

# Corn, Fuel Prices & the Distribution of Distillers' Grains from Ethanol

**Dr. Dennis M. Conley**

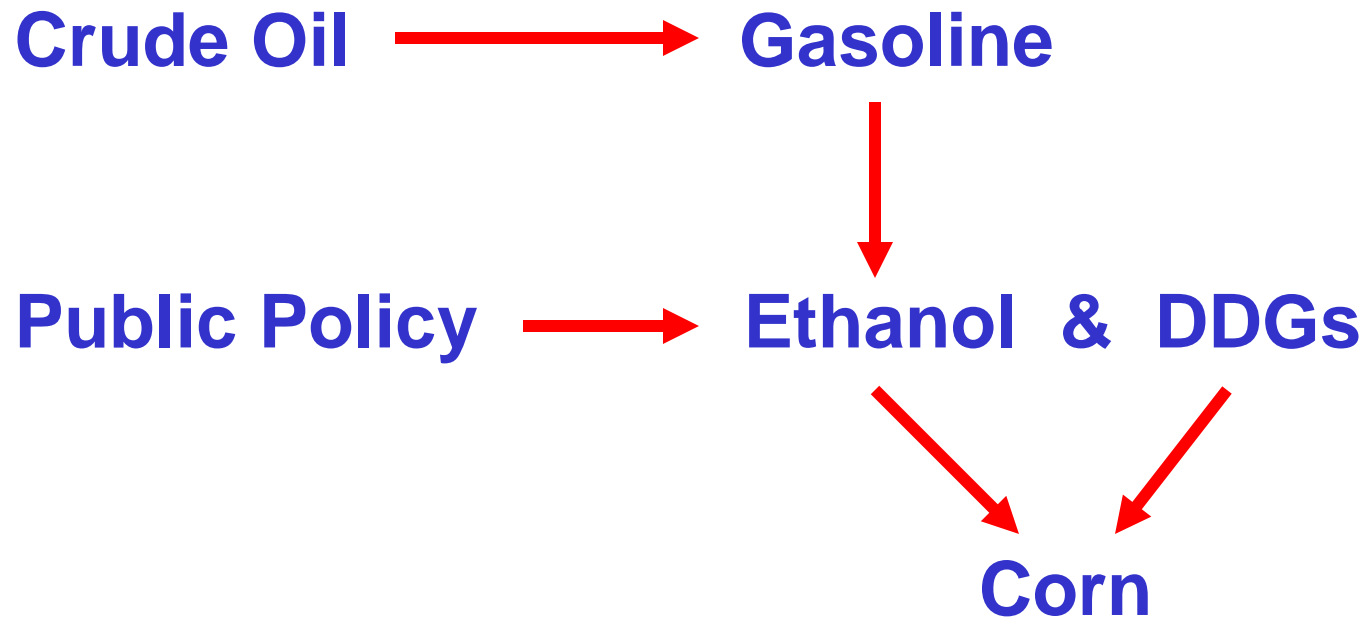
Selected Paper prepared for presentation at the 2010 WERA-72 Agribusiness Research Emphasizing Competitiveness and Profitability Meeting, Santa Barbara, CA, June 13-15, 2010.

Copyright 2010 by Dennis M. Conley. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.

