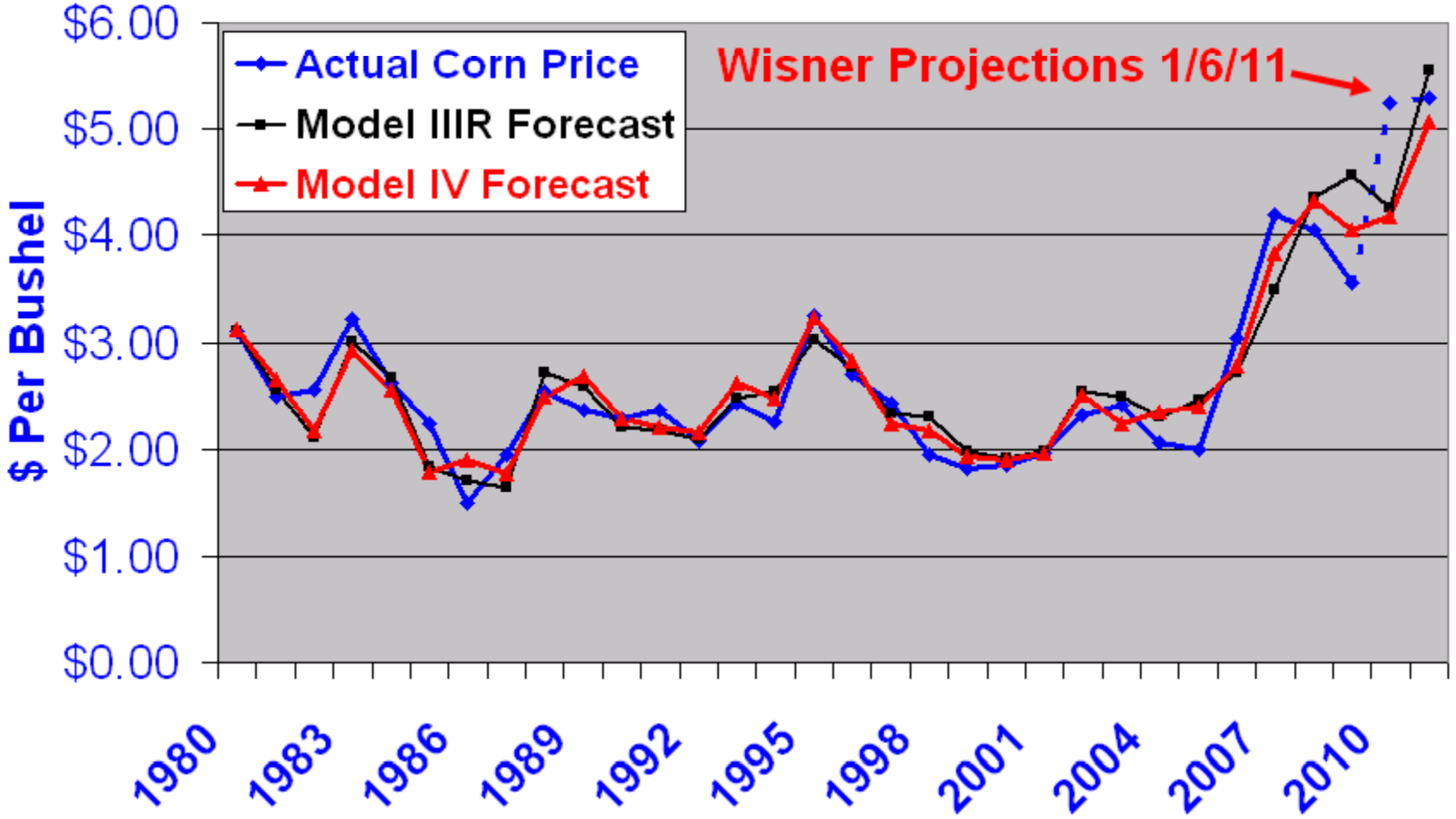
	2006-07	2007-08	2008-09	2009-10	2010-2011	Low	Med.5/	High	Low	Med.5/	High
Yield (bu. per acre)	149.1	150.7	153.9	164.7	152.8	152.0	162.0	168.0	153.0	164.2	170.0
Long-term Historical Yield Probability:						18%	65%	17%	18%	65%	17%
Supplies:											
Planted acres (million)	78.3	93.5	86.0	86.4	88.2	91.5	91.5	92.0	91.5	91.5	92.0
Harvested acres (million)	70.6	86.5	78.6	79.5	81.4	83.9	84.5	85.0	83.9	84.5	85.0
Production (mil. bu.)	10,535	13,038	12,092	13,092	12,447	12,753	13,689	14,280	12,837	13,875	14,450
Beginning carryover (mil. bu.)	1,967	1,304	1,624	1,673	1,708	740	740	740	835	835	835
Total Supply (incl. imports)	12,514	14,362	13,729	14,774	14,165	13,510	14,440	15,030	13,690	14,720	15,295
Total Usage: (mil. bu.)											
Feed & residual	5,598	5,913	5,182	5,140	5,125	4,460	5,050	5,125	4,500	5,100	5,175
Ethanol	2,117	3,049	3,709	4,568	4,925	4,925	5,050	5,075	5,050	5,100	5,150
Food, ind. & seed	1,371	1,338	1,316	1,371	1,375	1,375	1,380	1,380	1,380	1,385	1,385
Exports	2,125	2,437	1,849	1,987	2,000	2,025	2,125	2,150	1,900	1,950	2,000
Total Usage	11,210	12,737	12,056	13,066	13,425	12,785	13,605	13,730	12,830	13,535	13,710
Ending Carryover: (mil. bu.)	1,304	1,624	1,673	1,708	740	725	835	1,300	860	1,185	1,585
Carryover, weeks of total use	6.0	6.6	7.2	6.8	2.9	2.9	3.2	4.9	3.5	4.6	6.0
Prices:											
U.S. weighted avg. farm price	$3.04	$4.20	$4.06	$3.55	$5.50	$6.50	$5.50	$5.10	$6.50	$5.60	$5.10
Iowa weighted avg. farm price	$2.99	$4.15	$4.01	$3.50	$5.45	$6.45	$5.45	$5.05	$6.45	$5.55	$5.05
Counter-cyclical pmt.	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Harvest price (central Iowa)	$2.80	$3.30	$3.50	$3.60	$4.75	$6.15	$5.10	$4.60	$6.10	$5.20	$4.60
Dec. futures price (harvest avg.)	$3.15	$3.80	$3.85	$3.95	$5.35	$6.75	$5.70	$5.25	$6.70	$5.80	$5.25
Wheat/Corn Price Ratio	1.40	1.54	1.67	1.37	1.18	1.12	1.13	1.13	1.12	1.11	1.13
Soybean/corn price ratio	2.12	2.40	2.46	2.70	2.18	2.31	2.45	2.25	2.27	2.46	2.25
Wheat Price	4.26	6.48	6.78	4.85	6.50	7.30	6.20	5.75	7.30	6.20	5.75


Quarterly Corn Feed & Residual Use
3,000
2,500
2,000
1,500
1,000
500
0
Mil. Bu.
?
?
Q1 Sep-Nov
Q2 Dec-Feb
Q3 Mar-May
Q4 Jun-Aug
2006-07
2007-08
2008-09
2009-10

Average Corn Price Received by U.S. Farmers



Actual and Forecast Corn Prices, RW Models, Based on 1980-81 to 2009-10 Data

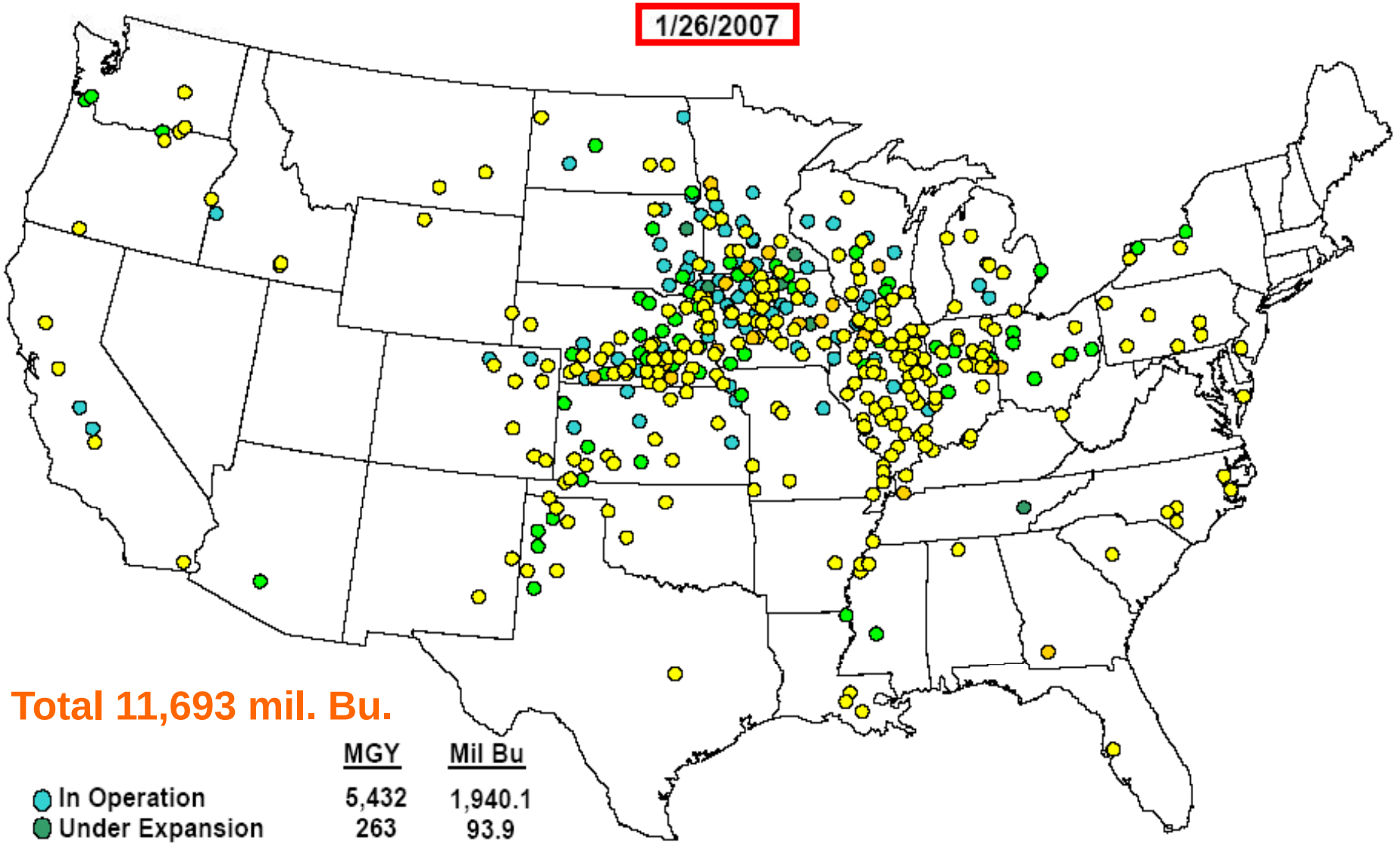


Key Forecasting Variables

- Exports/total supply
- Ethanol/total use
- Corn Price lagged one year
- 0/1 weather variable for drought/flood years
- Wheat price lagged one year (Model IIIR)
- Current wheat price (Model IV)
- R^2 Model IIIR = .9044: All Var. Significant @ <6% probability except lagged wheat price
- R^2 Model IV = .9244: All Var. Significant @ <6%. Least significant is lagged corn price (All others significant at <1%)

Figure 3. US Ethanol Plants

1/26/2007

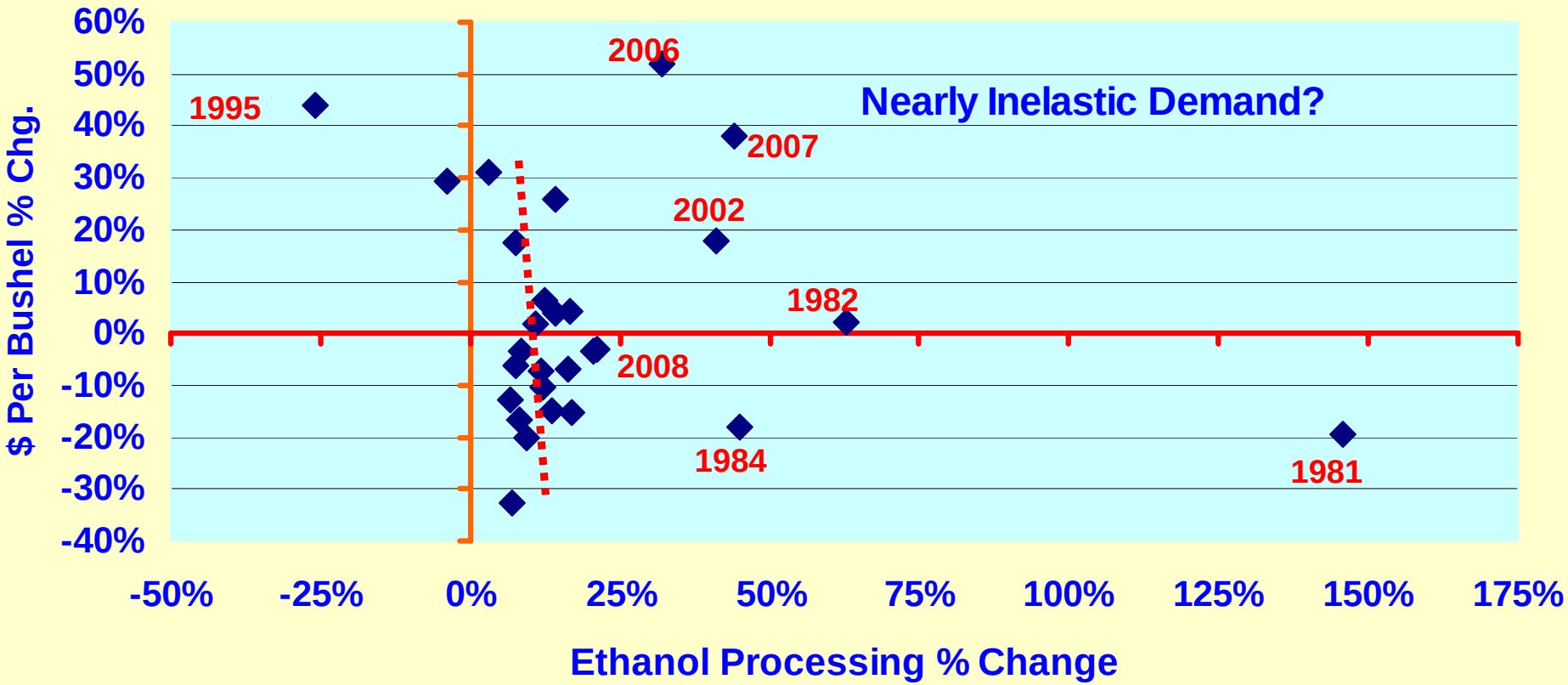


Total 11,693 mil. Bu.

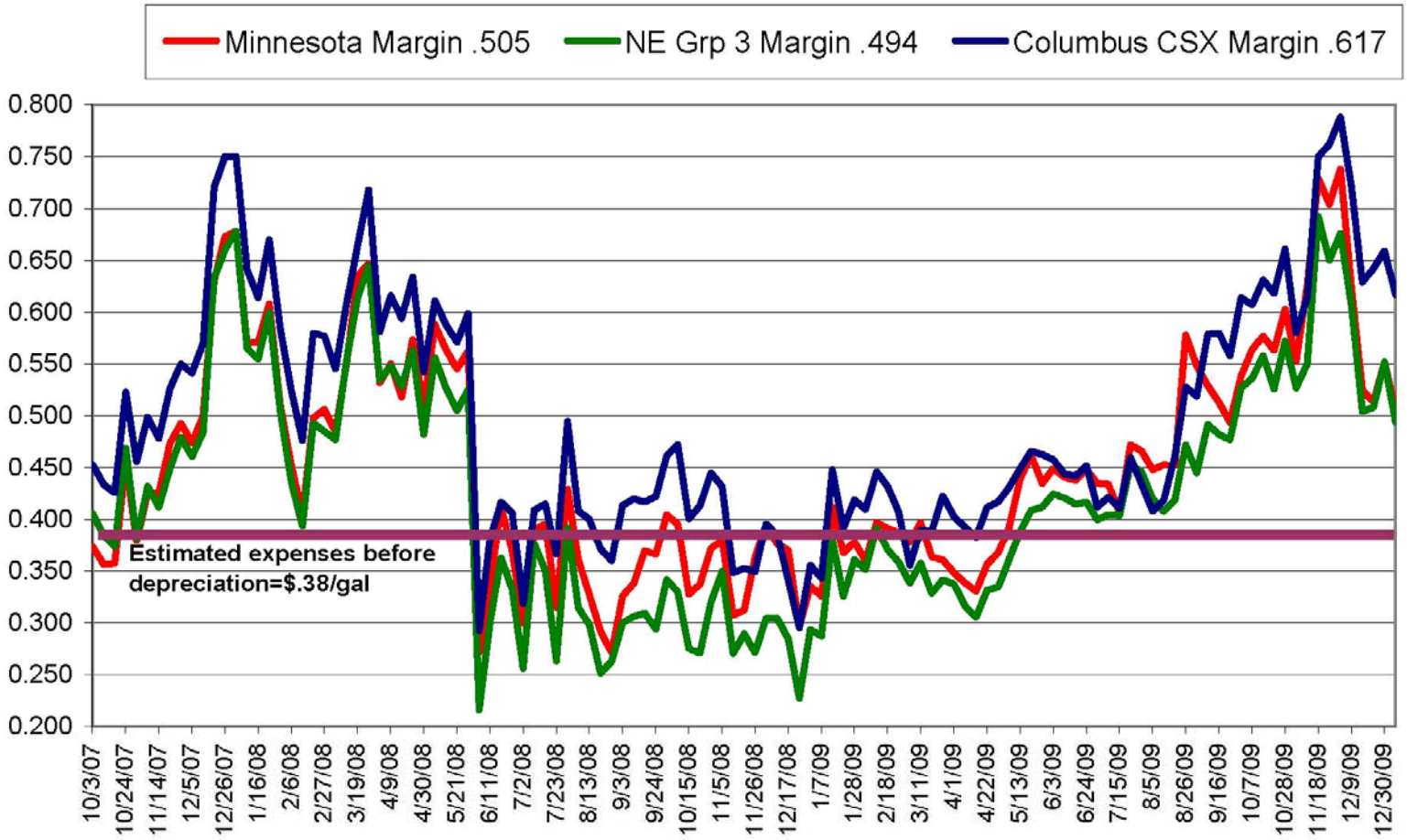
	MGY	Mil Bu
In Operation	5,432	1,940.1
Under Expansion	263	93.9
Under Construction	4,872	1,740.0
Ground Broken	2,463	879.6
Planned	19,710	7,039.3

Plants "Under Construction" have broken ground and have poured concrete. Plants that have "broken ground" have begun site work but no actual construction. Plants that are "planned" have been talked about or announced in the news.

Percent Change in U.S.Corn Price & Corn Processing for Ethanol, 1981-2008



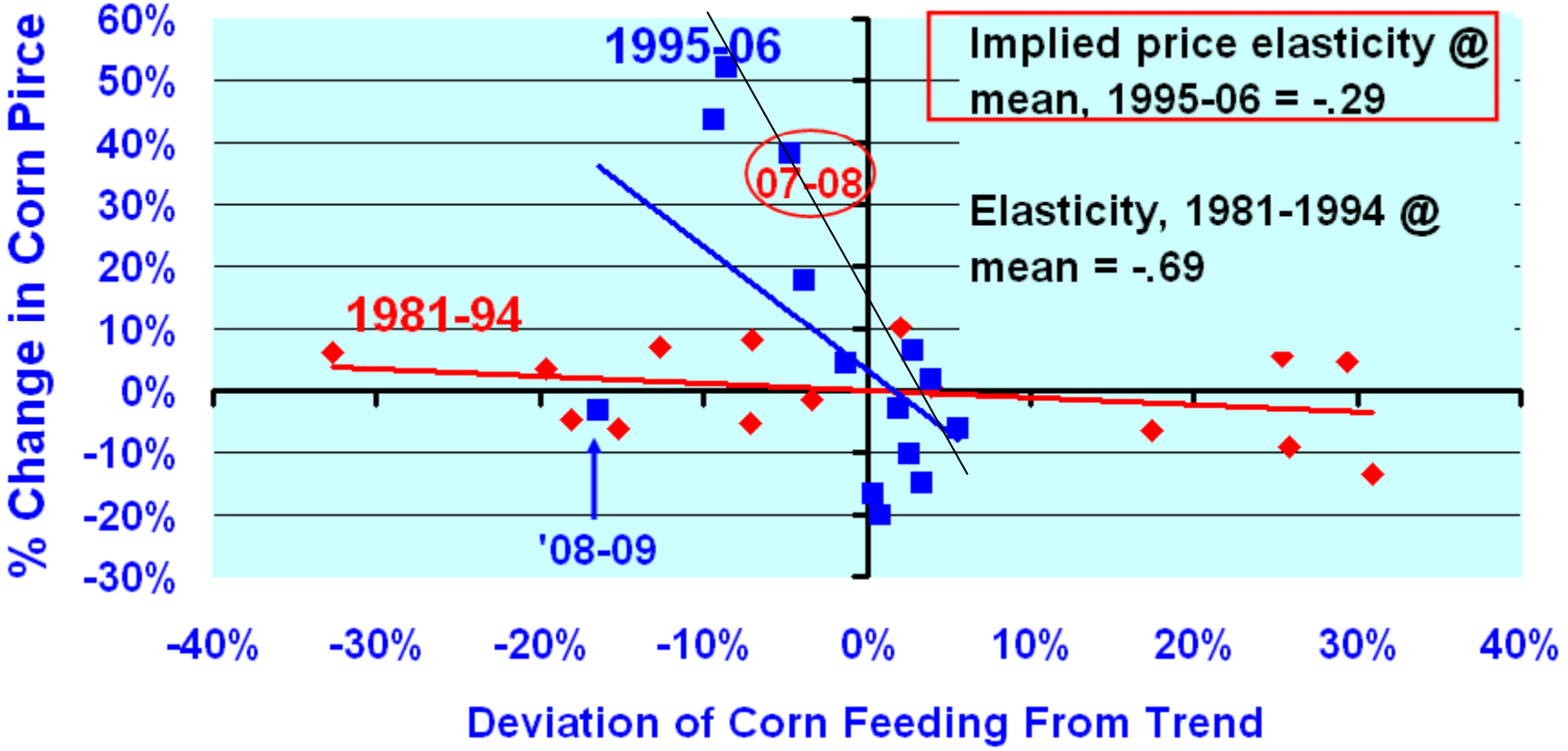
ETHANOL GROSS MARGIN*



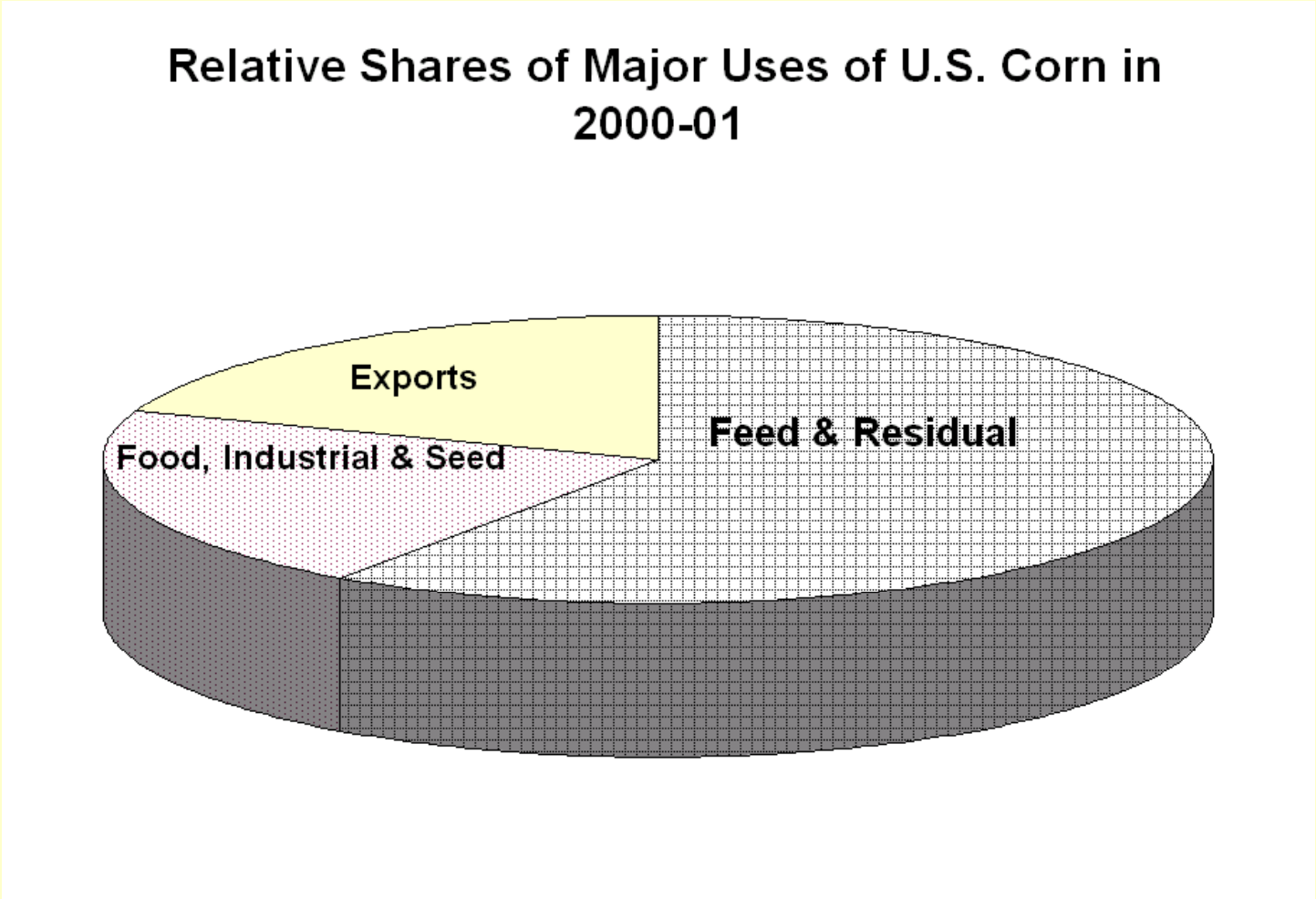
***Gross Margin**: **Inputs**: nearby corn futures/basis and nearby natural gas futures + 45 **Outputs:** DDGS (75% of cash corn) and ethanol nearby swaps with the western corn belt @ 12 under Chicago and eastern corn belt @ Chicago price.