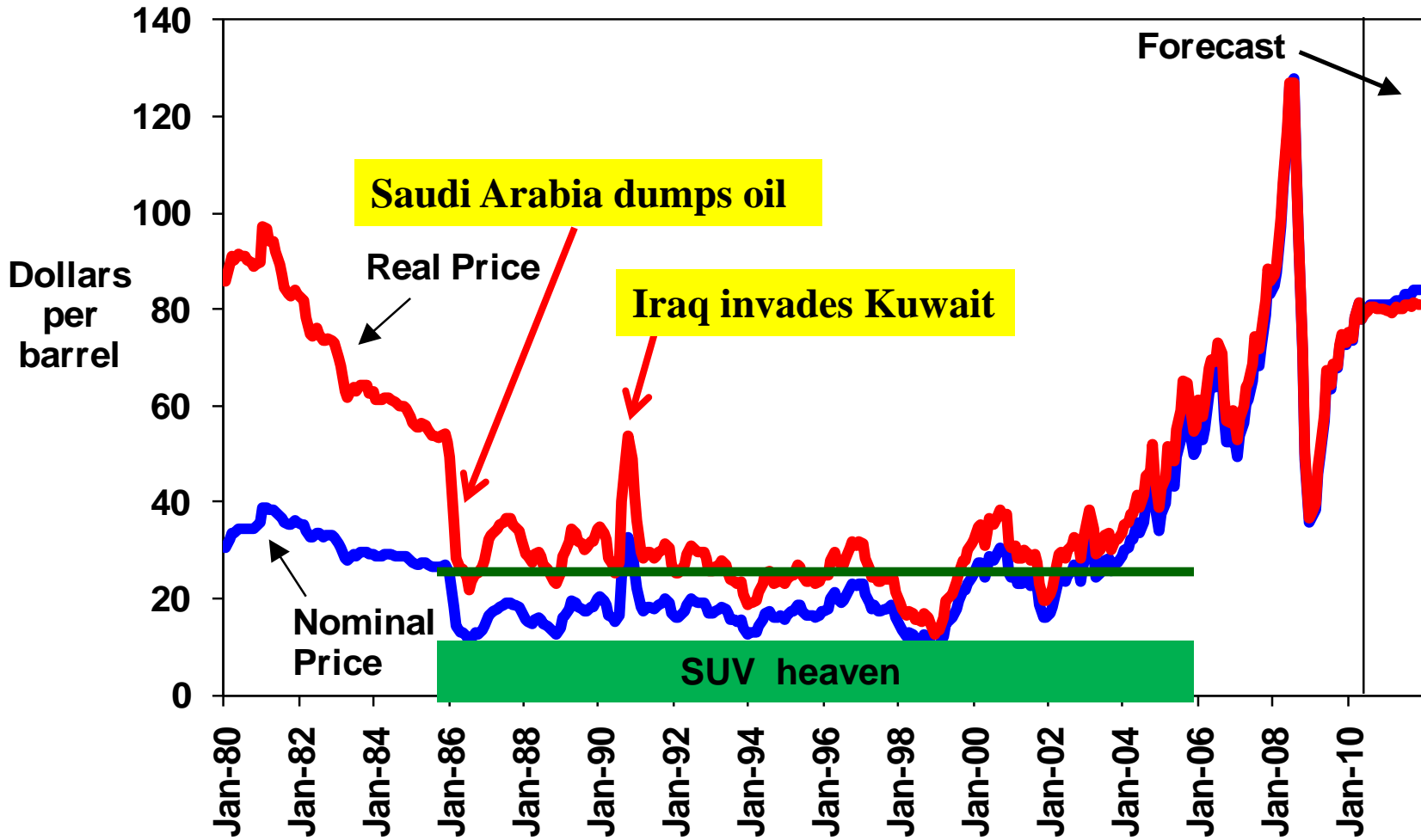
---

Nebraska Cooperative Council Distinguished Professor and Director, Graduate Program in Agribusiness, University of Nebraska – Lincoln, USA. MBA/Agribusiness graduate students contributing to the research: Ashley Bergthold, Rodney Ensz, Seth George, Ross Miller and Matt Weeder.