Percent Change in U.S.Corn Price & % Deviation of Domestic Corn Feeding from Trend, 1981-2008

17% rise in price to
Get 5% cut in feeding



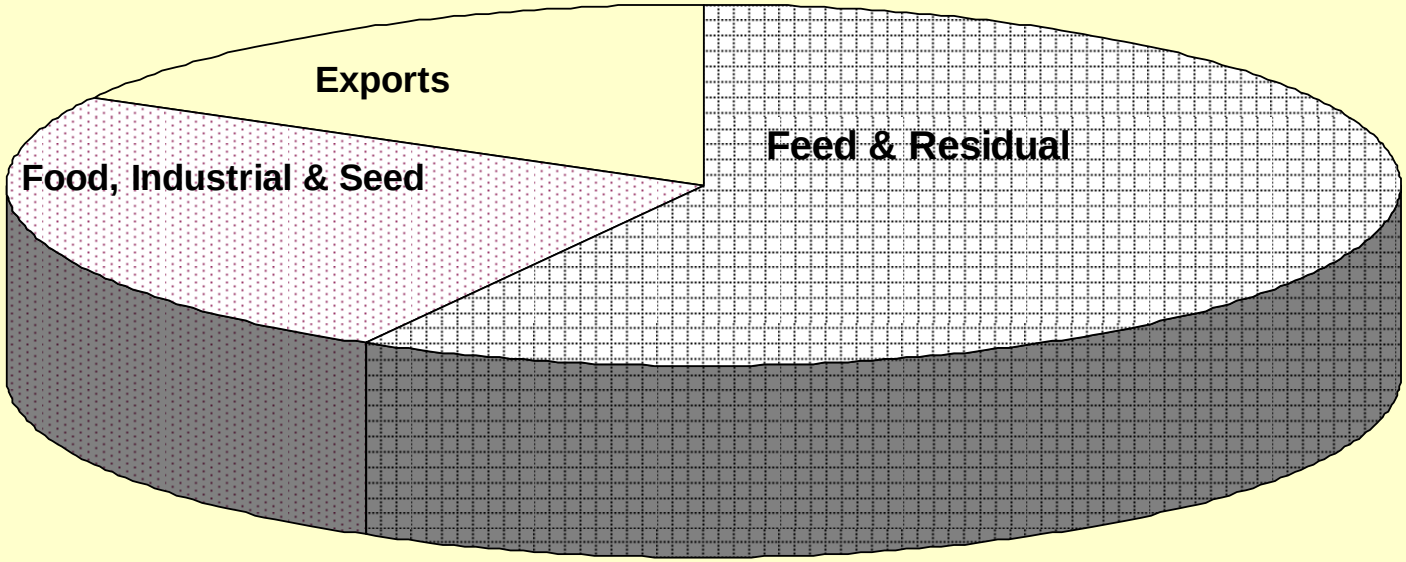
Changing corn market



Big swing factor in markets was export demand

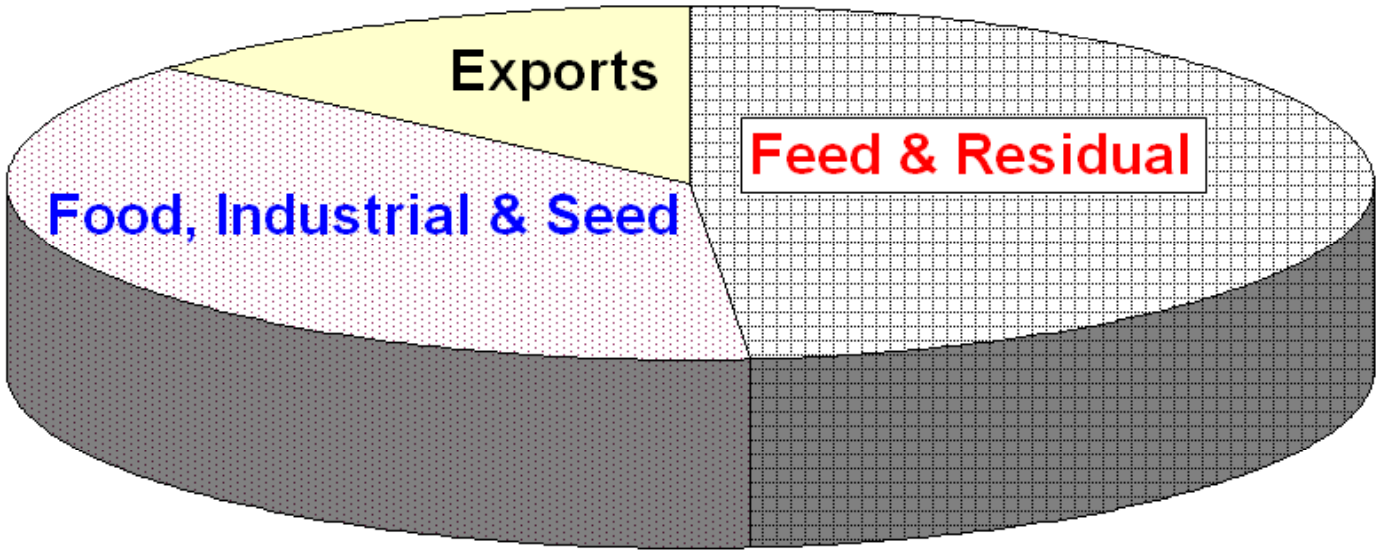
Changing corn market

Relative Shares of Major Uses of U.S. Corn in 2004-05



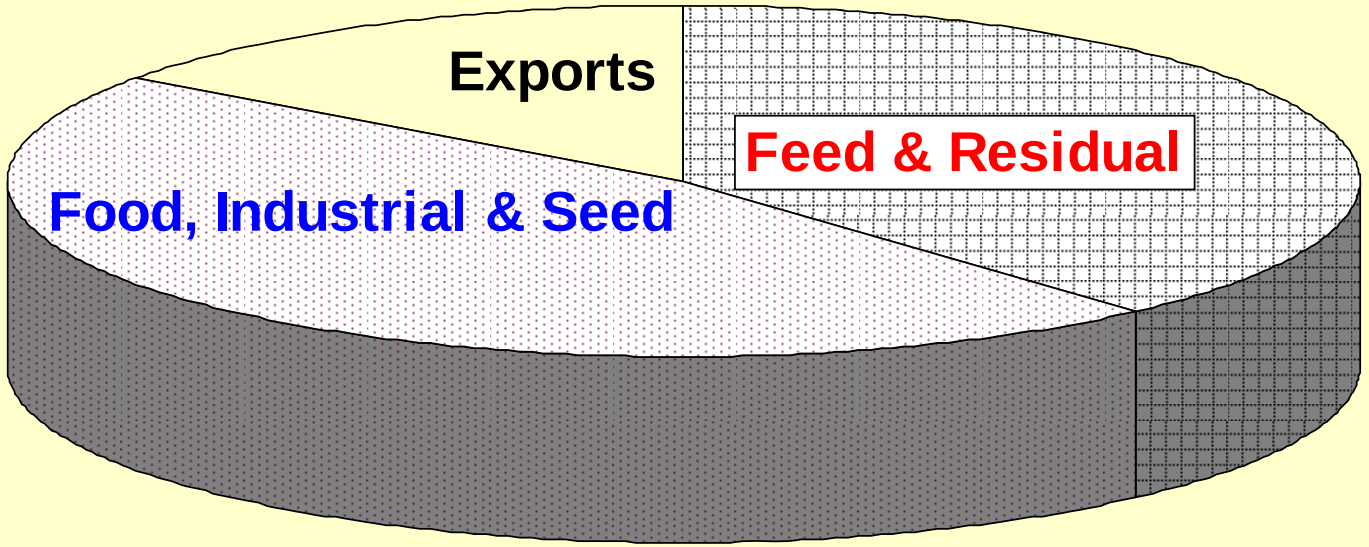
Changing corn market

Relative Shares of Major Uses of U.S. Corn in 2008-09



Changing corn market

Relative Shares of Major Uses of U.S. Corn, Projected 2010-11



What's ahead in next 5 years?

Cap & trade, GHG, animal agriculture, weather?

Corn Futures				
	1/19/11 Prices			
			$/Bu.	Carry
March 2011			6.44	
May			6.53	
July			6.58	0.14
Sept.			6.05	
Dec.			5.69	
March 2012			5.75	
May			5.92	
July			5.88	0.19
Sept.			5.49	
Dec.			5.26	

.14 cent carry to July 2010

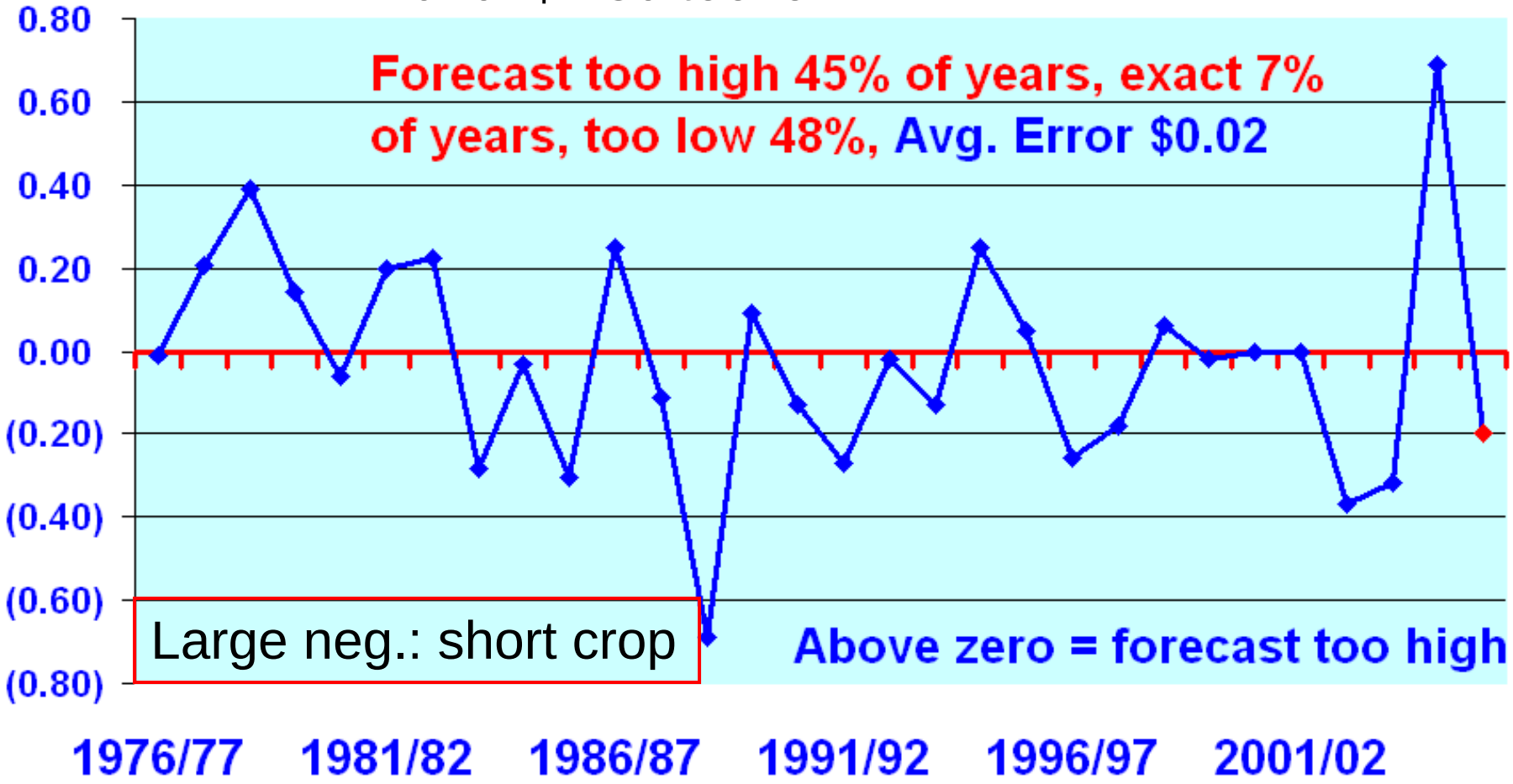
R.W. normal weather forecasts

5.70

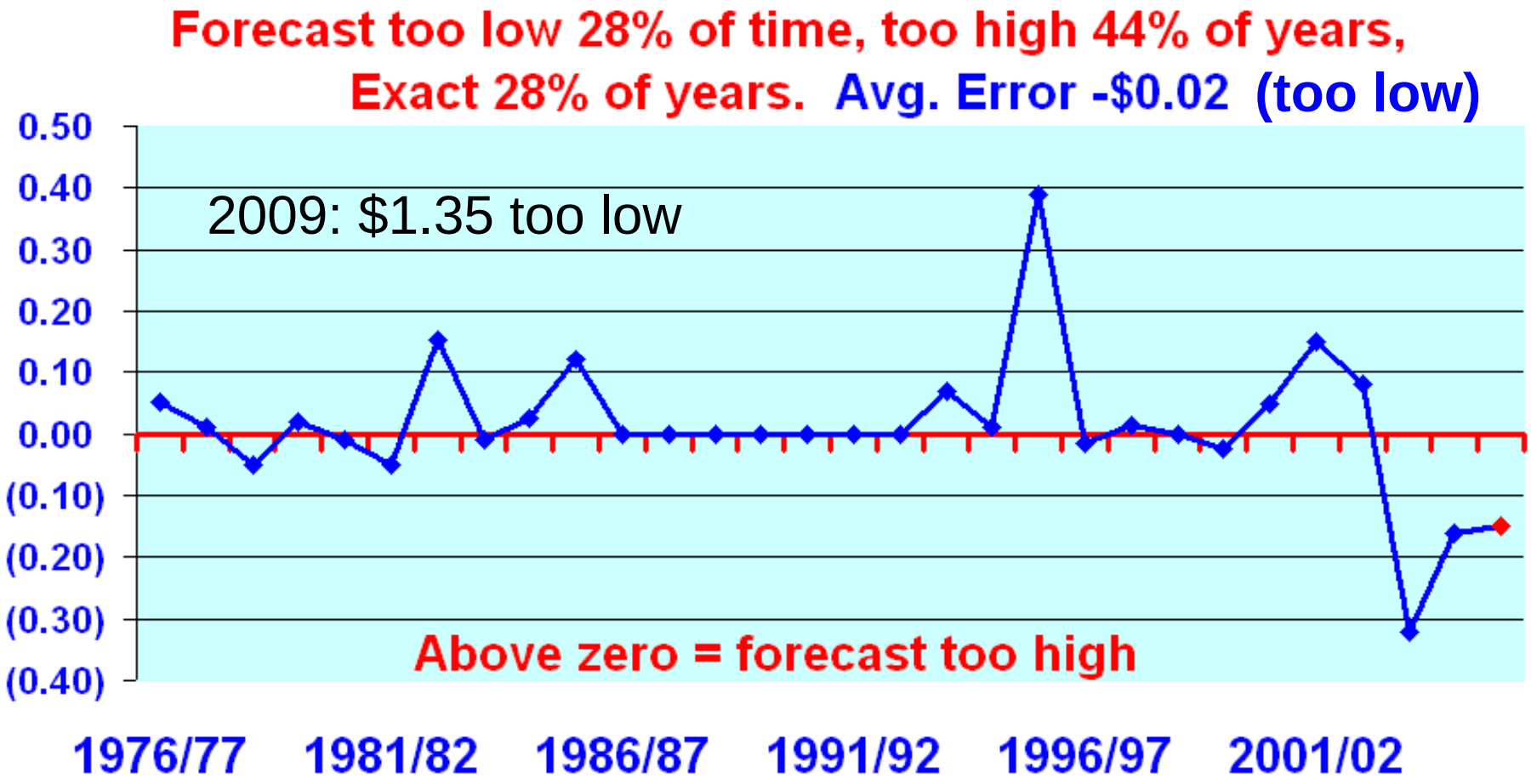
5.80

Error in USDA May Corn Forecasts for next season, Mid-Point of Prices

2010: $1.80 too low?



Error in USDA Nov. Corn Price Forecasts for next season, Mid-Point of Prices

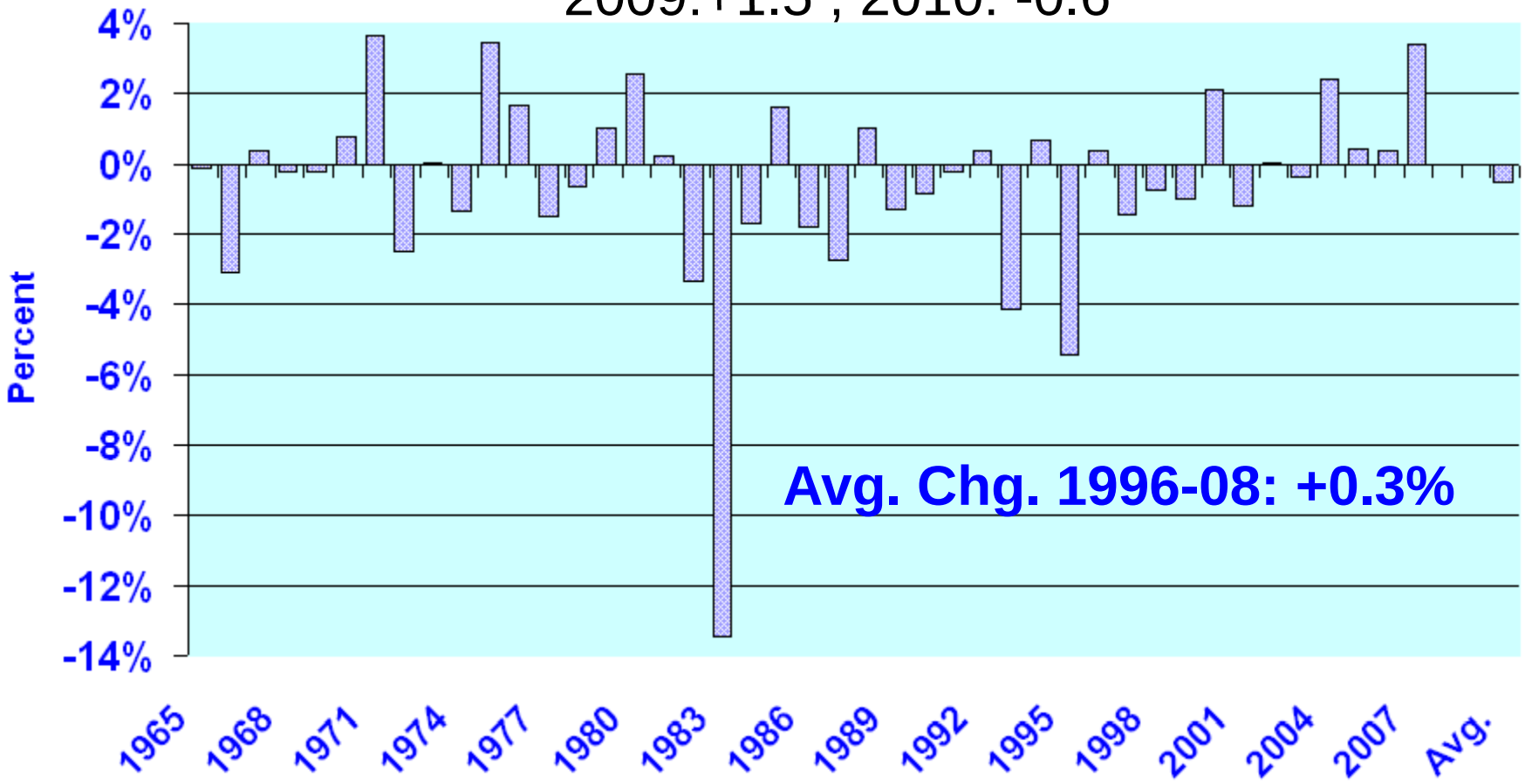


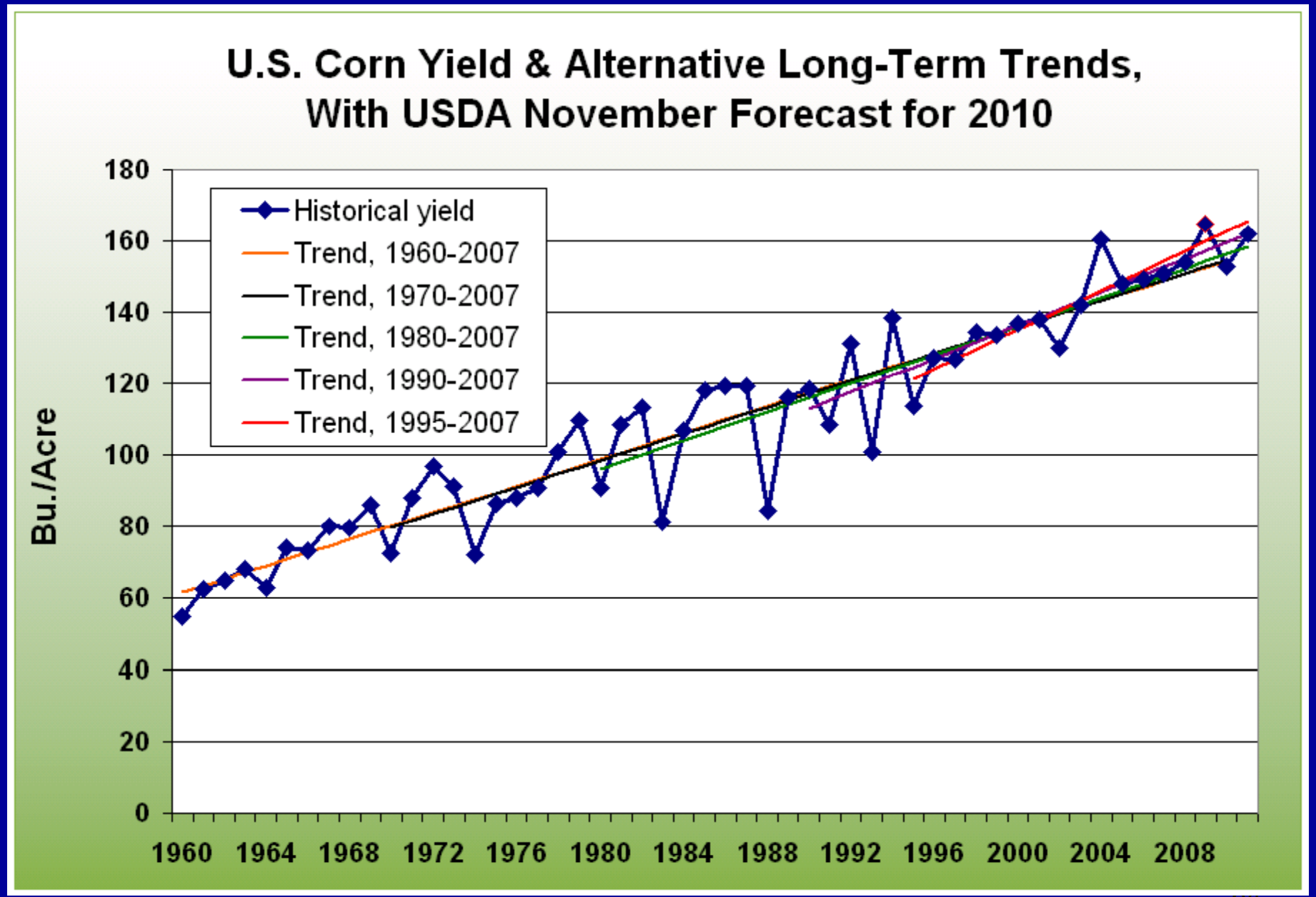
Forecasting the New Crop Size
Key information sources

- USDA late March planting intentions report
- Weekly crop progress & condition reports
- Weather forecasts, weekly, monthly & other
- Monthly USDA crop forecasts – wheat: May to Sept., corn, milo, SB Aug. – Nov.
- Private forecasting reports
- Trend yields

Percent Change in U.S. Corn Plantings from Intentions Survey to Next January, 1965-2008

2009:+1.5 , 2010: -0.6




U.S. Corn Yield & Alternative Long-Term Trends,
With USDA November Forecast for 2010
Bu./Acre
180
160
140
120
100
80
60
40
20
0
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
Historical yield
Trend, 1960-2007
Trend, 1970-2007
Trend, 1980-2007
Trend, 1990-2007
Trend, 1995-2007