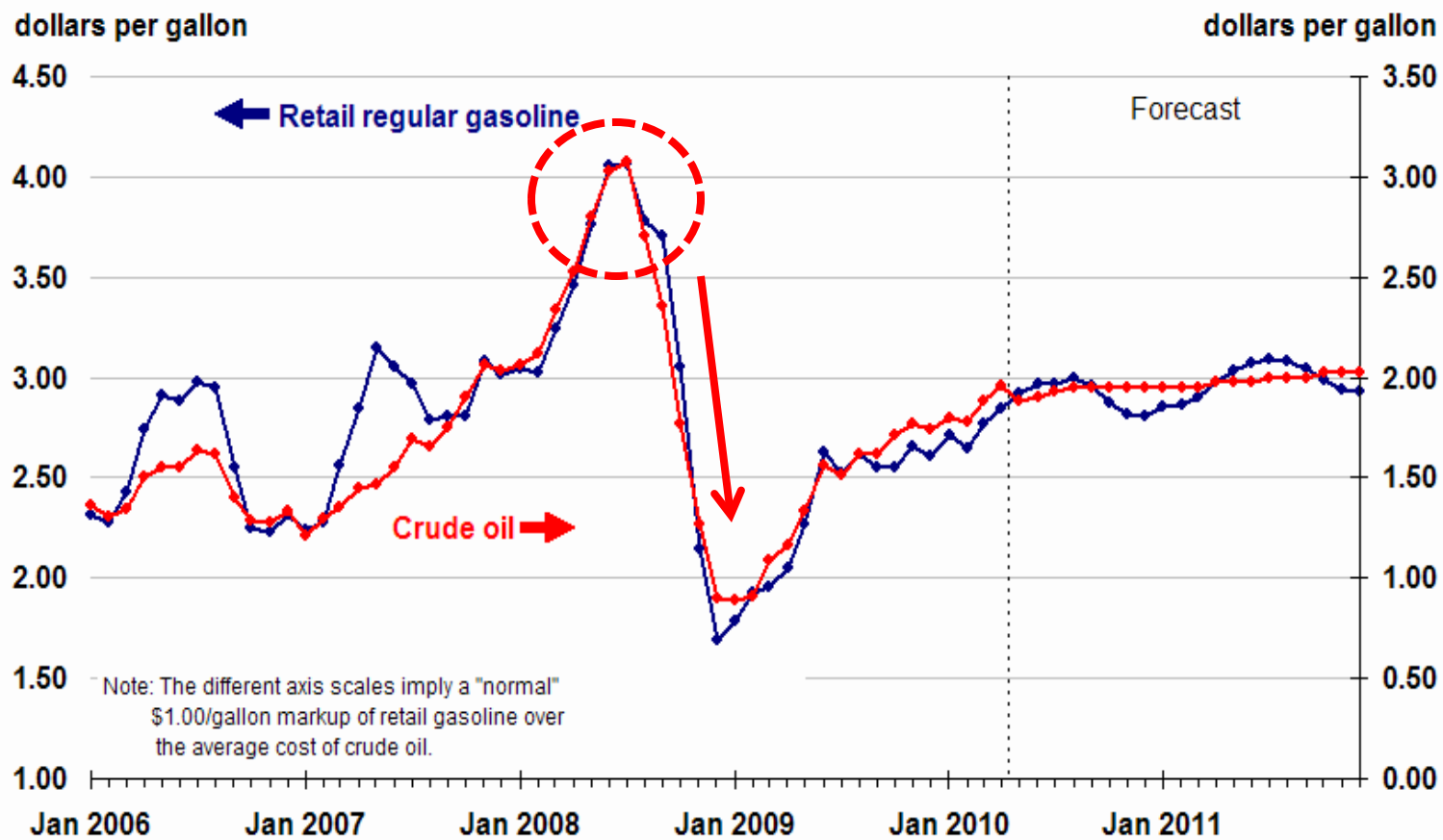
# ECONOMIC LINKAGES



## Imported Crude Oil Prices: Nominal and Real



## U.S. Gasoline and Crude Oil Prices

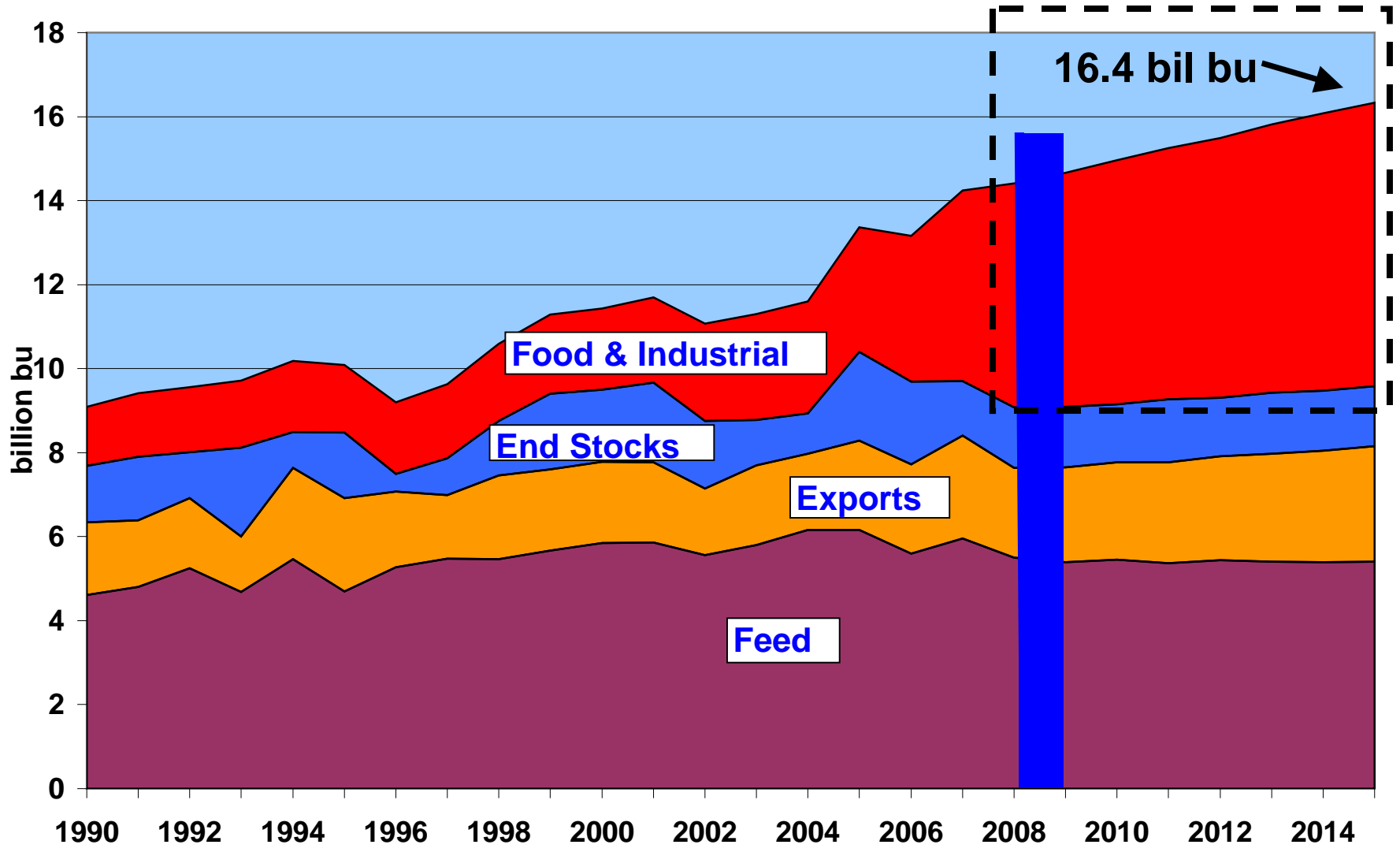


Note: Crude oil price is refiner average acquisition cost. Retail gasoline price includes State and Federal taxes.

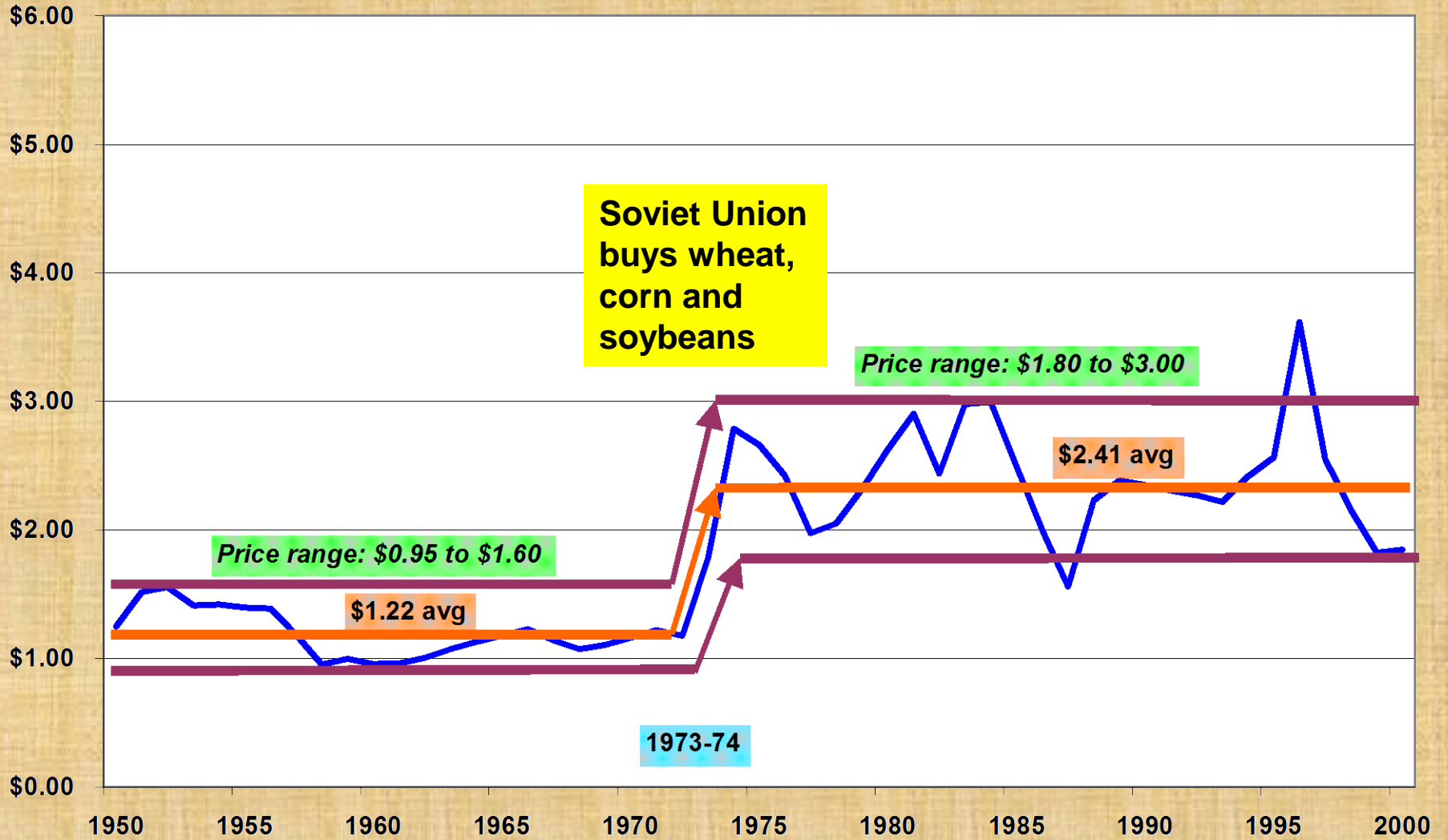
# **PUBLIC POLICY – December 2007**

- **Energy Bill was passed by Congress and signed by President Bush**
- **By 2022 – in 15 years - mandated Renewable Fuels Standard (RFS) is 36 billion gallons.**
- **By 2015 corn is eligible for 15.0 billion gals.**
- **By 2012 corn is eligible for 13.2 billion gals.**
- **Ethanol production reached 10.2 billion gallons in 2009.**