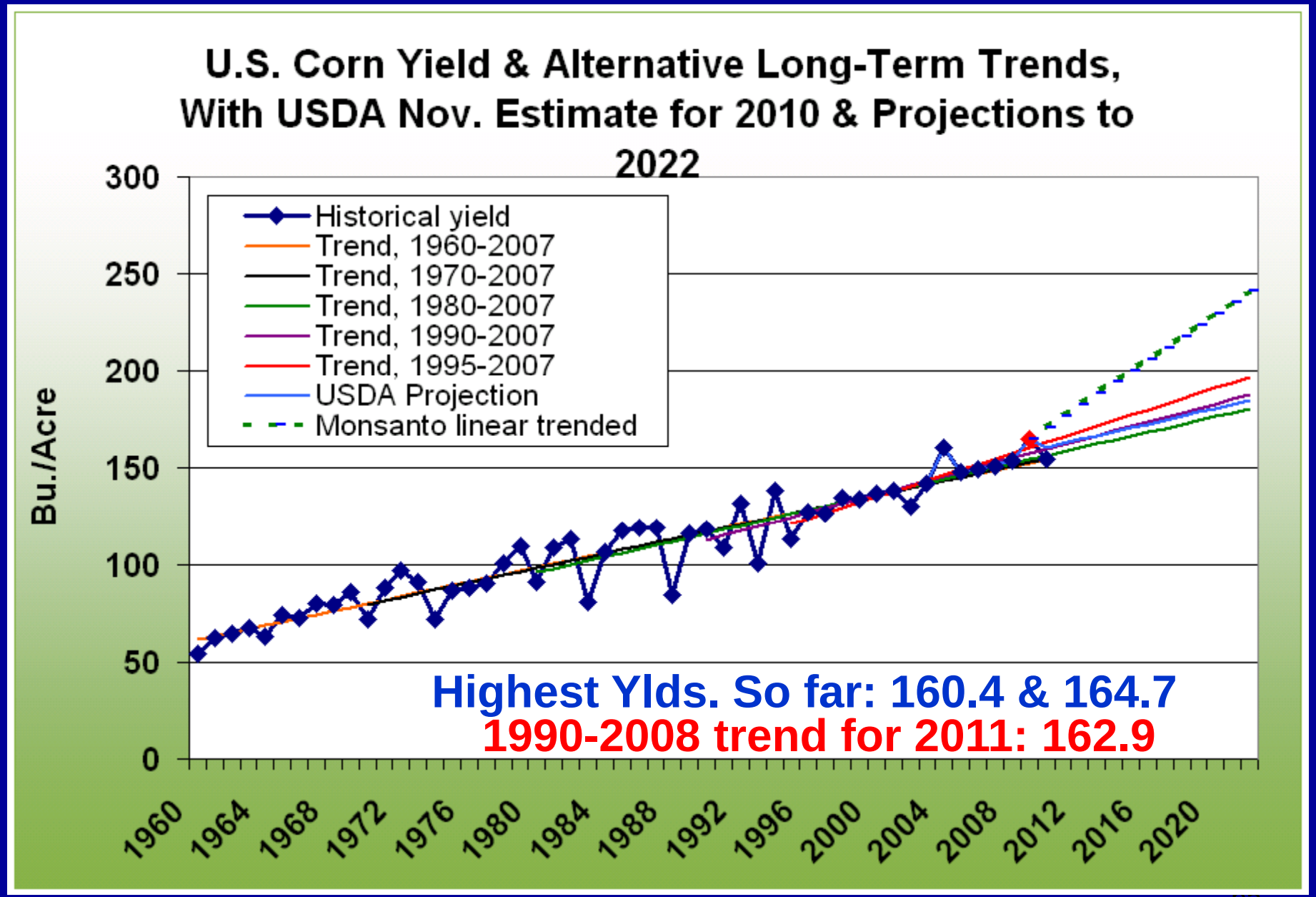
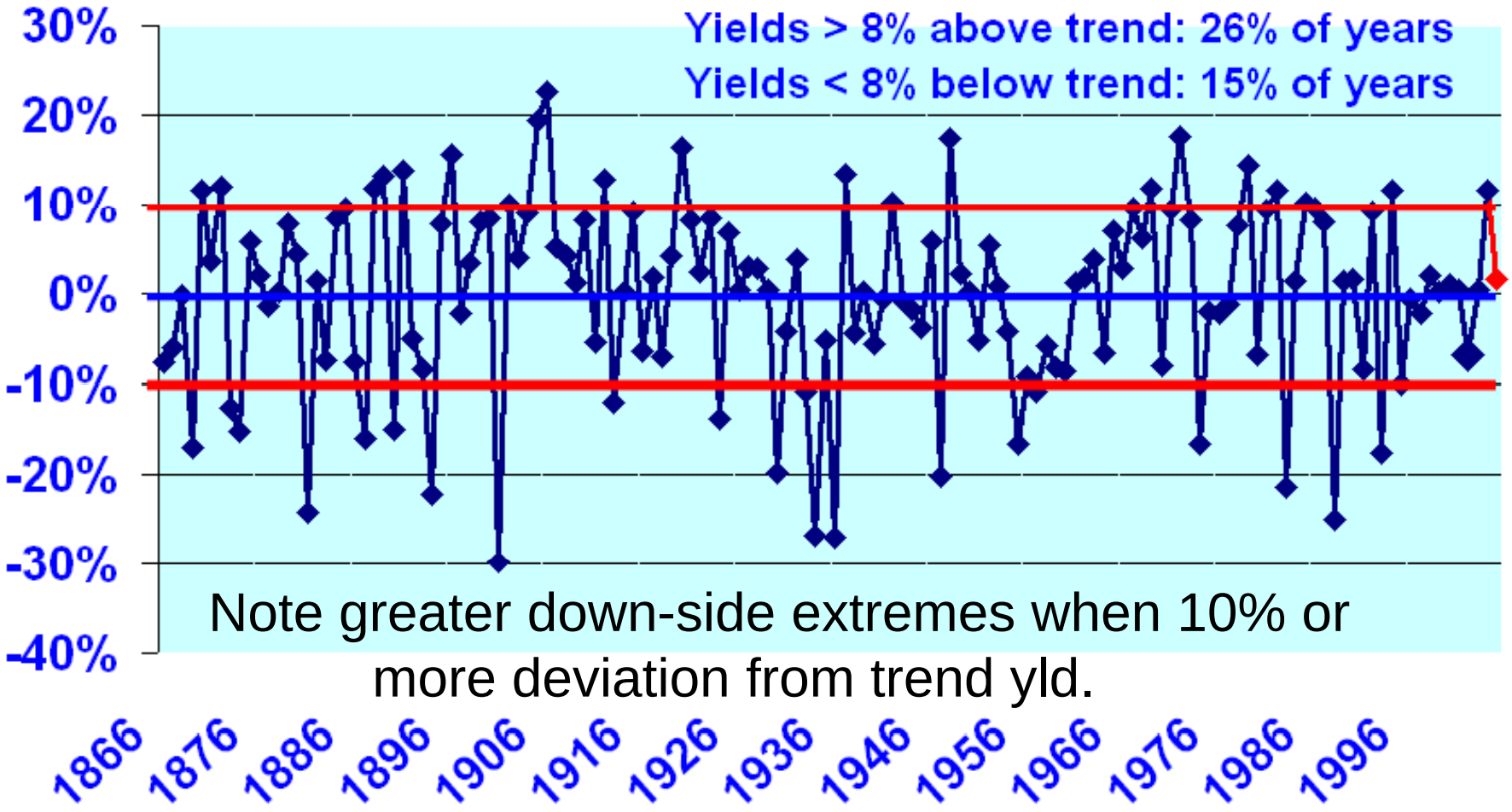
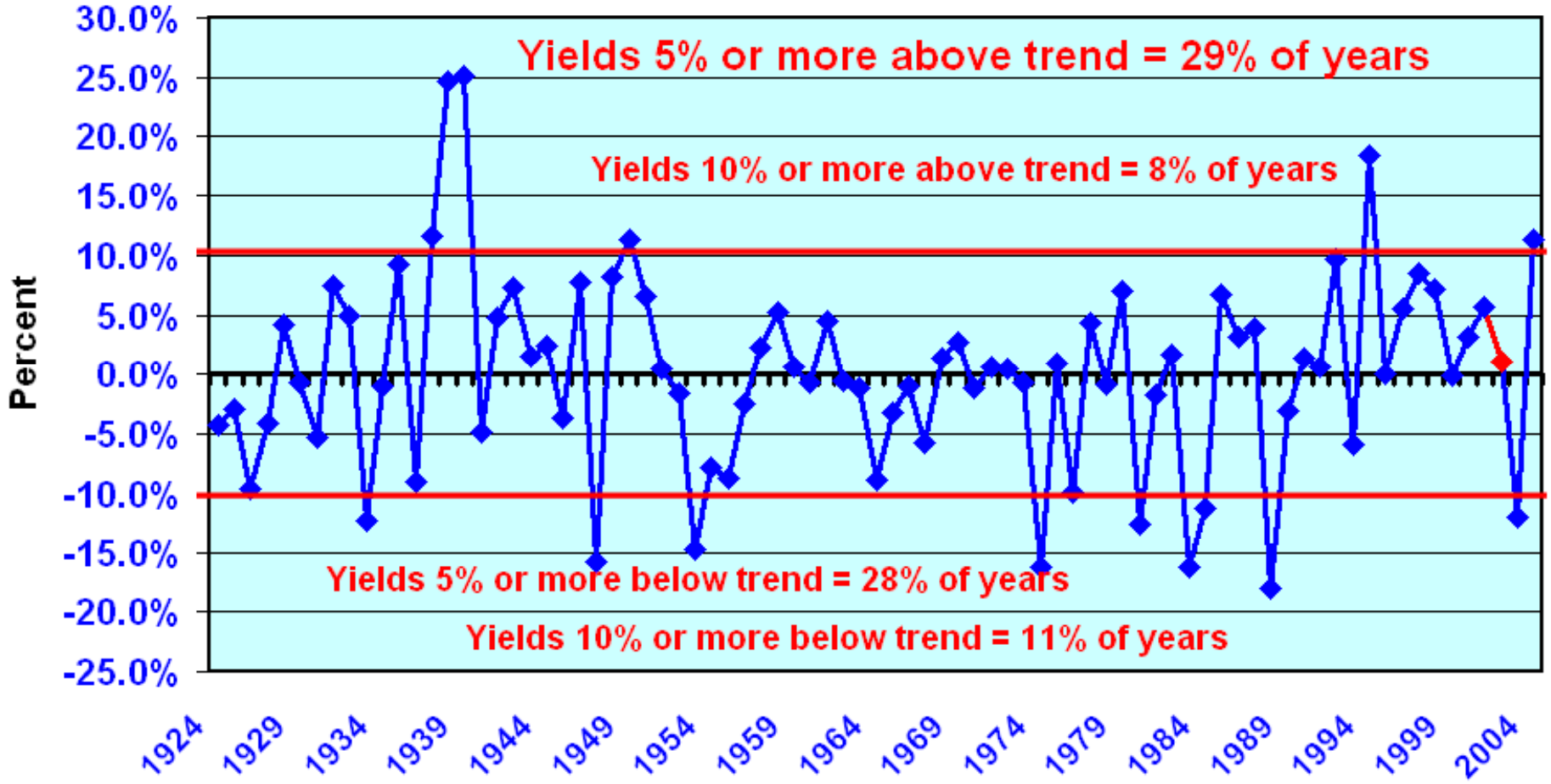

U.S. Corn Yield & Alternative Long-Term Trends, With USDA Nov. Estimate for 2010 & Projections to 2022
Bu./Acre
300
250
200
150
100
50
0
Historical yield
Trend, 1960-2007
Trend, 1970-2007
Trend, 1980-2007
Trend, 1990-2007
Trend, 1995-2007
USDA Projection
Monsanto linear trended
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
2012
2016
2020
Highest Ylds. So far: 160.4 & 164.7
1990-2008 trend for 2011: 162.9

Figure 6. U.S. Corn Yield, Percent Deviation From Trend, 1866-2005

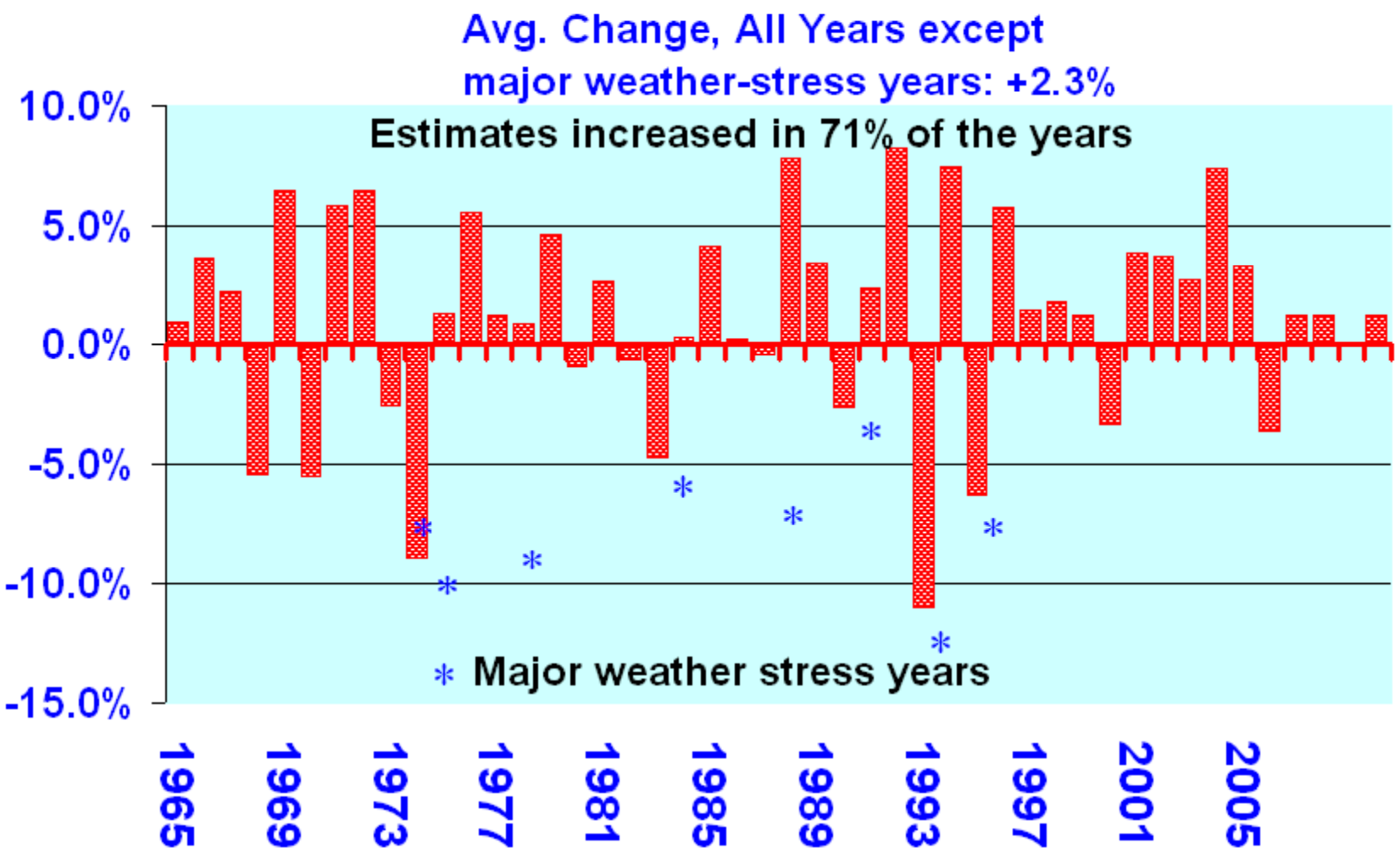


Note greater down-side extremes when 10% or more deviation from trend yld.

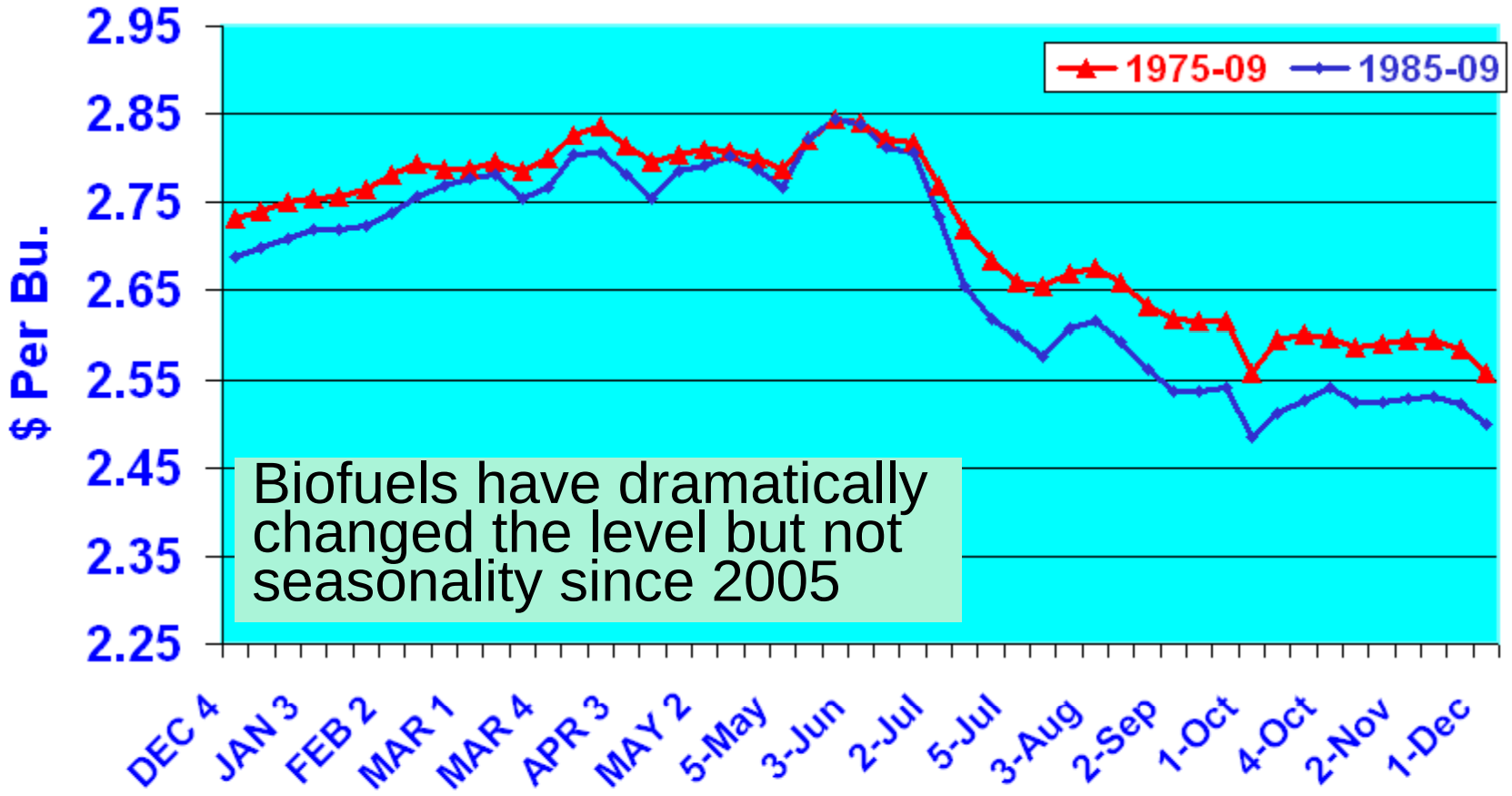
U.S. Soybean Yield, Deviation From Trend, 1924-2003



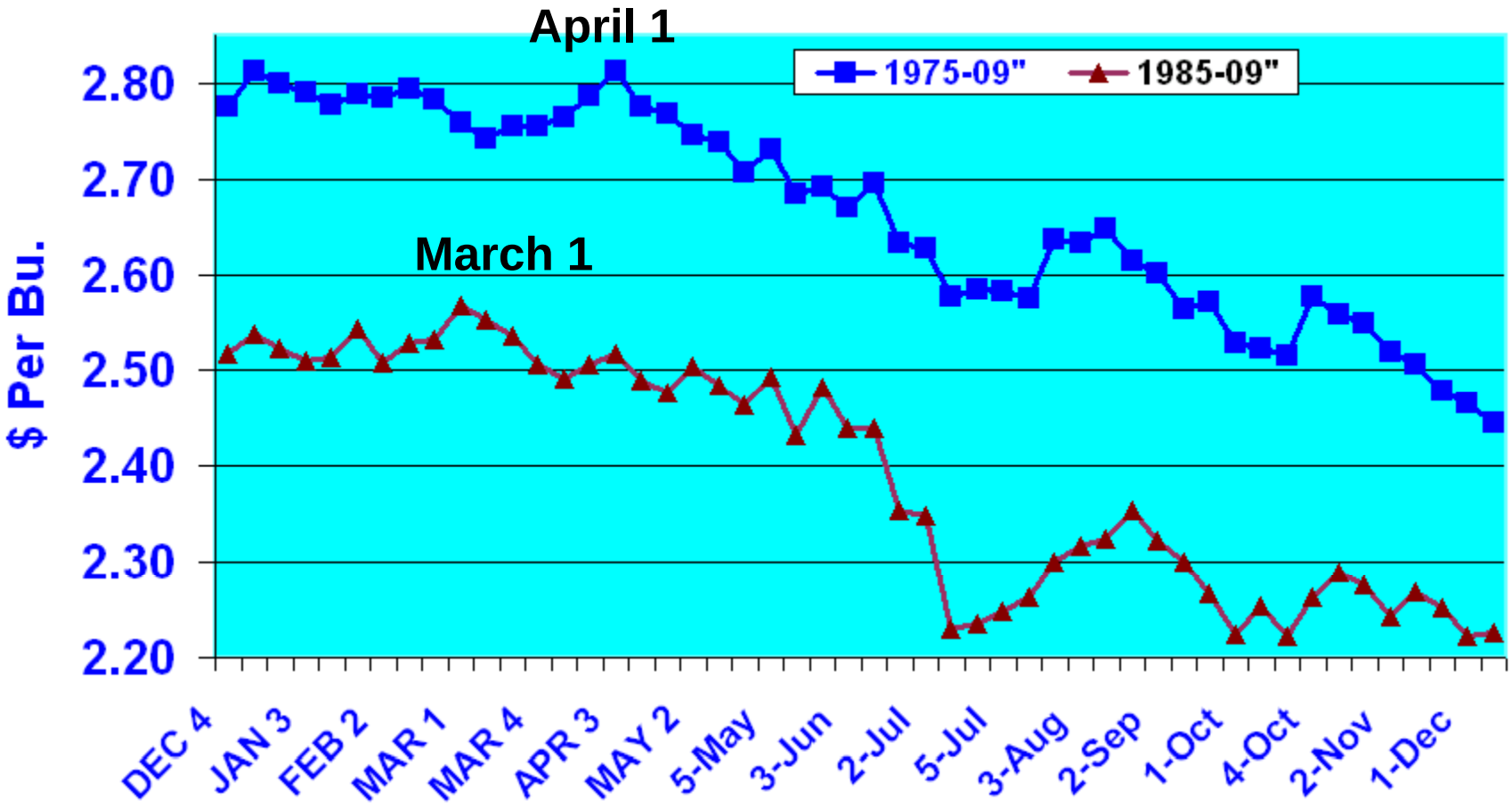
USDA Corn Yield Forecasts, Percent Change from September to Season Final Estimate



Weekly Average December Corn Futures, All Years, 1975 Through 2009 & 1985-2009--All Years



Weekly Average December Corn Futures, After Short Crops, 1975 Through 2009 & 1985-2009



RiskPremium in Dec. Corn futures
Mid-May vs. early Nov.

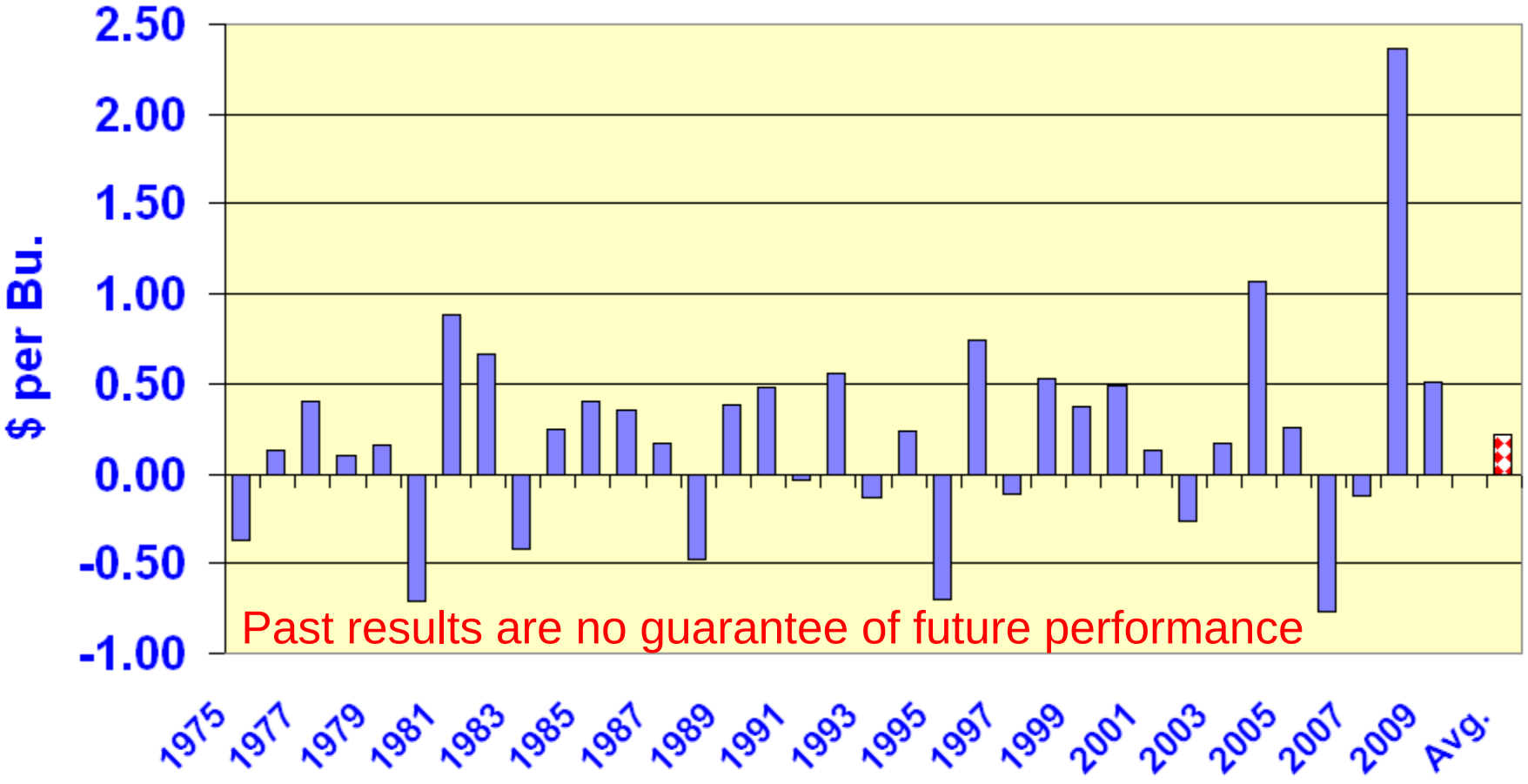
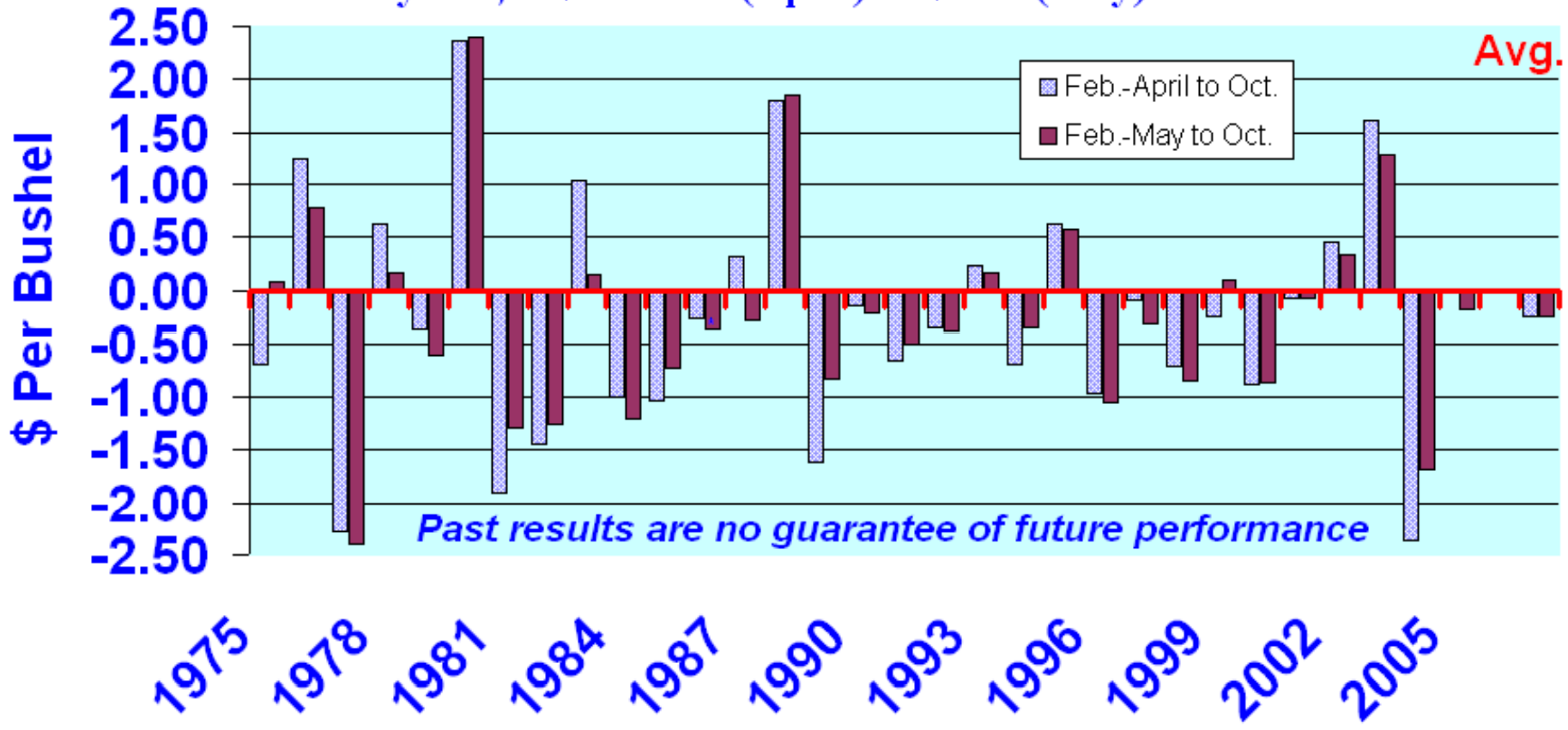


Figure 4. Change in Nov. Soy Futures, Mid-Feb. After Short U.S. Crops & Early April or Mid-May After Normal Crops vs. Mid-Oct., 1975-2005

Prices Rose 32% of Years, Declined 68%. Avg. Decline, all years, = $0.26/Bu. (April) & $0.25 (May)



Forecasting U.S. Corn Yields

- **Yield: The biggest uncertainty in the Supply-Demand equation**
- **Corn Yield: 5% below trend for 2011 would cut production 735 mil. Bu. below expected use**
- **10% above trend would put crop 1.32 bil. bu. Above expected use**
- ***Price implications: Very Large & w/low yld., Explosive for all grains***

Wisner Corn yield forecasting model, Key variables

- Weekly crop % good-to-excellent, major states
- Percent of the crop planted, major states—by 3rd week of May
- Weather variable: 0-1
- Time trend to reflect new technology
- Best results: late July & August

Key Web Sites

- http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1186 (weekly crop progress & condition)
- http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1288 (USDA ERS Situation Reports, World Ag Outlook supply-demand reports, NASS monthly crop forecasts & grain stocks reports
- http://www.nws.noaa.gov/ National Weather Service weather reports, current, 6-10 days up to monthly and season outlook
- http://www.cpc.ncep.noaa.gov/products/expert_assessment/drought_assessment.shtml NWS drought assessment
- http://www.cpc.ncep.noaa.gov/products/predictions/index.html NWS extended forecasts
- http://www.pecad.fas.usda.gov/cropexplorer/ International weather & crop conditions USDA Crop Explorer
- http://www.pecad.fas.usda.gov/cropexplorer/ USDA World crop explorer – satellite imagery by country
- http://www.econ.iastate.edu/faculty/wisner/grainbidlinks.docFutures Prices & cash prices at various locations
- http://ffas.usda.gov/export-sales/ USDA Weekly Export Sales Report

Example information
Iowa Crop Progress as of July 5, 2009

	Districts									State	Last Week	Last Year	Normal
	NW	NC	NE	WC	C	EC	SW	SC	SE				
Corn, tallest height, "	65	59	65	74	70	72	69	65	68	**67**	51	**49**	**65**
Corn, avg. height, "	54	44	48	58	54	54	53	44	50	**52**	37	**34**	**51**
Corn stand, % of Norm.	99	98	96	98	94	95	89	88	90	95	95	86	93
Soybeans % blooming	29	17	48	21	22	20	18	10	16	**23**	4	13	**28**

Iowa Crop Progress as of July 5, 2009

Illinois has similar information

	Corn Crop Condition		
	7/5/2009	Chg. Vs.	Chg. Vs.
	%G-E	Prev. Wk.	7/04/04
	2004 yield: + 11% vs, trend		
CO	75	-3	-19
IL	57	-1	-26
IN	64	2	-10
IA	82	1	7
KS	68	1	1
KY	74	3	0
MI	67	-4	27
MN	82	0	22
MO	54	0	-25
NE	84	2	4
NC	41	-35	-40
ND	76	-2	18
OH	77	-4	14
PA	81	5	-1
SD	62	-9	-18
TN	53	-4	-30
TX	40	5	-44
WI	78	-3	19
18 Sts	71	-1	-2
Wk ago	72	2	1
Yr ago vs. '03	62	1	-11
% Silked	8	3	-11

Frost Concerns in 2009

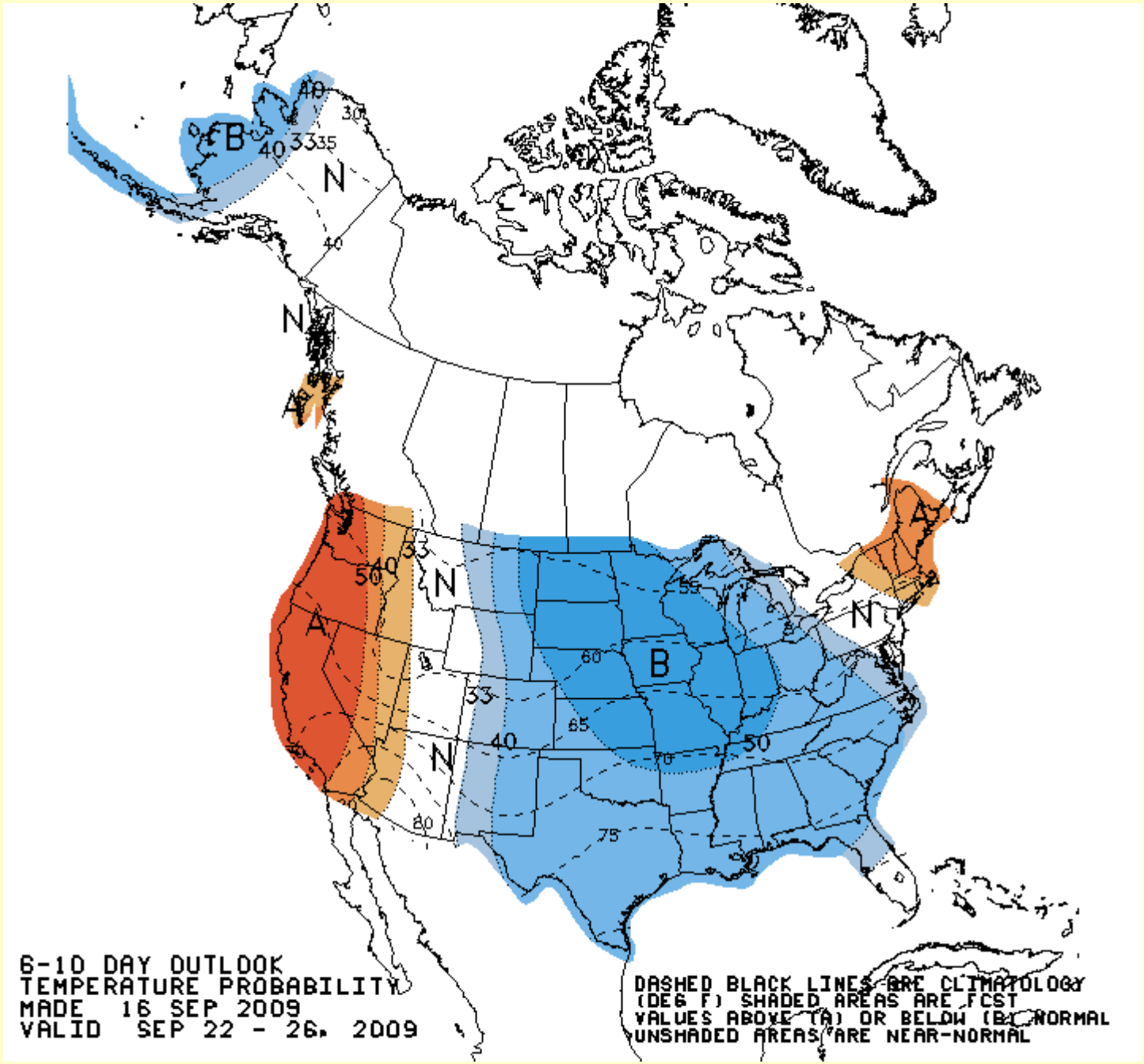
Iowa Crop Progress as

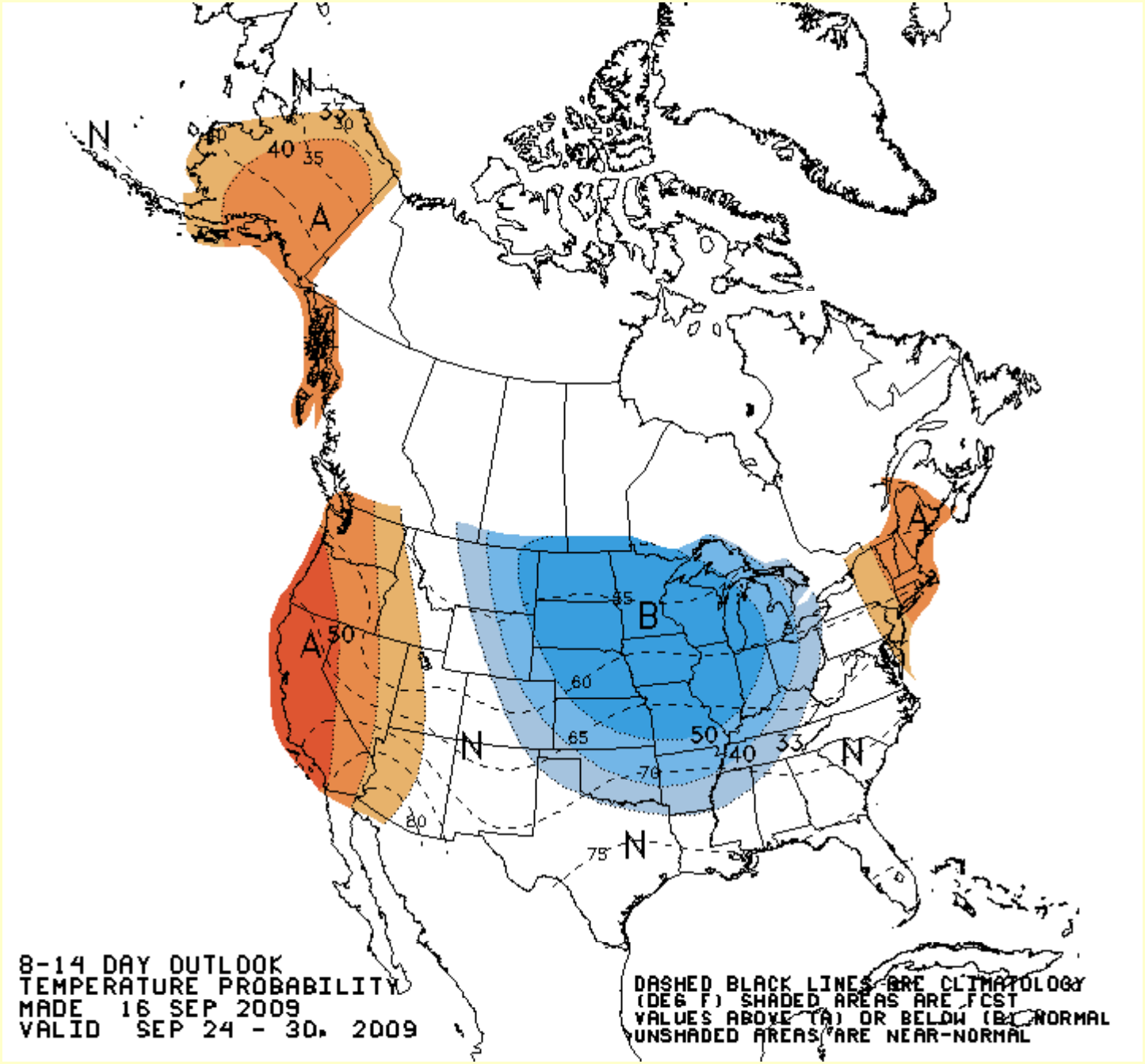
State	Corn Percent Dented		
	9/13/ 2009	9/13/ 2008	5-Year Avg.
CO	58	77	67
IL	56	75	92
IN	60	75	87
IA	76	68	86
KS	86	93	95
KY	92	92	96
MI	41	77	75
MN	56	78	82
MO	85	80	94
NE	85	83	89
NC	100	99	99
ND	23	52	70
OH	66	80	86
PA	56	69	78
SD	57	78	83
TN	97	100	100
TX	95	94	97
WI	40	46	63
18 Sts.	66	76	86
Prev Wk.	50		

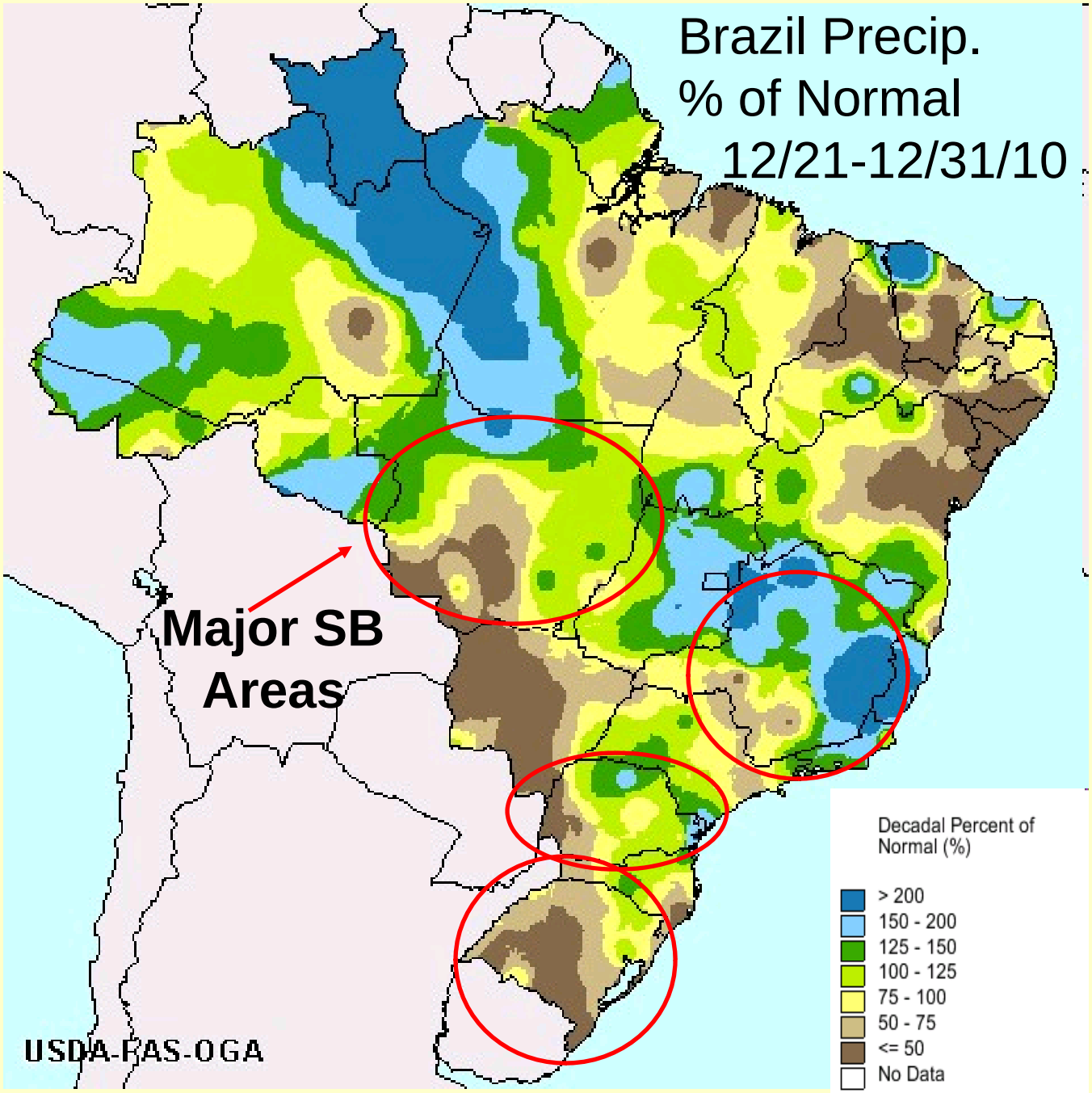
Frost Impact?

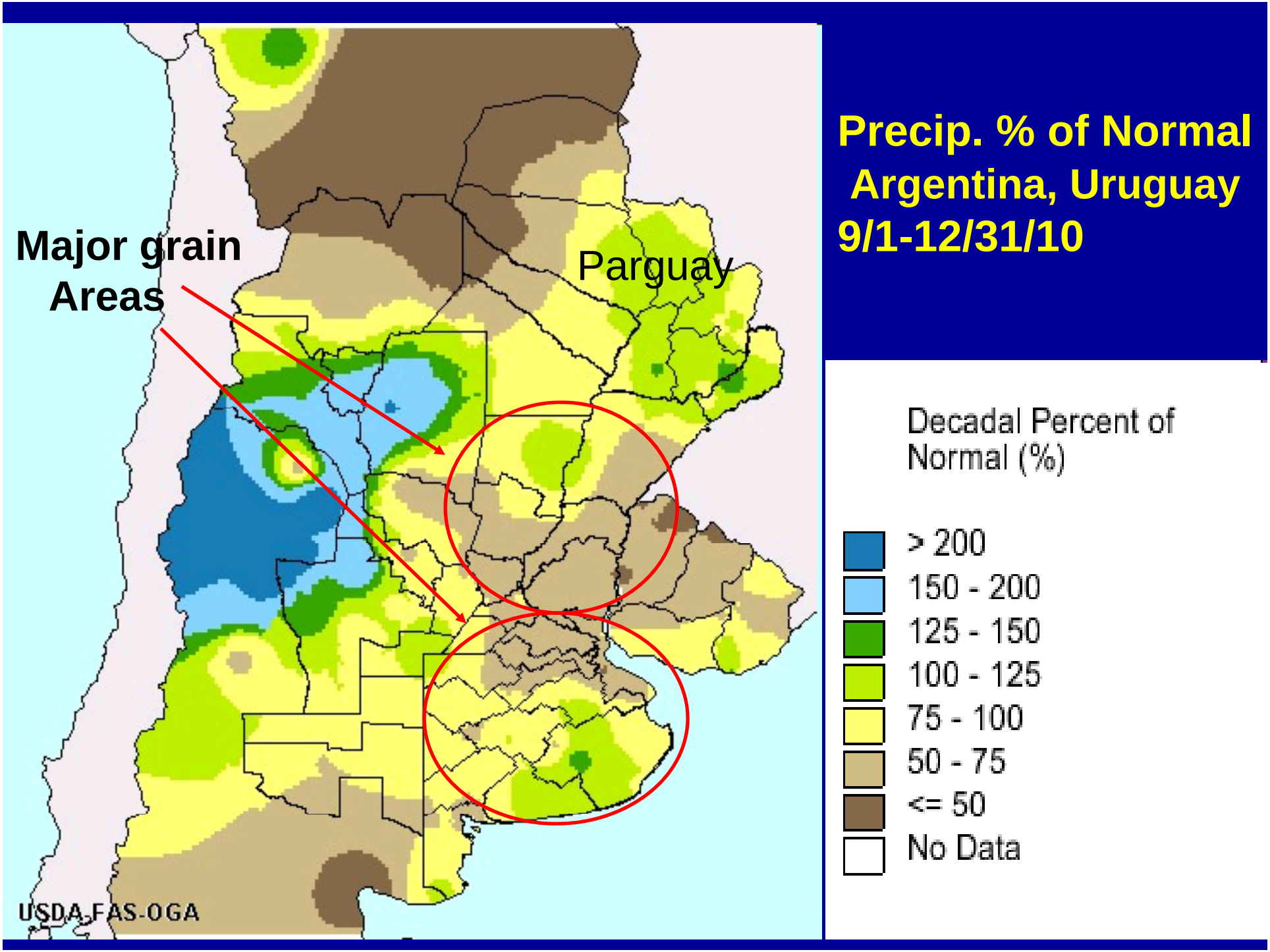
Iowa Crop Progress as

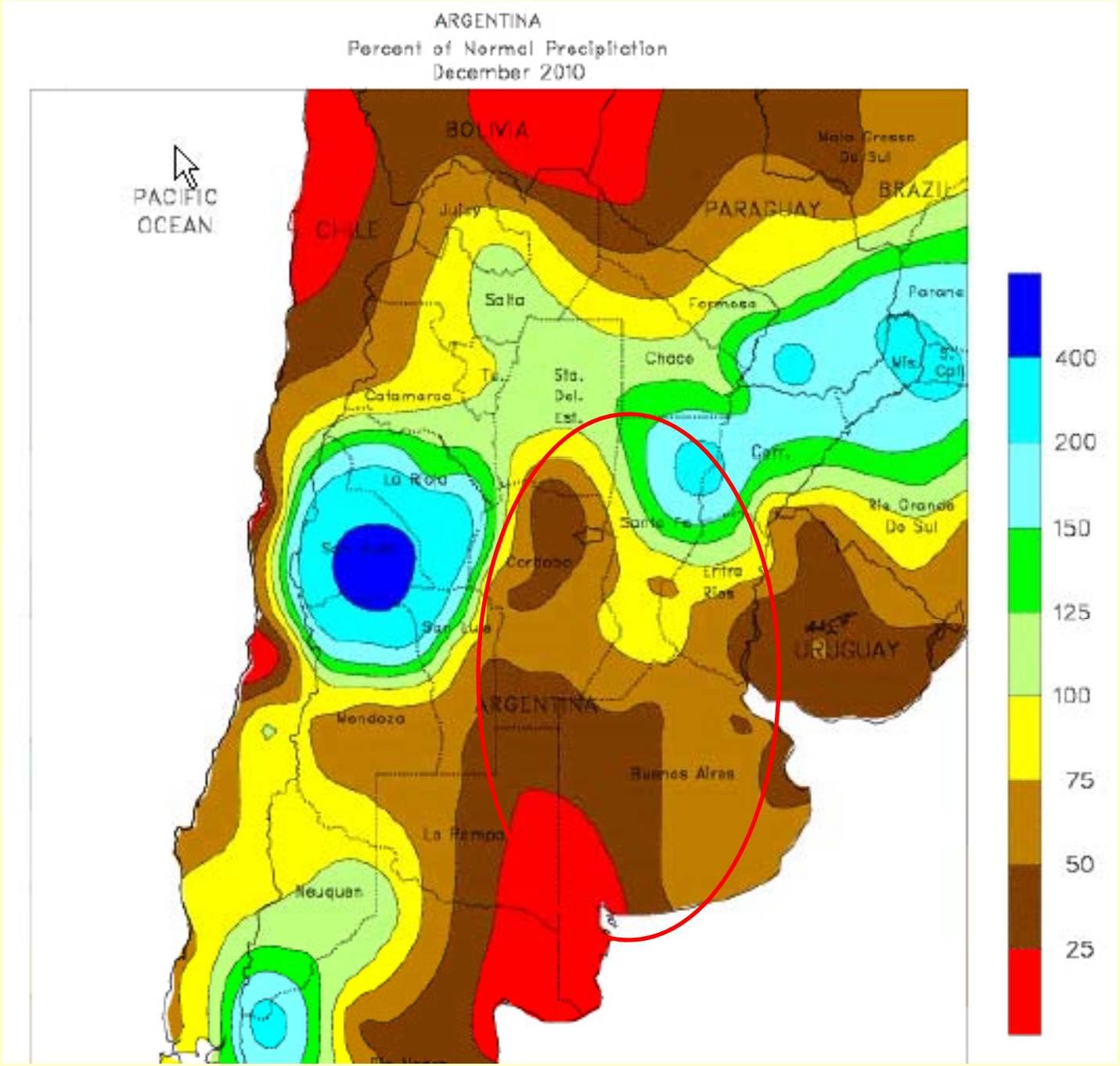
State	Corn Percent Mature			
	10/11/ 2009	10/4/ 2009	10/11/ 2008	5-Year Avg.
CO	79	63	86	88
IL	56	41	86	97
IN	69	51	87	92
IA	86	71	81	95
KS	95	89	91	97
KY	94	86	99	99
MI	61	38	86	87
MN	71	37	81	92
MO	89	78	89	98
NE	76	63	77	89
NC	100	100	100	100
ND	37	23	73	82
OH	67	46	86	88
PA	62	53	89	90
SD	84	57	82	91
TN	97	93	100	100
TX	97	92	92	98
WI	58	33	76	80
18 Sts.	74	57	84	92