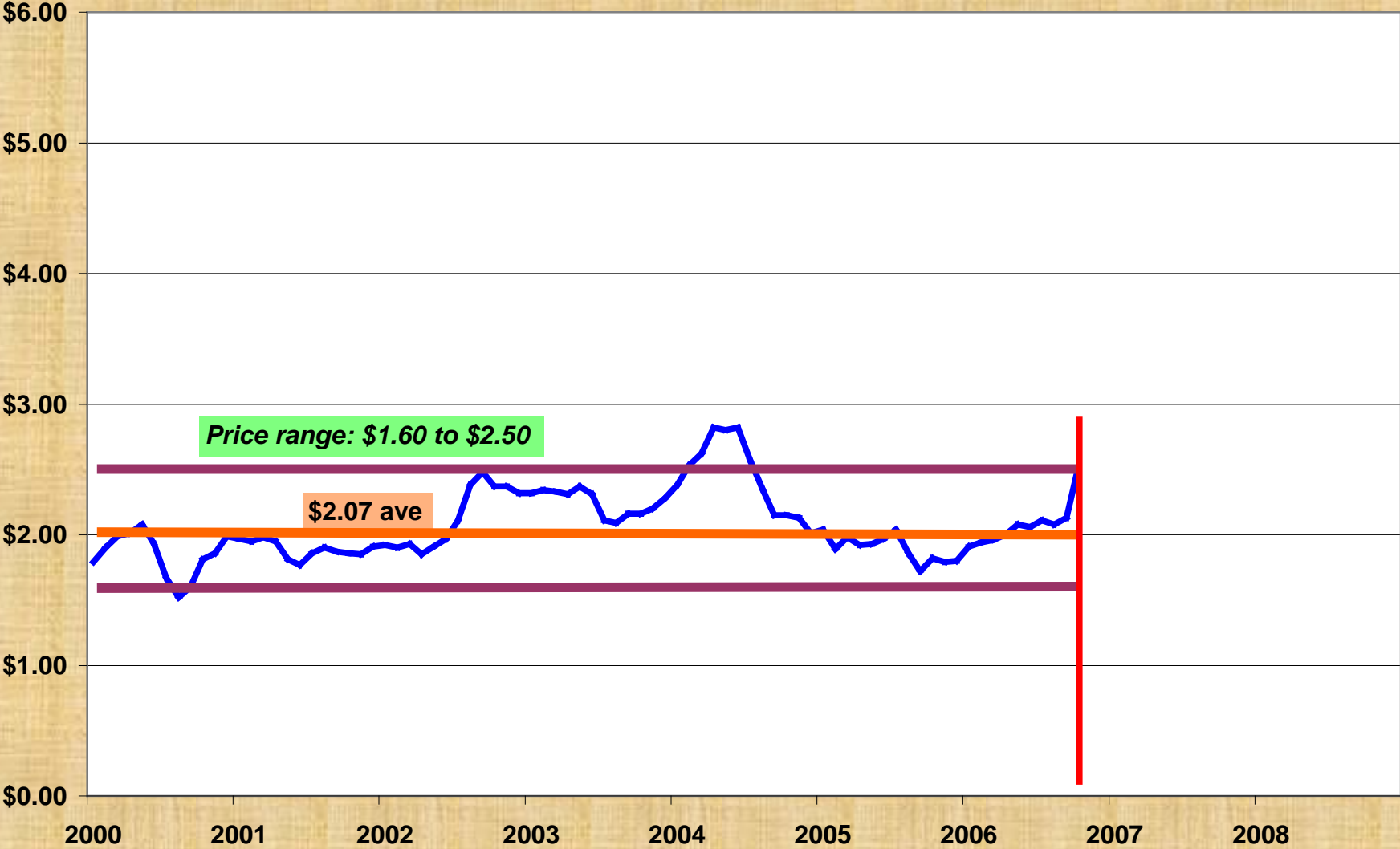
# U.S. Corn Utilization, 1990 - 2015



# Nebraska Corn Prices 1950 - 2000



# Nebraska Corn Prices 2000 - 2006

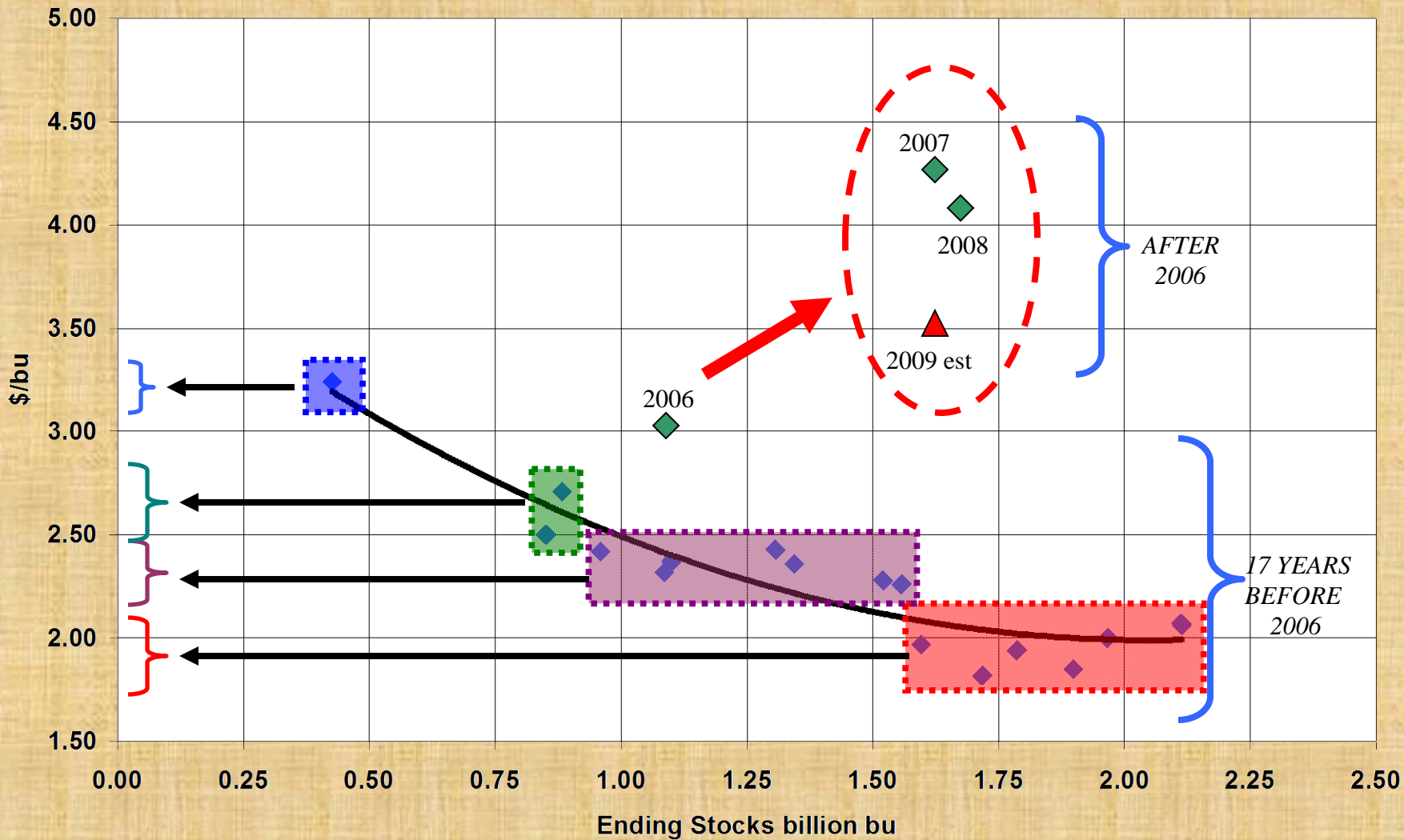