6-10 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 16 SEP 2009
VALID SEP 22 - 26, 2009
DASHED BLACK LINES ARE CLIMATOLOGY
(DEG F) SHADED AREAS ARE FCST
VALUES ABOVE (A) OR BELOW (B) NORMAL
UNSHADED AREAS ARE NEAR-NORMAL


8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 16 SEP 2009
VALID SEP 24 - 30, 2009
DASHED BLACK LINES ARE CLIMATOLOGY
(DEG F) SHADED AREAS ARE FCST
VALUES ABOVE (A) OR BELOW (B) NORMAL
UNSHADED AREAS ARE NEAR-NORMAL
A
B
N
33
35
40
50
60
65
70
75
80
85


Brazil Precip.
% of Normal
12/21-12/31/10
Major SB
Areas
USDA-FAS-OGA
Decadal Percent of
Normal (%)
> 200
150 - 200
125 - 150
100 - 125
75 - 100
50 - 75
<= 50
No Data


Precip. % of Normal
Argentina, Uruguay
9/1-12/31/10
Major grain Areas
Parguay
Decadal Percent of Normal (%)
> 200
150 - 200
125 - 150
100 - 125
75 - 100
50 - 75
<= 50
No Data
USDA-FAS-OGA


ARGENTINA
Percent of Normal Precipitation
December 2010
PACIFIC OCEAN
BOLIVIA
CHILE
PARAGUAY
BRAZIL
URUGUAY
ARGENTINA
Salta
Jujuy
Formosa
Chaco
Catamarca
La Rioja
Santa Fe
Cordoba
Entre Rios
Mendoza
Buenos Aires
La Pampa
Neuquen
Rio Grande Do Sul
400
200
150
125
100
75
50
25

What to Look For in Sources of Outlook Information

- *Good detail on international conditions*
- *Use of sensitivity analysis & probabilities*
- *Up-to-date S-D*
- *Advisable to use several sources + USDA*
- *Technical analysis can supplement fundamental analysis*
- *Keys for 2010-11: U.S. crops, China,*
- *S. Am. crops, E-15*

Wheat: world competition is strong

-- Adequate but reduced U.S. Carryover expected, world – sharper decline

-- Weather concerns in S. Plains & FSU

-- Soft red acres up sharply for 2010-11

-- Uncertain areas: China weather, 2011 world production

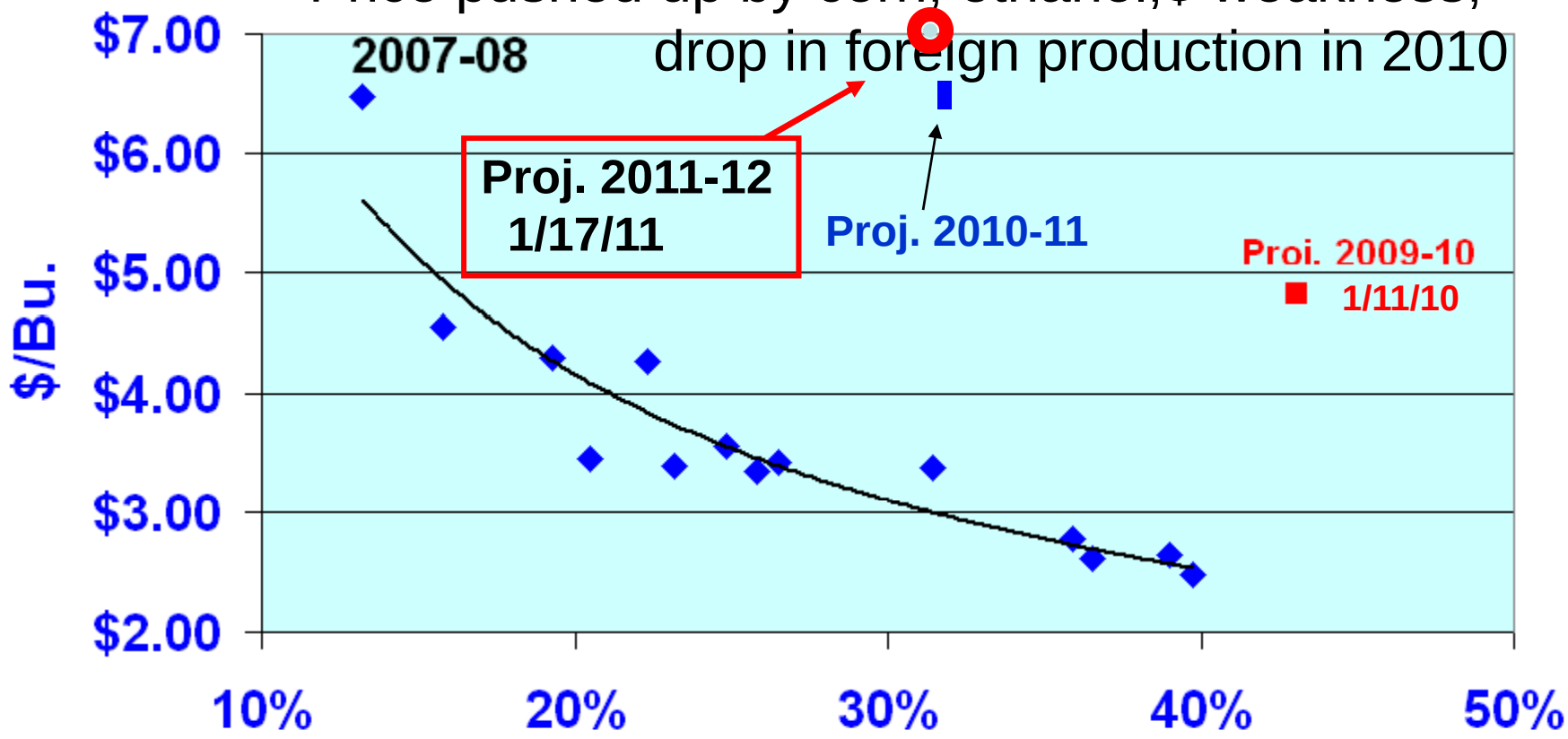
Updated:1/12/2011

USDA Wheat Balance Sheet				2010-11	R.W. 2011-12			R.W. 2012-13		
5/12/2010	2007/08	2008/09	2009/10	R.W. Projected	Low Yld.	Norm. Yld. Projected	Higher Yld.	Low Yld.	Norm. Yld. Projected	Higher Yld.
Area (Mil. A.)										
Planted	60.5	63.2	59.2	53.6	58.7	58.7	58.7	55	57	57
Harvested	51	55.7	49.9	47.6	48.7	49.7	50.2	45.5	51.0	51.48
Yield, Bu./A.	40.2	44.9	44.5	46.4	41.5	44.5	45.5	41.5	44.5	46
Production, Mil. Bu.	2,051	2,499	2,218	2,208	2,021	2,211	2,283	1,888	2,269	2,368
Beginning stocks	456	306	657	976	792	792	792	733	733	733
Imports	113	127	119	110	120	115	110	120	110	110
Supply, total	2,620	2,932	2,993	3,293	2,933	3,118	3,185	2,741	3,112	3,211
Food	948	927	917	930	935	940	940	935	940	940
Seed	88	78	69	76	80	80	80	78	78	78
Feed and residual	16	255	150	170	150	190	220	110	210	220
Domestic, total	1,051	1,260	1,137	1,176	1,165	1,210	1,240	1,123	1,228	1,238
Exports	1,263	1,015	881	1,325	1150	1175	1180	1110	1120	1140
Use, total	2,314	2,275	2,019	2,501	2,315	2,385	2,420	2,233	2,348	2,378
Ending stocks	306	657	976	792	618	733	765	508	764	833
Weeks Supply	6.9	15.0	25.1	16.5	13.9	16.0	16.4	11.8	16.9	18.2
Stocks/use	13.2%	28.9%	48.3%	31.7%	26.7%	30.7%	31.6%	22.8%	32.5%	35.0%
Avg. farm price ($/bu)	$6.48	$6.78	$4.87	$5.80	$8.80	$7.00	$6.25	$8.90	$6.25	$6.10

U.S. Wheat Price & Stocks/Use
1994-05 to 2008-09

1/17/11

Price pushed up by corn, ethanol,$ weakness, drop in foreign production in 2010



’10-Crop Export Sales Through 1/6/11

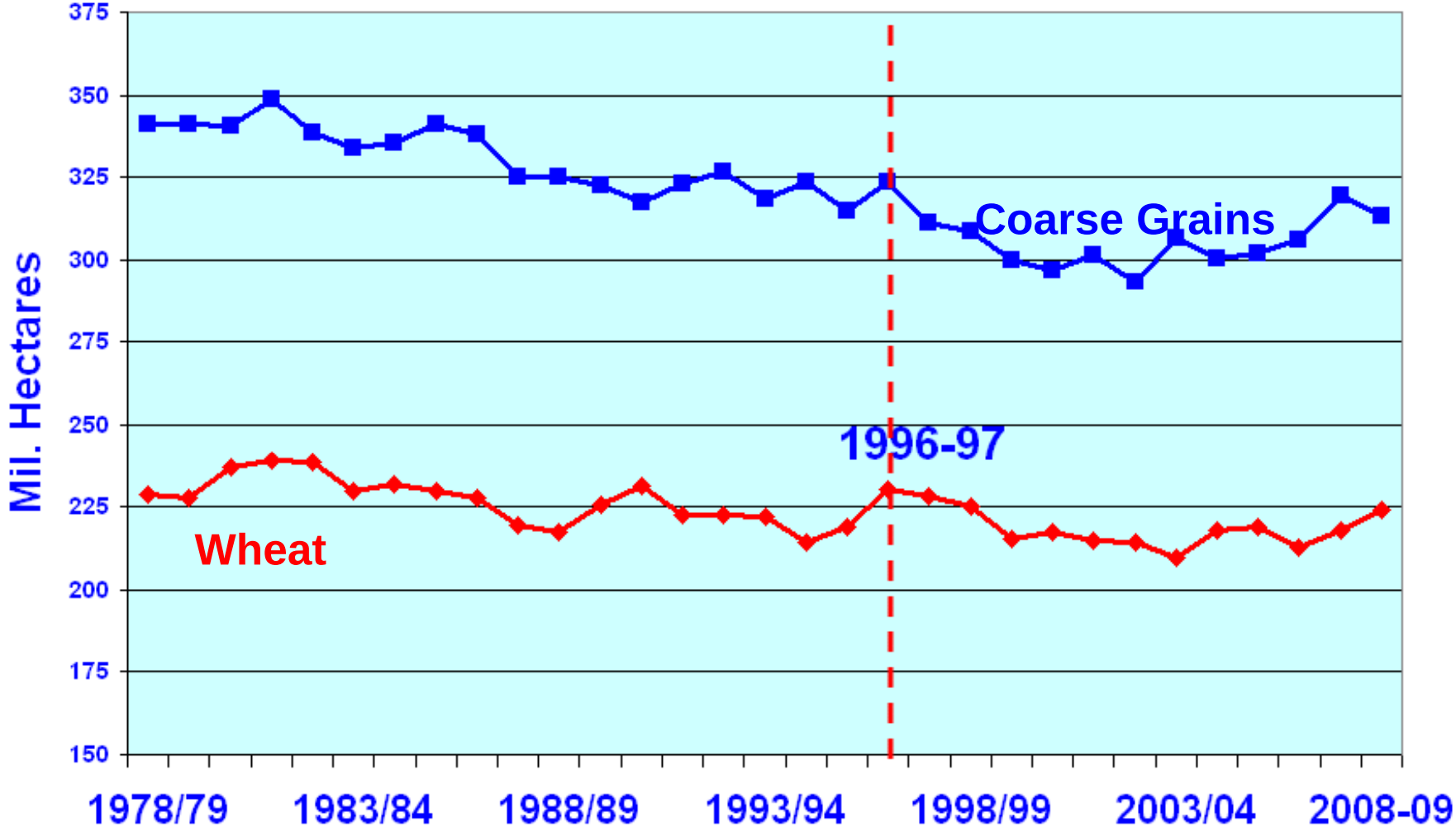
- **Soybeans: 1,321 mil. Bu. + 9% from yr.ago.**
  - ***83% of USDA projected mkt. yr. exports***
  - **USDA October proj. expts. Low 7 of 10 yrs.**
- **Corn: 1,054 mil. bu. +4% from yr. ago**
- **Wheat, at 58% through mktg. yr.:**
  - **SRW: -10% vs. yr. ago**
  - **HRW: +99%**
  - **HRS: +90%**
  - **All wheat:+61%**
  - **USDA Projected for mktg. yr.: +48%**

Do pre-harvest new-crop wheat prices have a risk premium?

- OSU & KSU research says no
- U. of Minn. Studies hint at a possible small one

- Wheat: fundamentally different than corn & SB
  - Harvesting nearly year around globally
  - U.S. much smaller share of global production than corn & SB
  - Somewhat more weather resistant than corn & SB

World Wheat & Coarse Grain Area: Another 1996?



SB Balance Sheet

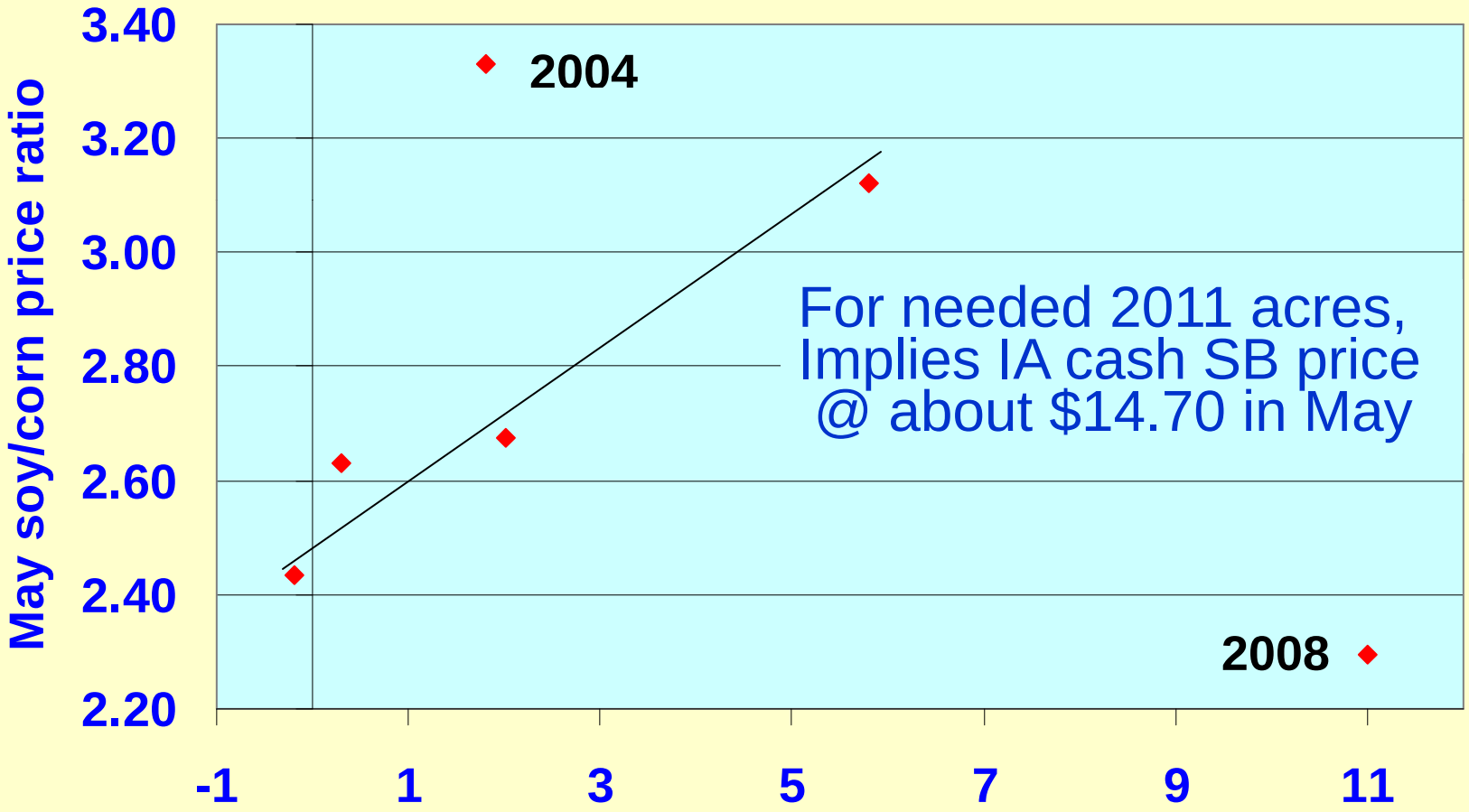
Updated:2/8/2011

R. Wisner	2006-07	2007-08	2008-09	2009-10 Prelim.	Projected 2010-2011	Projected 2011-2012 Low	Projected 2011-2012 Med.	Projected 2011-2012 High	Projected 2012-2013 Low	Projected 2012-2013 Med.	Projected 2012-2013 High
Yield (bu. per acre)	42.9	41.7	39.7	44.0	43.5	41.0	43.3	45.5	41.0	43.9	45.5
Long-term historical yield probability:					65%	18%	65%	17%	18%	65%	17%
Supplies:											
Planted acres (million)	75.5	64.7	75.7	77.5	77.4	76.5	76.5	76.5	78.0	78.0	78.0
Harvested acres (million)	74.6	64.1	74.7	76.4	76.6	75.2	75.5	75.5	76.7	77.0	77.0
Production (mil. bu.)	3,197	2,677	2,967	3,359	3,329	3,083	3,269	3,435	3,145	3,380	3,504
Beginning carryover (mil. bu.)	449	574	205	138	151	120	120	120	130	130	130
Total Supply	3,655	3,261	3,185	3,512	3,495	3,218	3,397	3,563	3,290	3,522	3,643
Usage:											
Crush (mil. bu.)	1,808	1,803	1,662	1,752	1660	1,580	1,660	1,680	1,580	1,660	1,680
Seed & residual (mil. bu.)	157	93	101	108	115	148	122	133	130	122	133
Exports (mil. bu.)	1,116	1,159	1,283	1,501	1600	1,360	1,485	1,590	1,450	1,610	1,670
Total Usage	3,081	3,056	3,047	3,361	3375	3,088	3,267	3,403	3,160	3,392	3,483
Ending Soybean Carryover: (mil. bu.)	574	205	138	151	120	130	130	160	130	130	160
Carryover, weeks of total use	9.7	3.5	2.4	2.3	1.9	2.2	2.1	2.5	2.1	2.0	2.4
Prices:											
U.S. weighted avg. farm price	$6.43	$10.10	$9.97	$9.59	$12.00	$15.00	$13.50	$11.50	$14.75	$13.75	$11.50
Iowa weighted avg. farm price	$6.38	$10.05	$9.92	$9.49	$11.90	$14.90	$13.40	$11.40	$14.65	$13.65	$11.40
Soybean/corn price ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Harvest price (central Iowa)	$5.45	$8.45	$8.50	$9.50	$10.50	$14.50	$13.00	$10.90	$14.20	$13.25	$10.90
Nov. futures price (harvest avg.)	$6.05	$9.45	$9.10	$9.95	$11.30	$15.30	$13.70	$11.65	$15.00	$13.95	$11.65
Soy meal, Decatur, $/T 48% protein	$205	$336	$331	$311	$359	$440	$390	$325	$440	$410	$325
Soy oil, $ per cwt.	$31.02	$52.03	$32.16	$35.95	$52.00	$58.00	$54.00	$50.00	$56.00	$53.00	$50.00

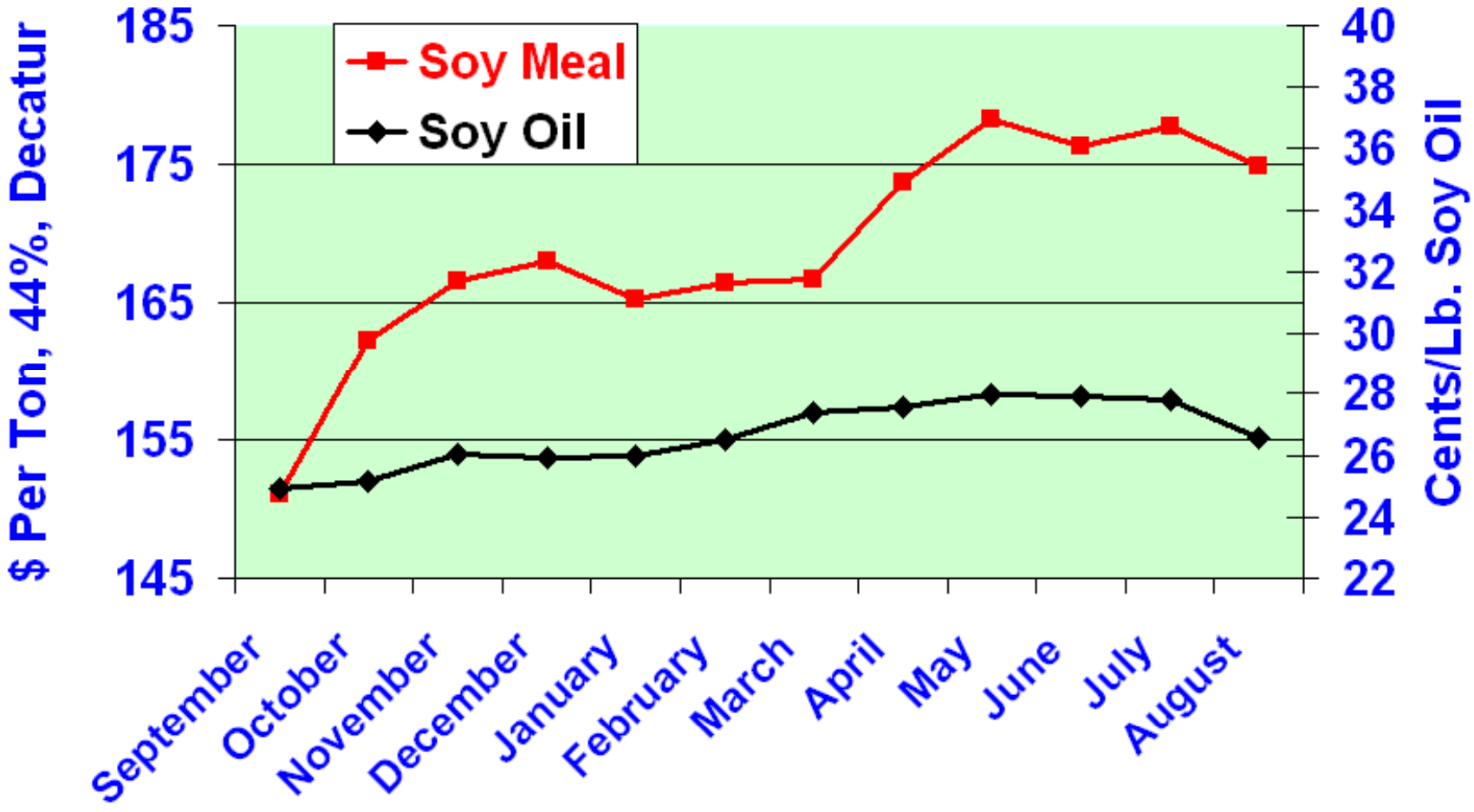
Using elesticity for SB forecast gives 2010-11price at $13.70/bu.

- **Corn price will support soybean price**
- **The two markets will create a balance of needed acreages in 2011**
- **Biodiesel demand may also be a factor since Congress renewed biodiesel tax credit**
- **Seasonality: SB supplies will be very tight in late summer**

Soybean/Corn Price Ratio & Change in U.S. Soybean Planted Acres Selected Years



Seasonality of Soybean Product Prices, 1995-2007-08 Marketing Years



Take-home Points: Fundamental Analysis

- Look at the big picture
- Demand elasticity is changing & making prices more sensitive to supply changes
- Typical approach uses balance sheets
- Price forecasts: typically based on stocks/use, forecasting models, and/or elasticity of demand
- Know where to get information: weather & crops, USDA reports, ethanol, international crop conditions
- Other related information is in next slides

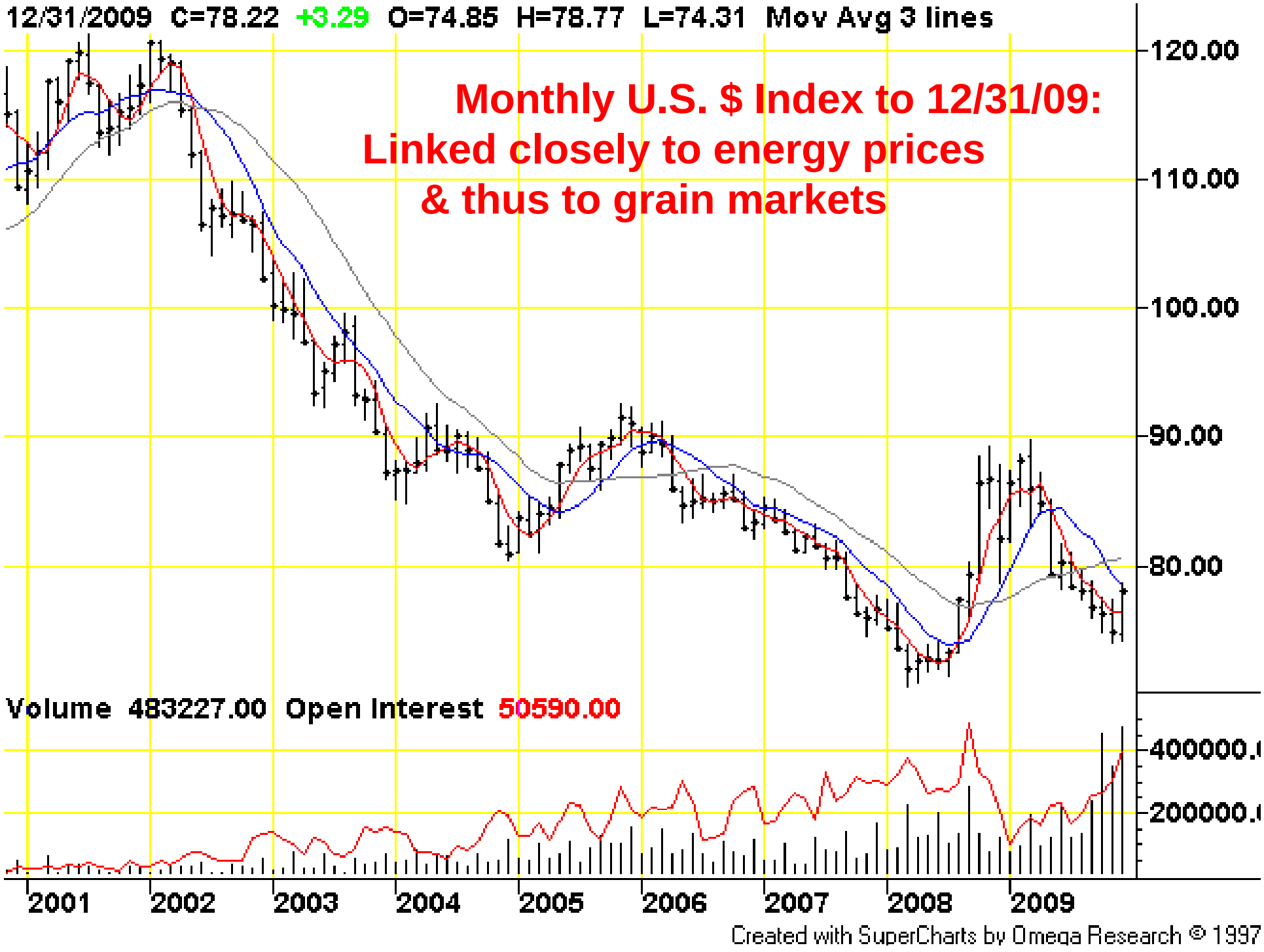
Thanks!

Questions?

Web Sites

http://www.econ.iastate.edu/faculty/wisner/

http://www.agmrc.org/renewable_energy/agmrc_renewable_energy_newsletter.cfm


12/31/2009 C=78.22 +3.29 O=74.85 H=78.77 L=74.31 Mov Avg 3 lines
Monthly U.S. $ Index to 12/31/09:
Linked closely to energy prices
& thus to grain markets
120.00
110.00
100.00
90.00
80.00
Volume 483227.00 Open Interest 50590.00
400000.
200000.
2001
2002
2003
2004
2005
2006
2007
2008
2009
Created with SuperCharts by Omega Research © 1997

U.S. General Econ. Outlook

3 Highly Likely Developments

- **Trend toward weaker $**
- **Increasing inflation, esp. in 2-3 years**
- **Higher interest rates– in 2-3 years, possibly sooner**

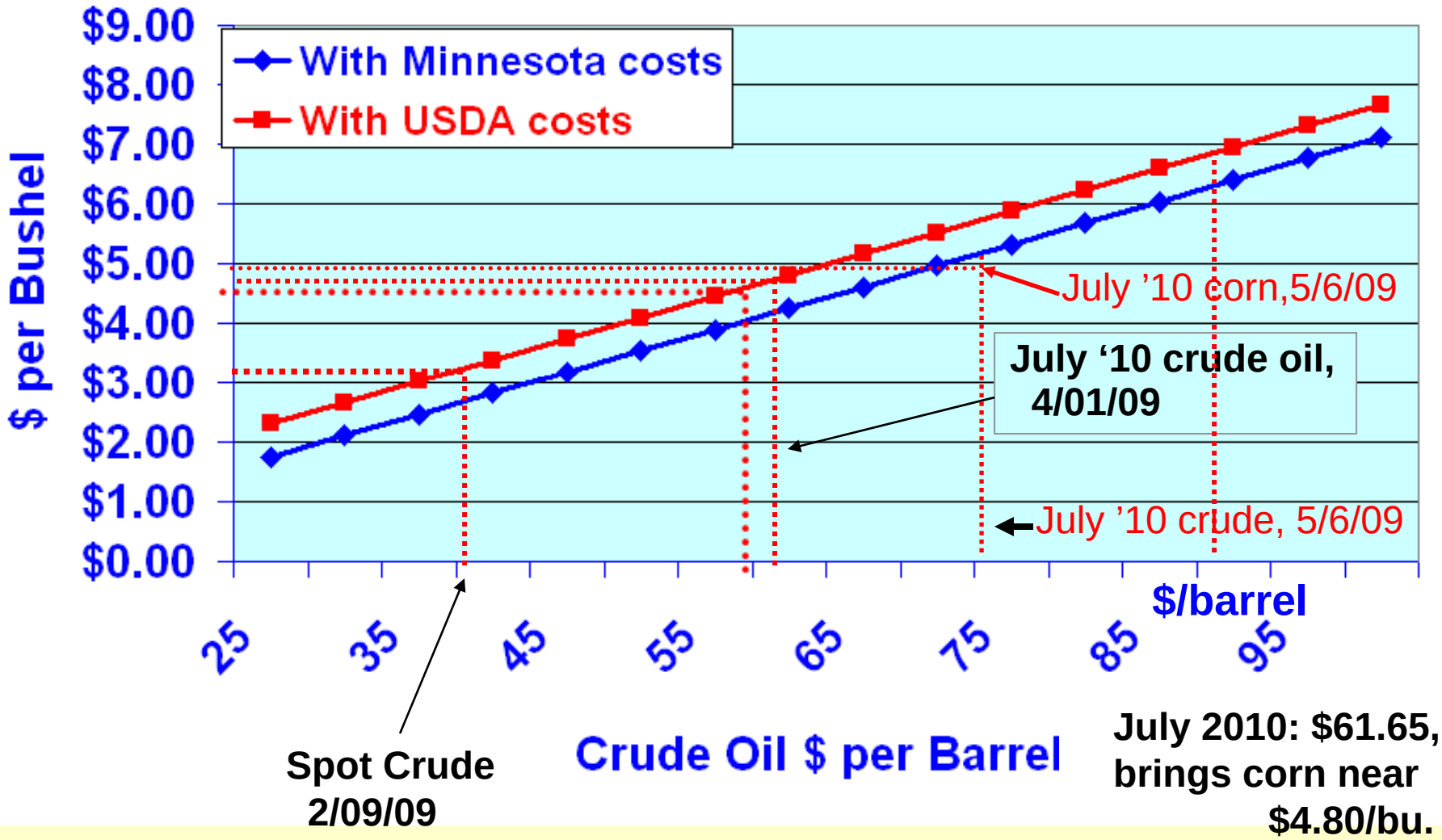
Driving forces: <u>huge</u> budget deficits and "cap & trade"

World Feed Trade Outlook

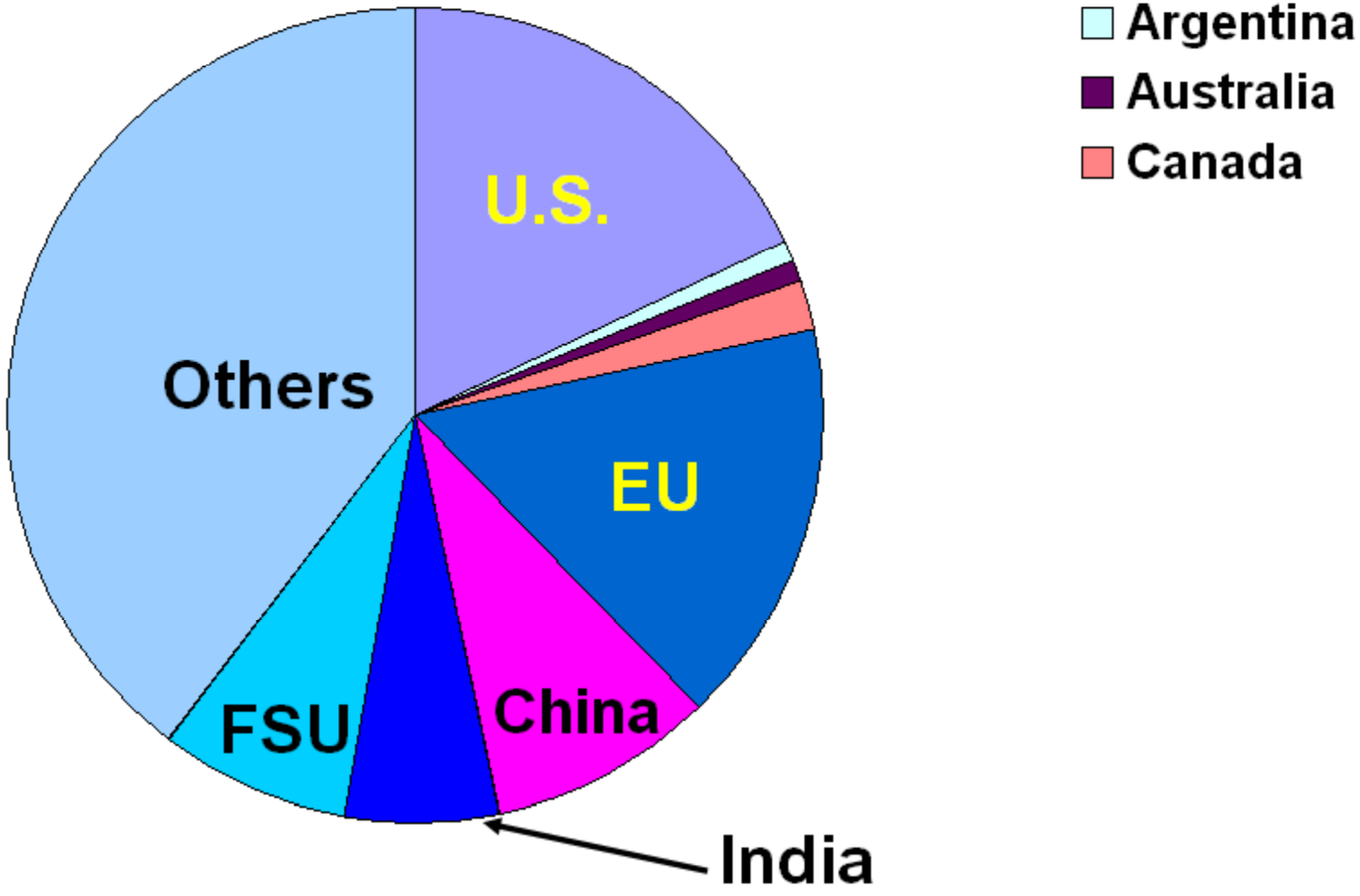
- **5 Keys to global feed trade: (1) *U.S. biofuels,***
  (2) U.S crop yields, (3) China,(4) FSU, (5) South America
- ***Global warming: is it real?***
- **Will reason prevail in policies?**
  - **impact of GHG emissions controls on economy, grain and animal production and trade?**

4/01/09 *updated 5/6/09*

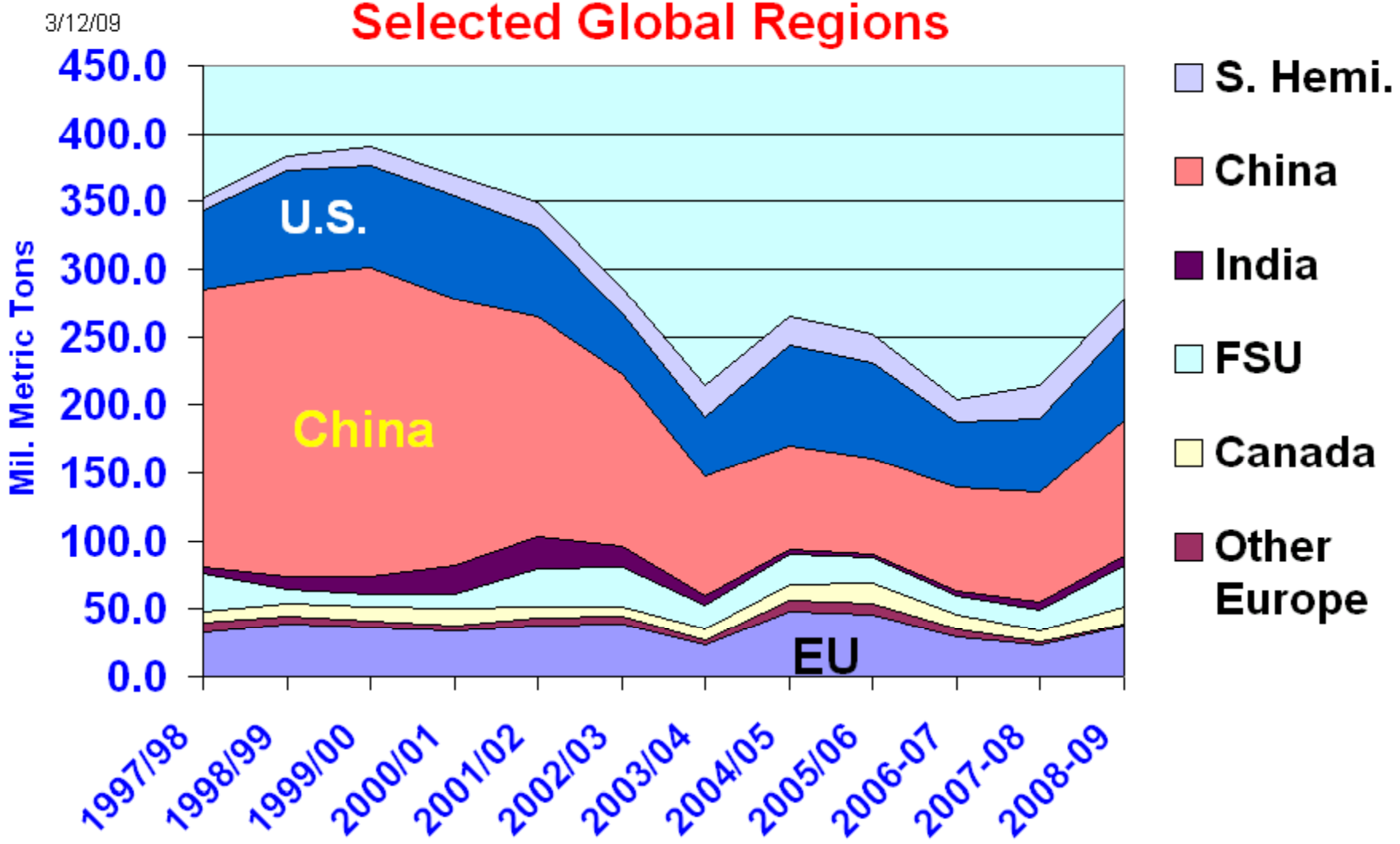
Approximate Maximum Price Ethanol Plants to Pay for Corn with Varying Crude Oil Prices