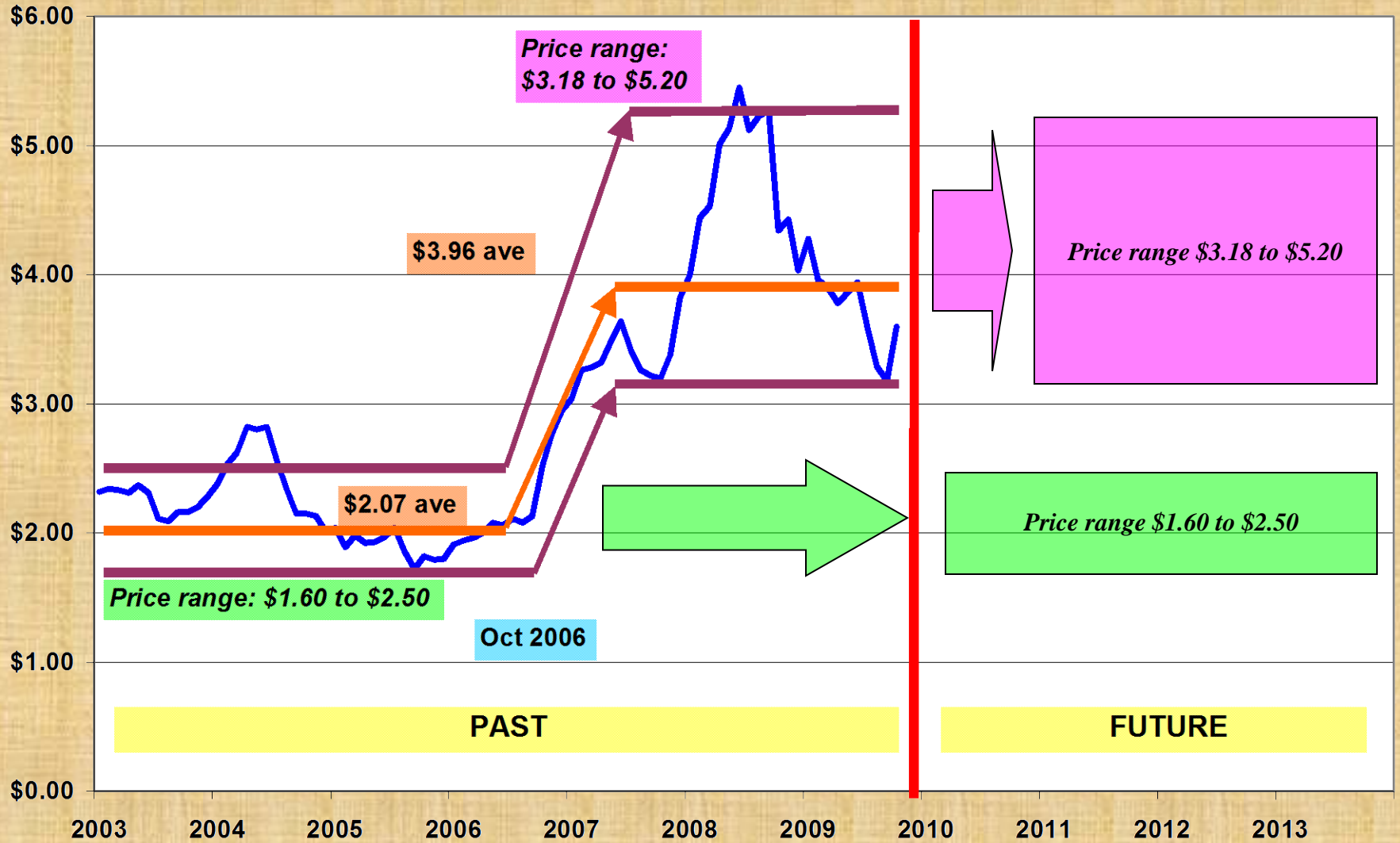
# Forecasting Corn Prices

- **Consistent behavior for 17 years from 1989 through 2005**
- **Price as a function of Ending Stocks**