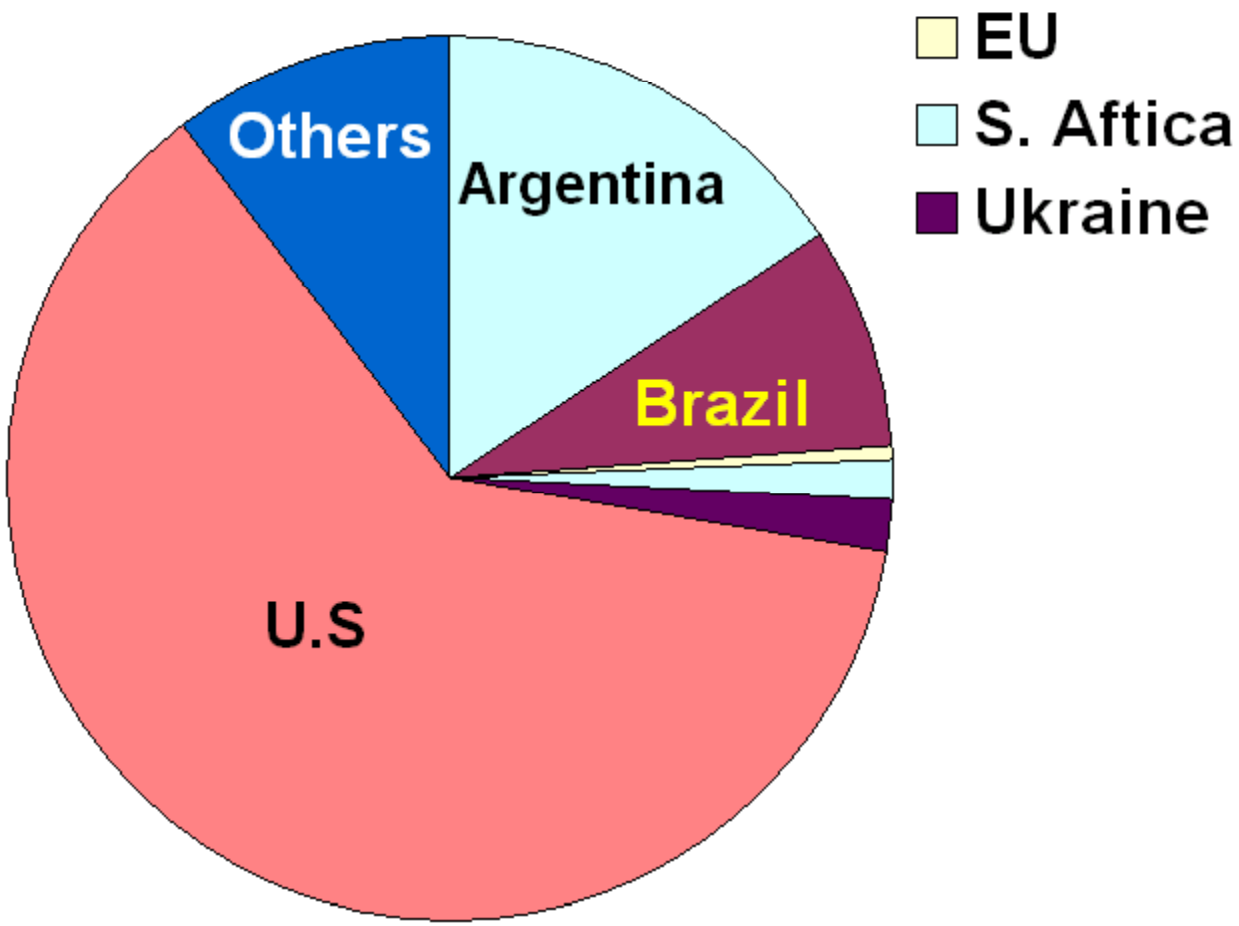
Wheat & Coarse Grain Use, 2007-08



Wheat & Coarse Grain Carryover Stocks in Selected Global Regions

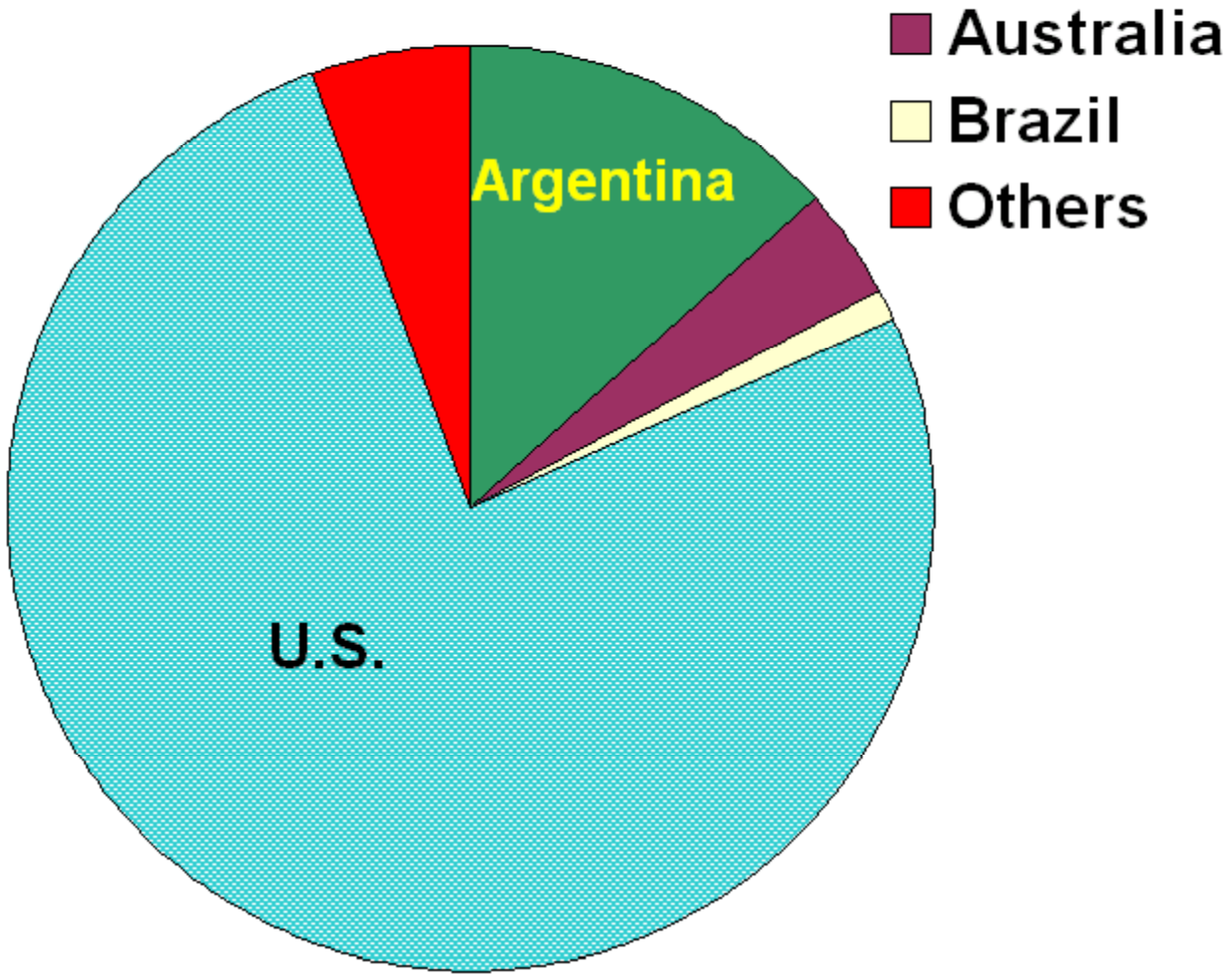


World Corn Exports by Source, 2007-08



U.S. Ethanol & Yield Trend Have Big Implications for Corn Exports

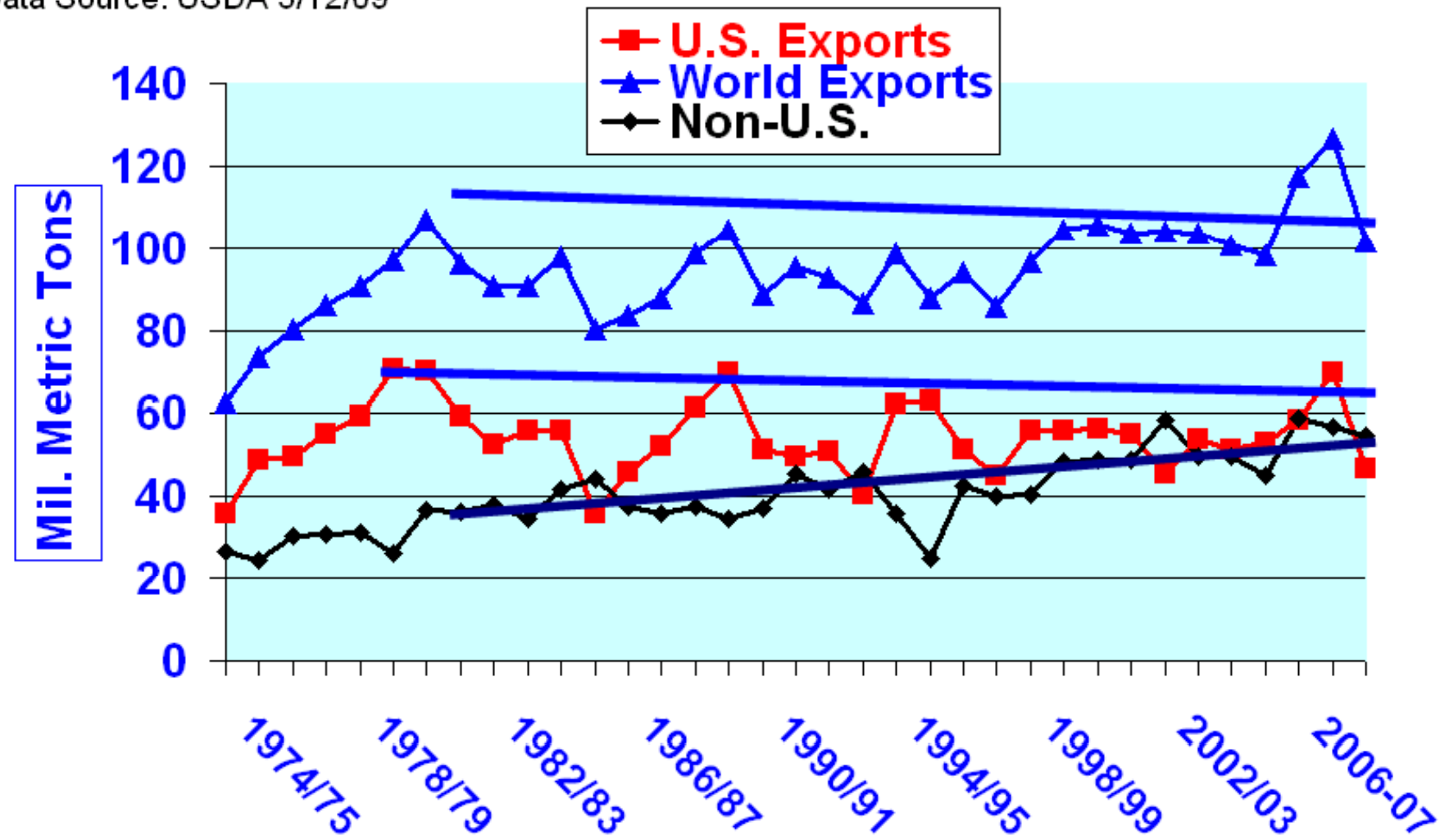
World Sorghum Exports by Source, 2007-08



Sorghum Also is an Ethanol Feedstock

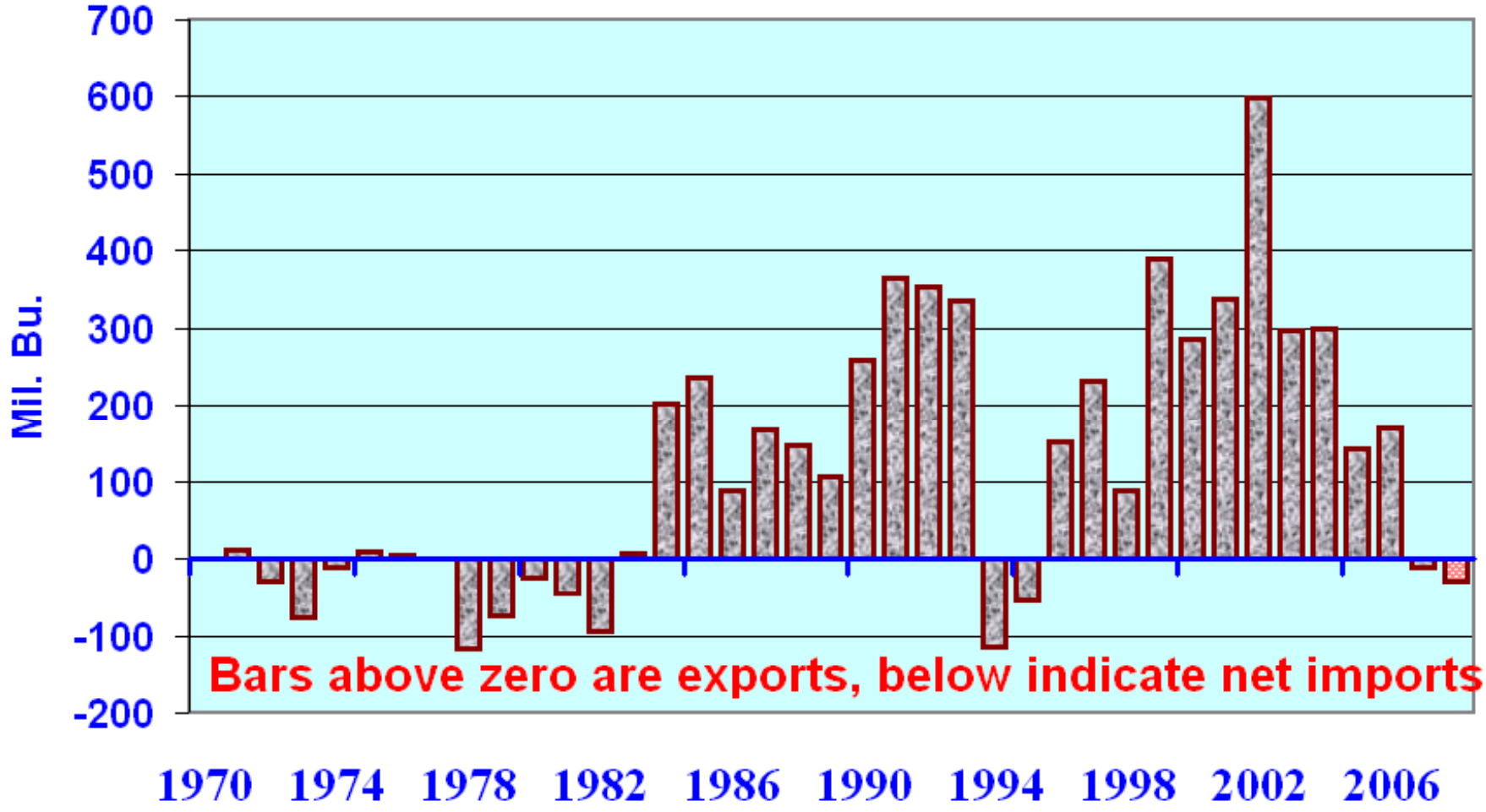
U.S., Foreign, and World Coarse Grain Exports

Data Source: USDA 3/12/09



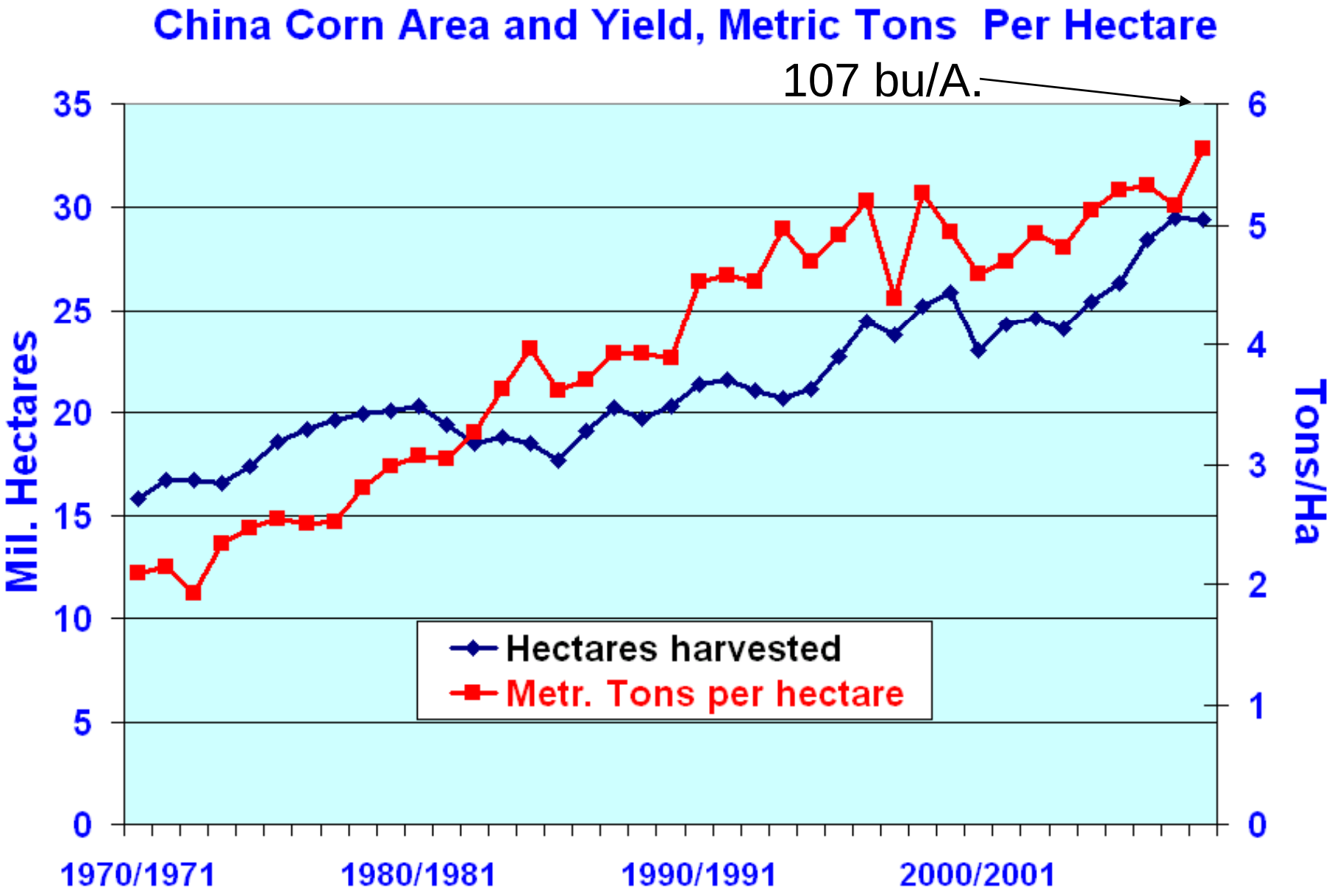
China's Net Corn Exports, Marketing Years & USDA Projection for 2008-09

2/10/09



Corn Yield to Affect China Export Availability

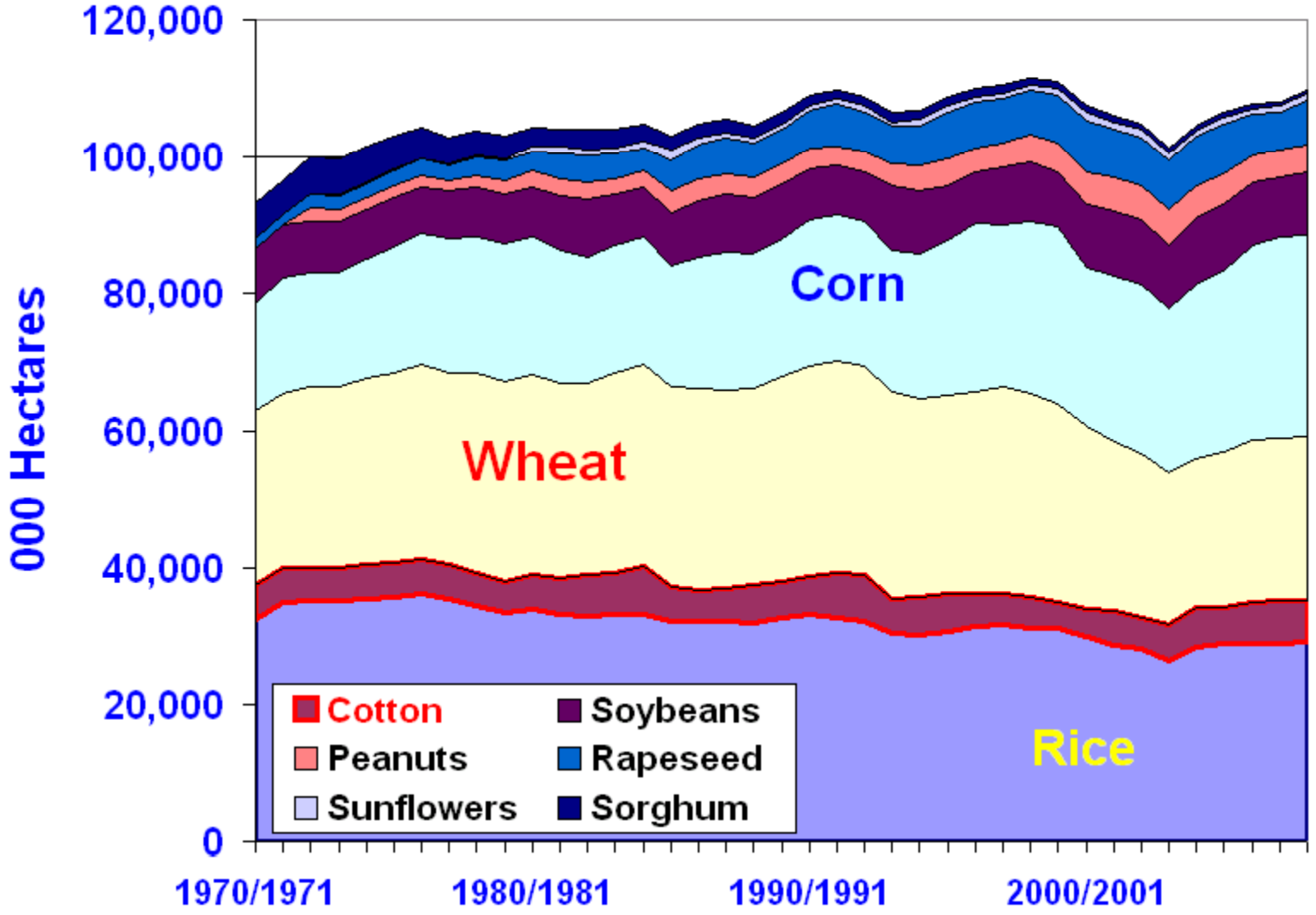
Normal Yield: about 68-70% of U.S.



2/6/ 09

China Major Crop Area Harvested

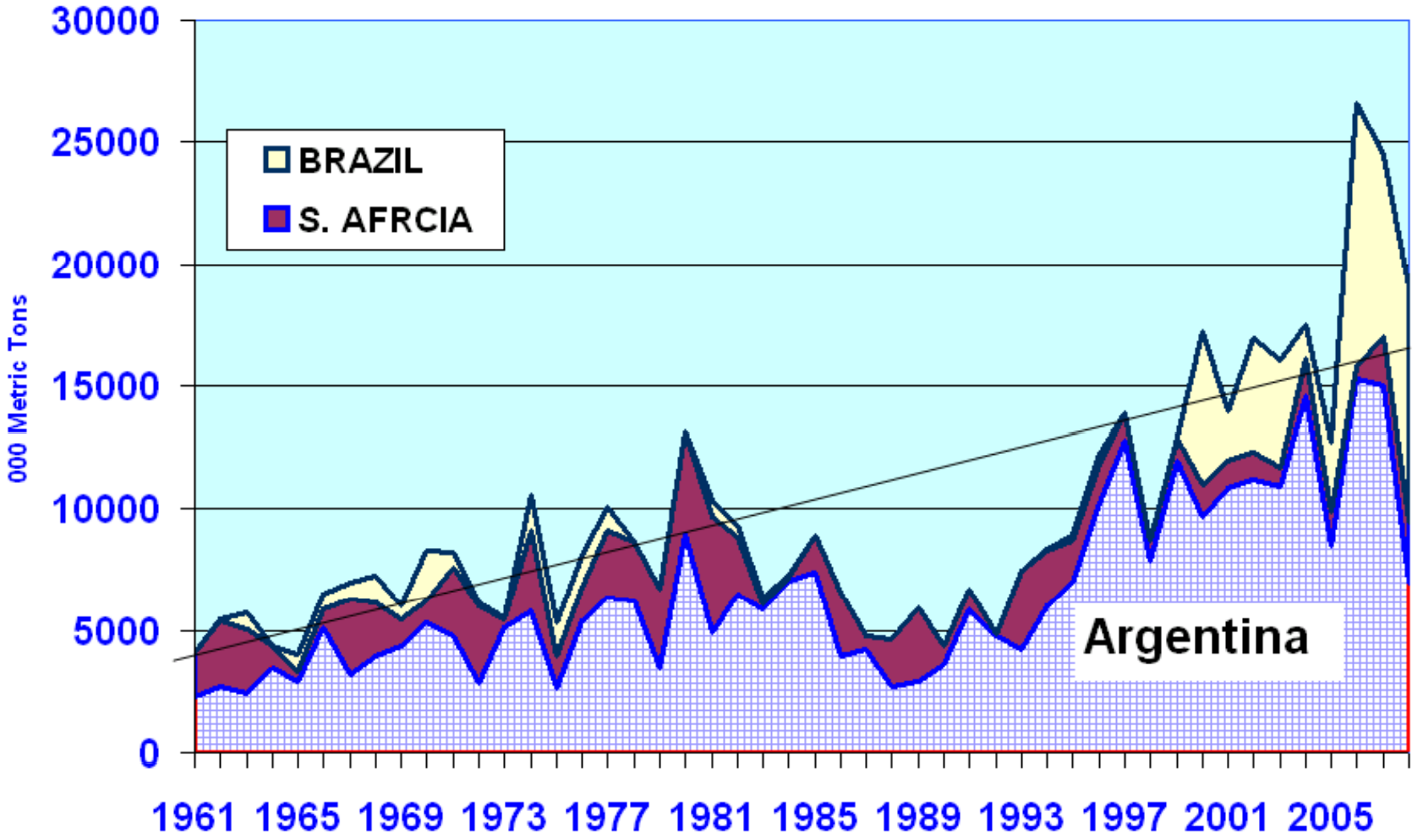
Data Source: USDA, FAS



3/12/09

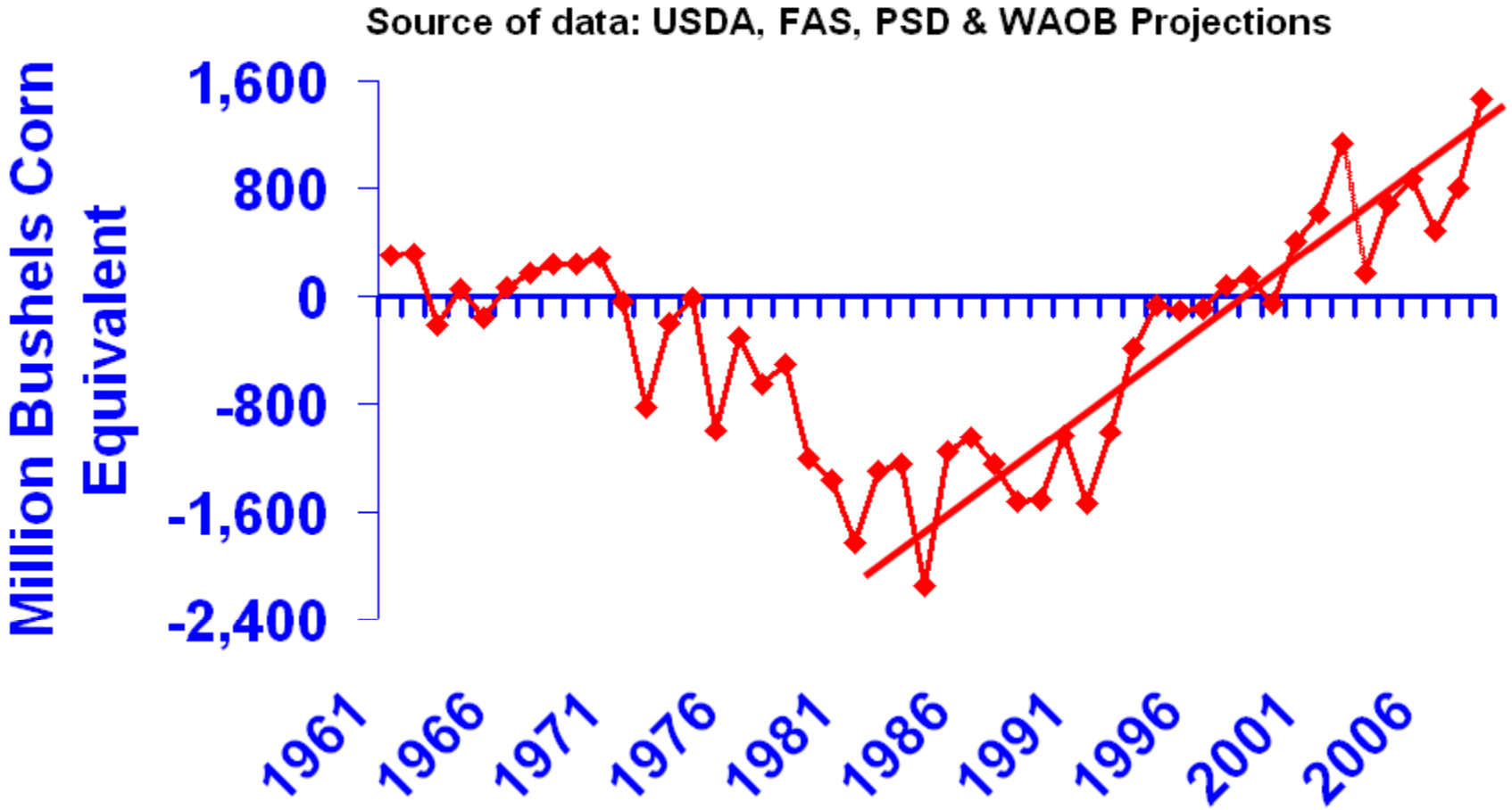
Southern Hemisphere Corn Exports

2008 crop down 17 mil. Tons or 670 mil.bu.

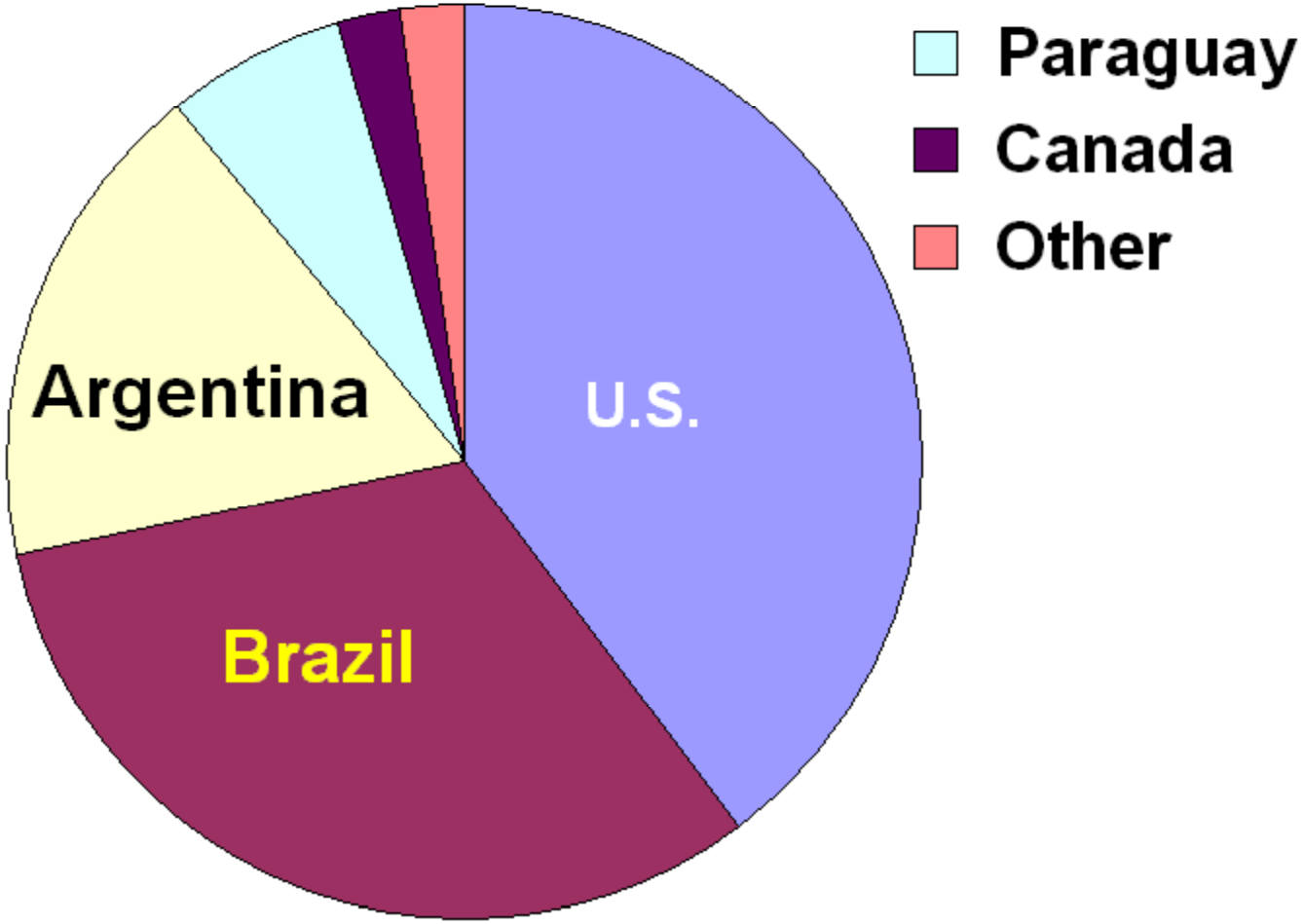


Net Grain Exports, Former Soviet Union, 1961-2008

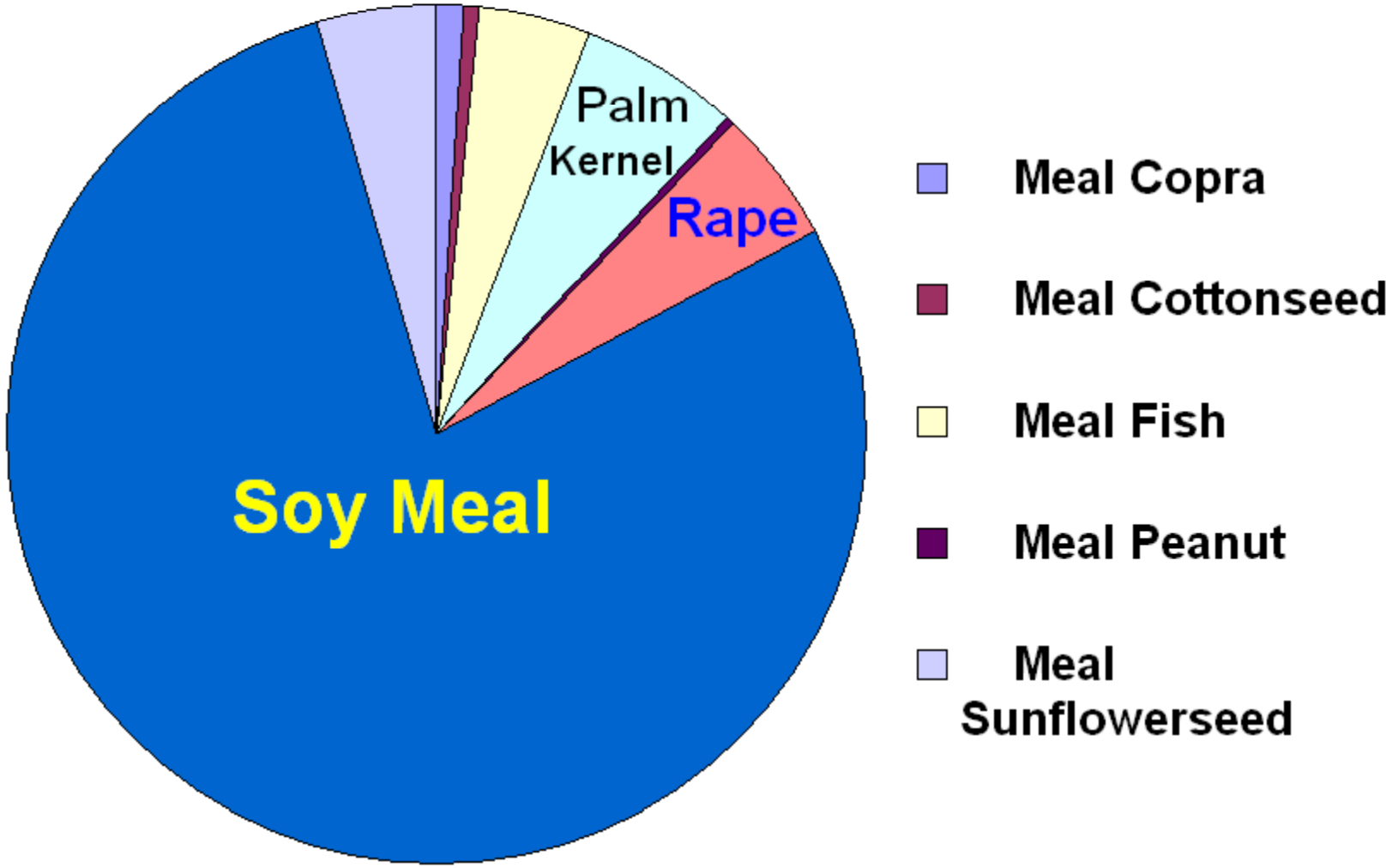
3/12/09



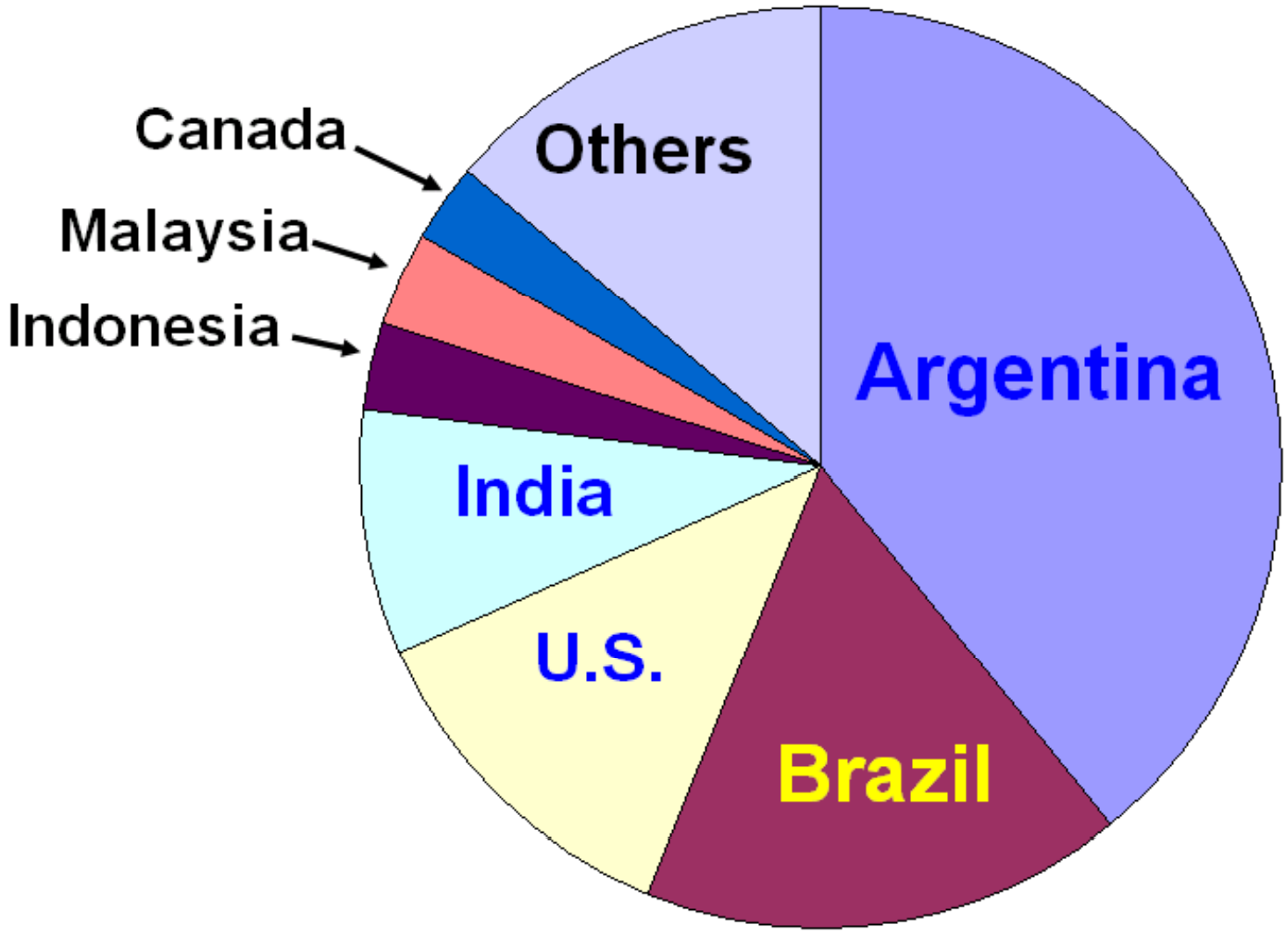
World Soybean Exports-2007-08



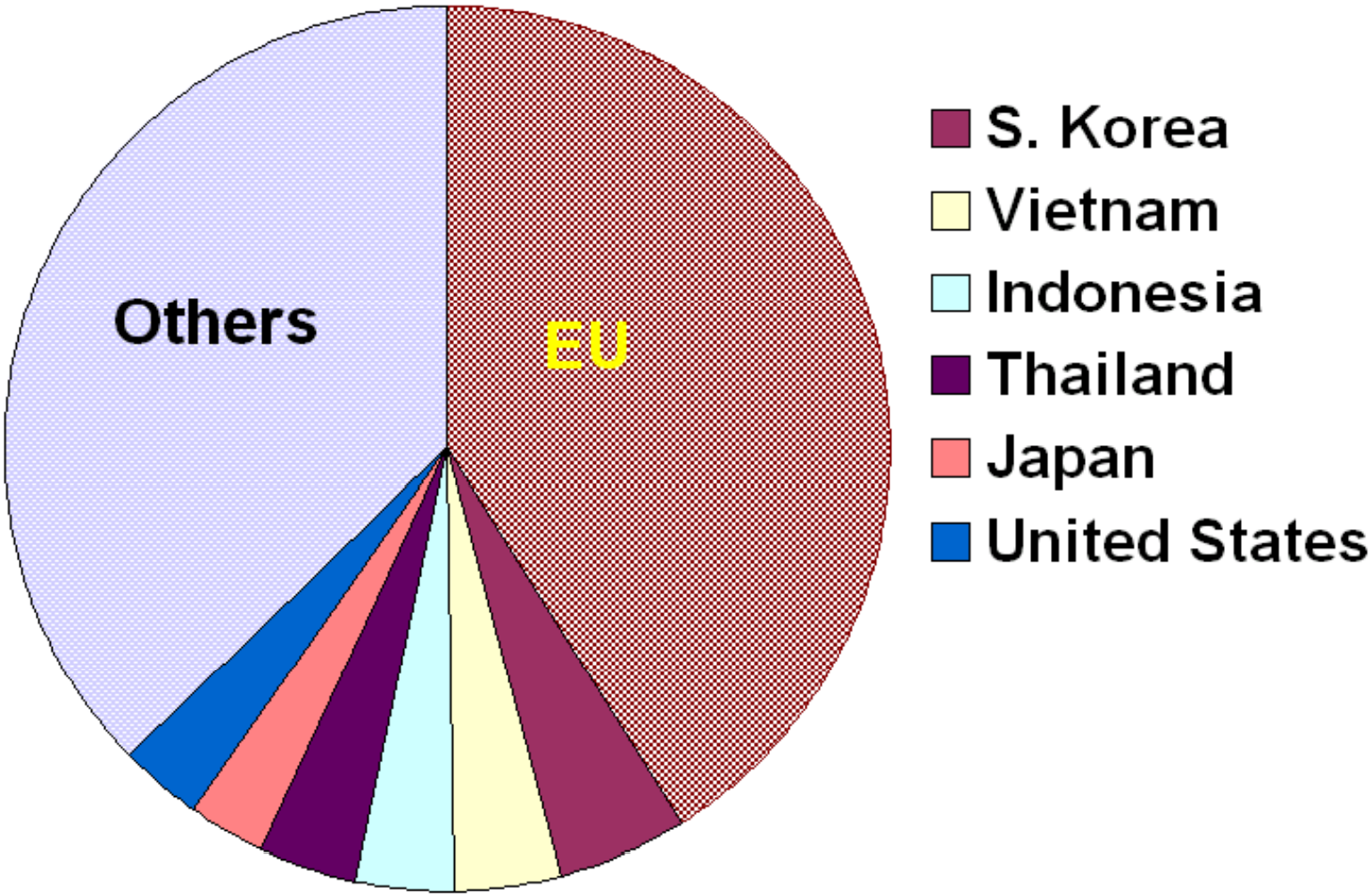
Major World Protein Exports, 2007-08



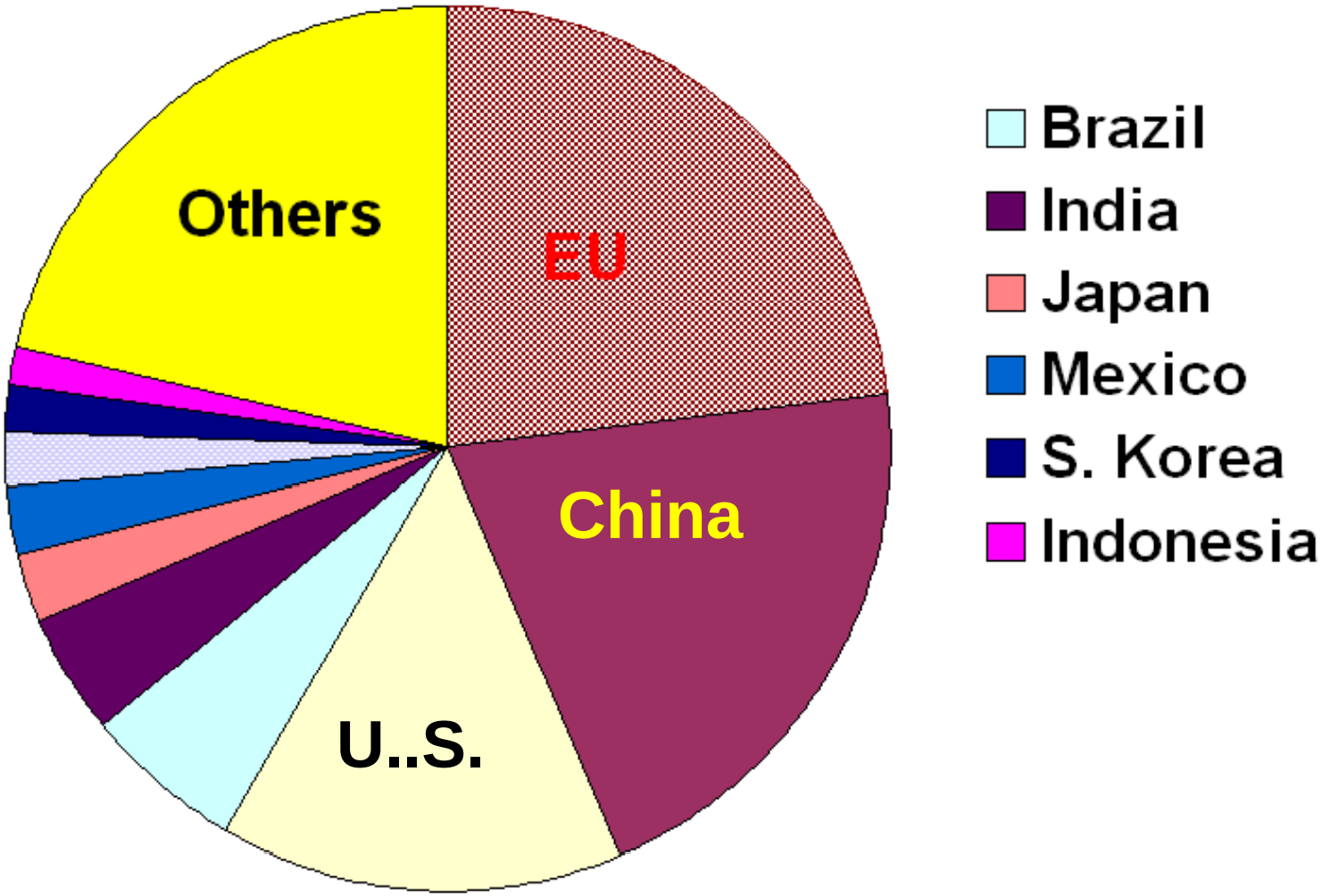
World Protein Meal Exporters, 2007-08



Major Protein Meal Importers, 2007-08

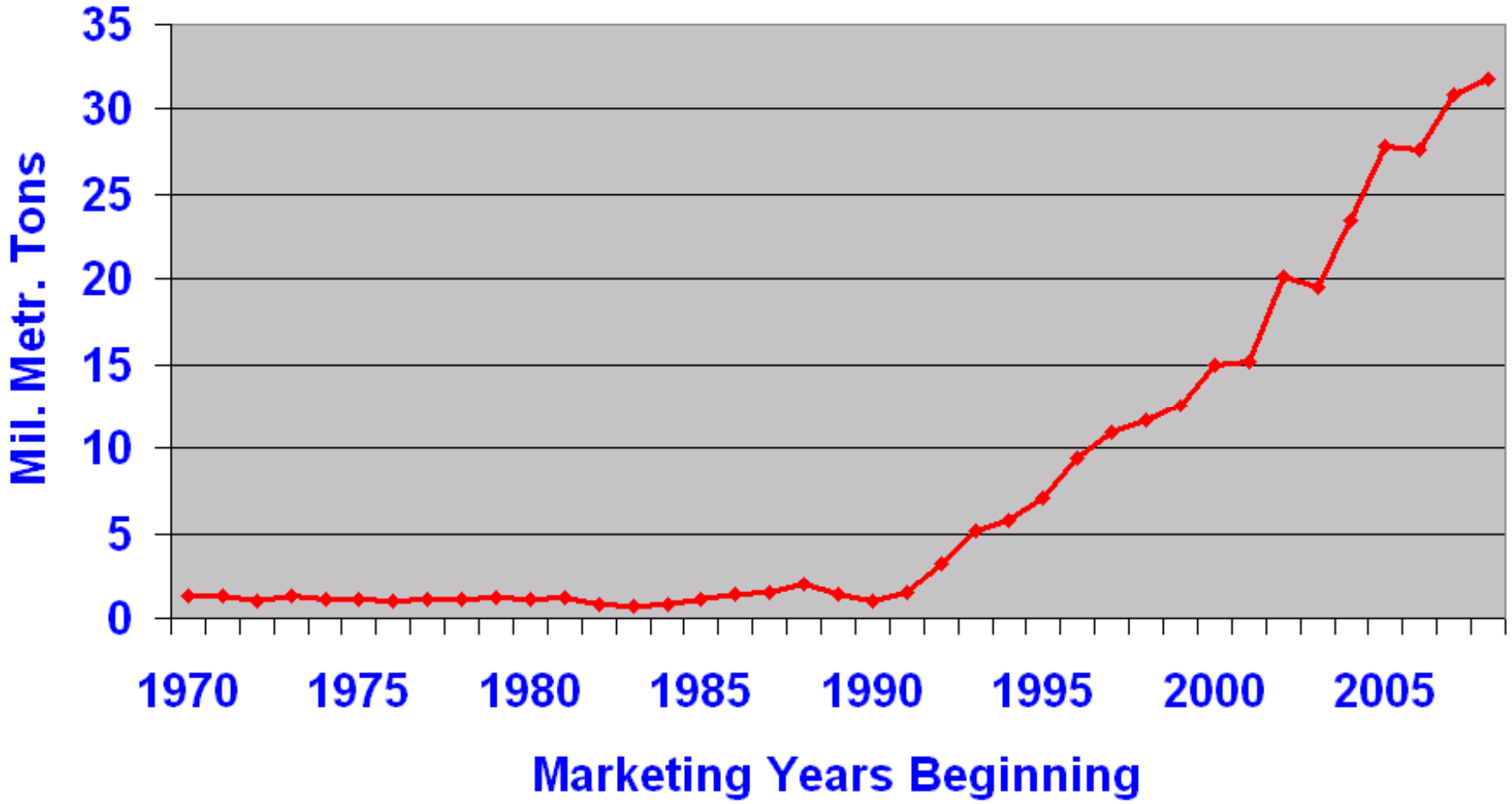


Major Protein Meal Consumers, 2007-08

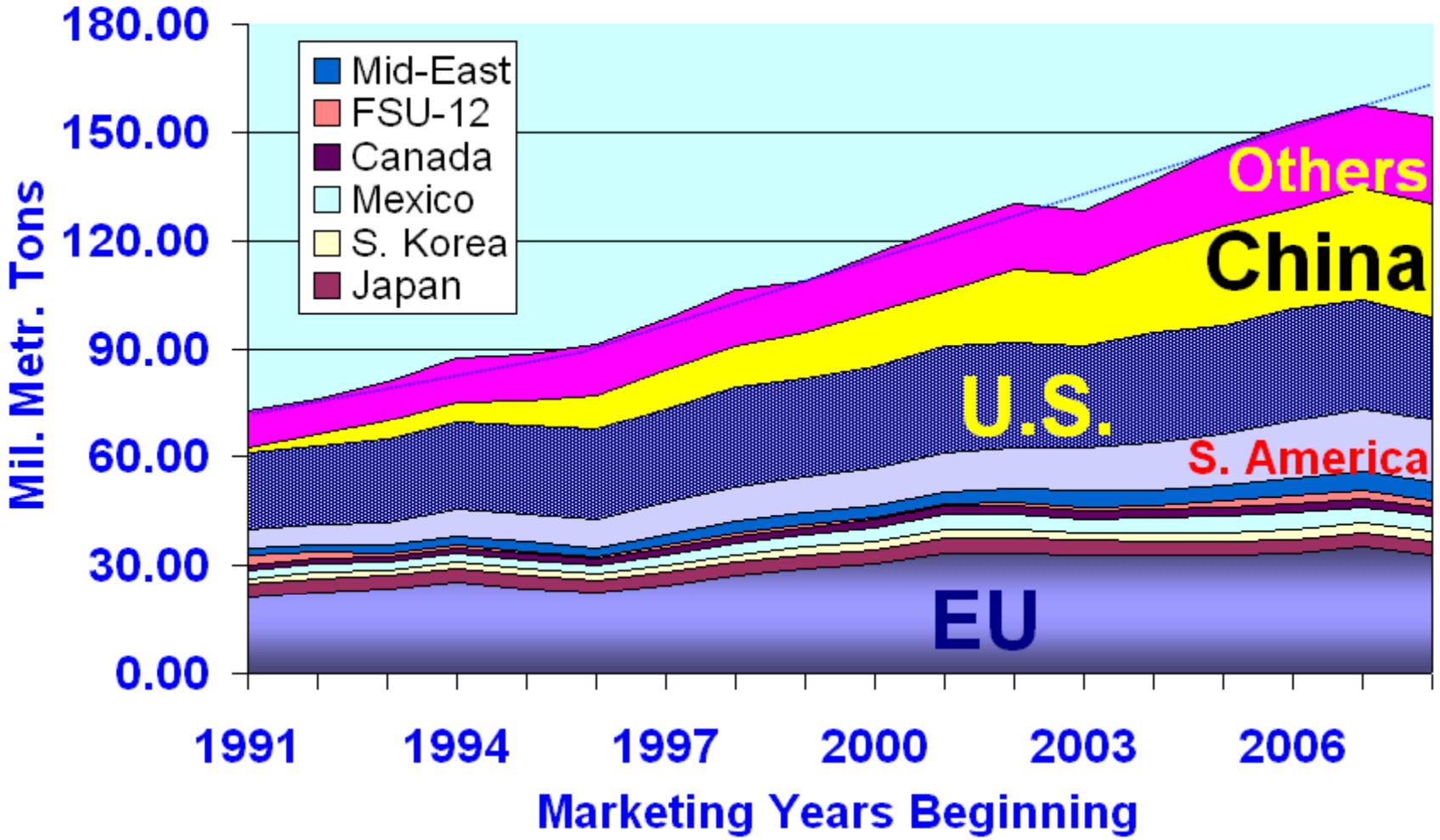


China Soybean Meal Use

Slower growth in the Future?



World Soybean Meal Use



Newly Cleared Land In Brazil

Planted to Upland Rice

Potential area to be cleared for crops

West Central Argentina, 2007

Four Key Areas to Influence Future Feed Exports

- **U.S. -- Biofuels Policies & Crop Yields**
  - **Less restrictive GHG regulations?**
- **China**
  - **Will its SBM growth slow?**
  - **Will it be a corn importer?**
- **South America – can it continue to expand?**
- **Former Soviet Republics – political stability?**

The Future

- *Grain & oilseeds will be energy crops*
- Cellulose crops will compete with other ag production
- Global grain demand will increase modestly, next 2 to 3 years as economy recovers
- China may be modest corn importer
- Non-U.S. feedstuff sources will gradually expand supplies
- U.S. will see significant crop yield increases, helping to supply biofuels growth
- Prices will be volatile