Farm Price Recd vs Ending Stock, Corn 1989 - 2008

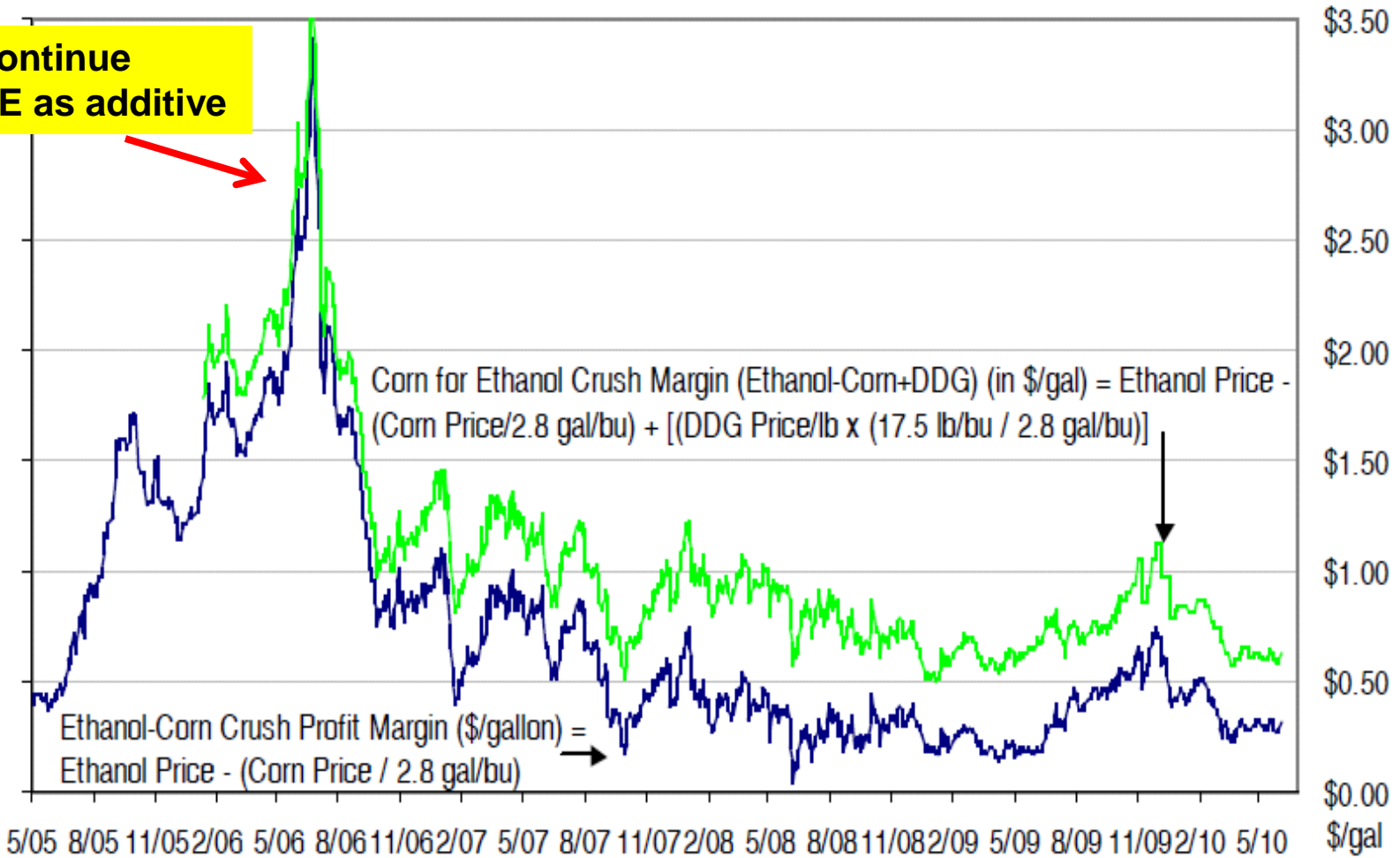


# Nebraska Corn Prices 2003 - 2013



# Spread: CBOT Ethanol-Corn and Ethanol-Corn+DDG Crush Margins (\$/gallon)

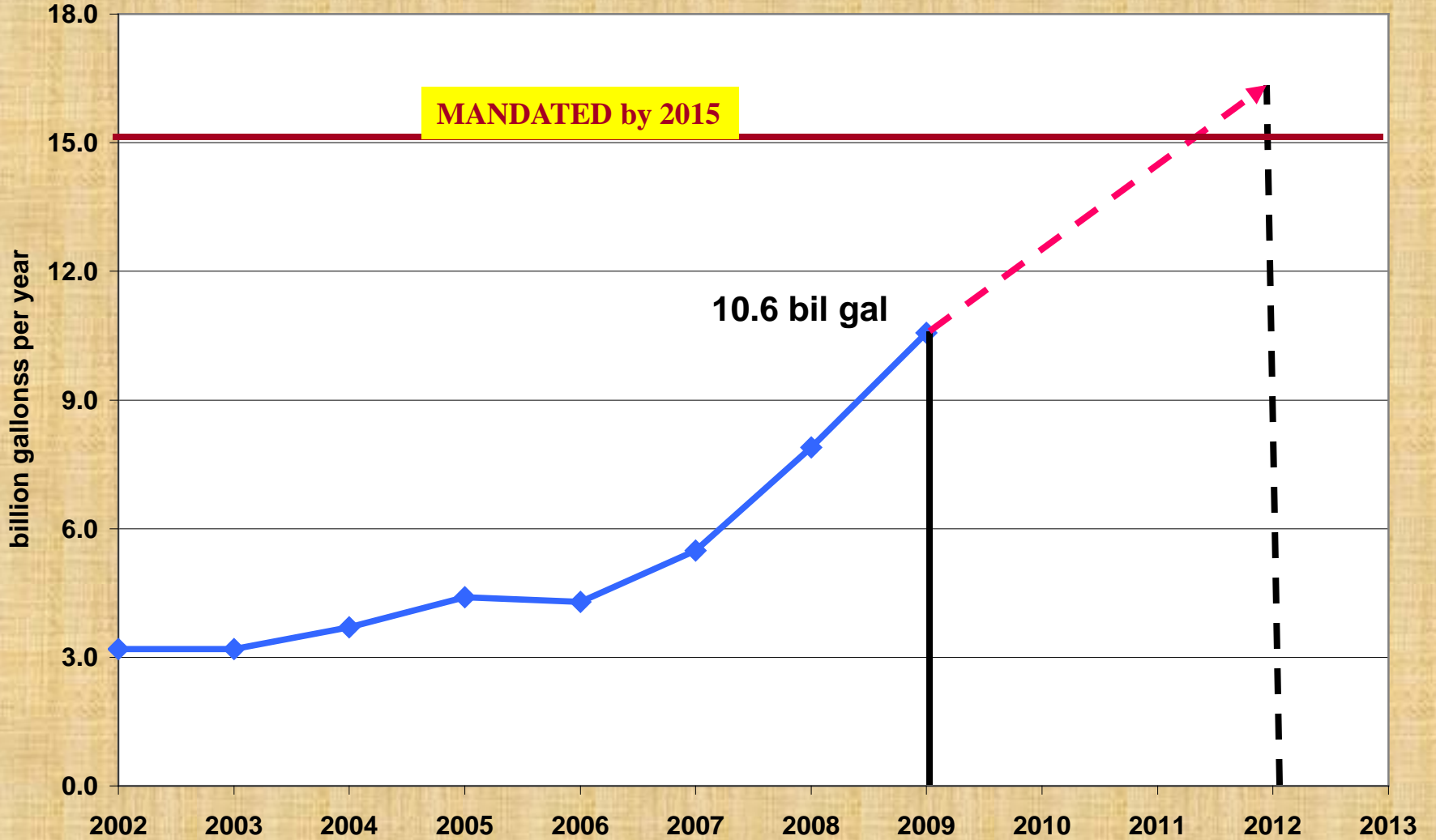
**Discontinue MTBE as additive**



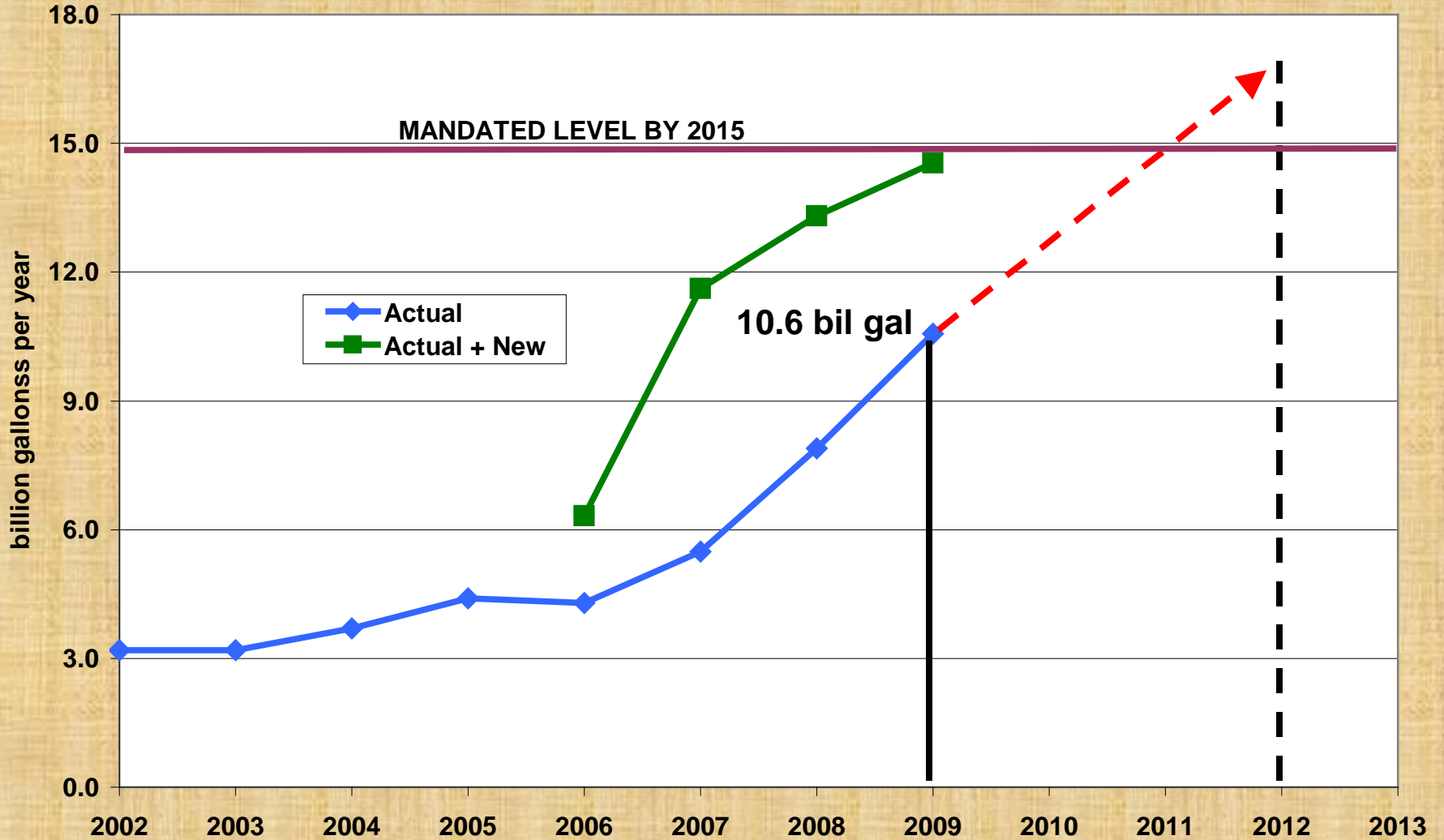
**“Gold Rush” period to build plants**

**Margins squeezed**

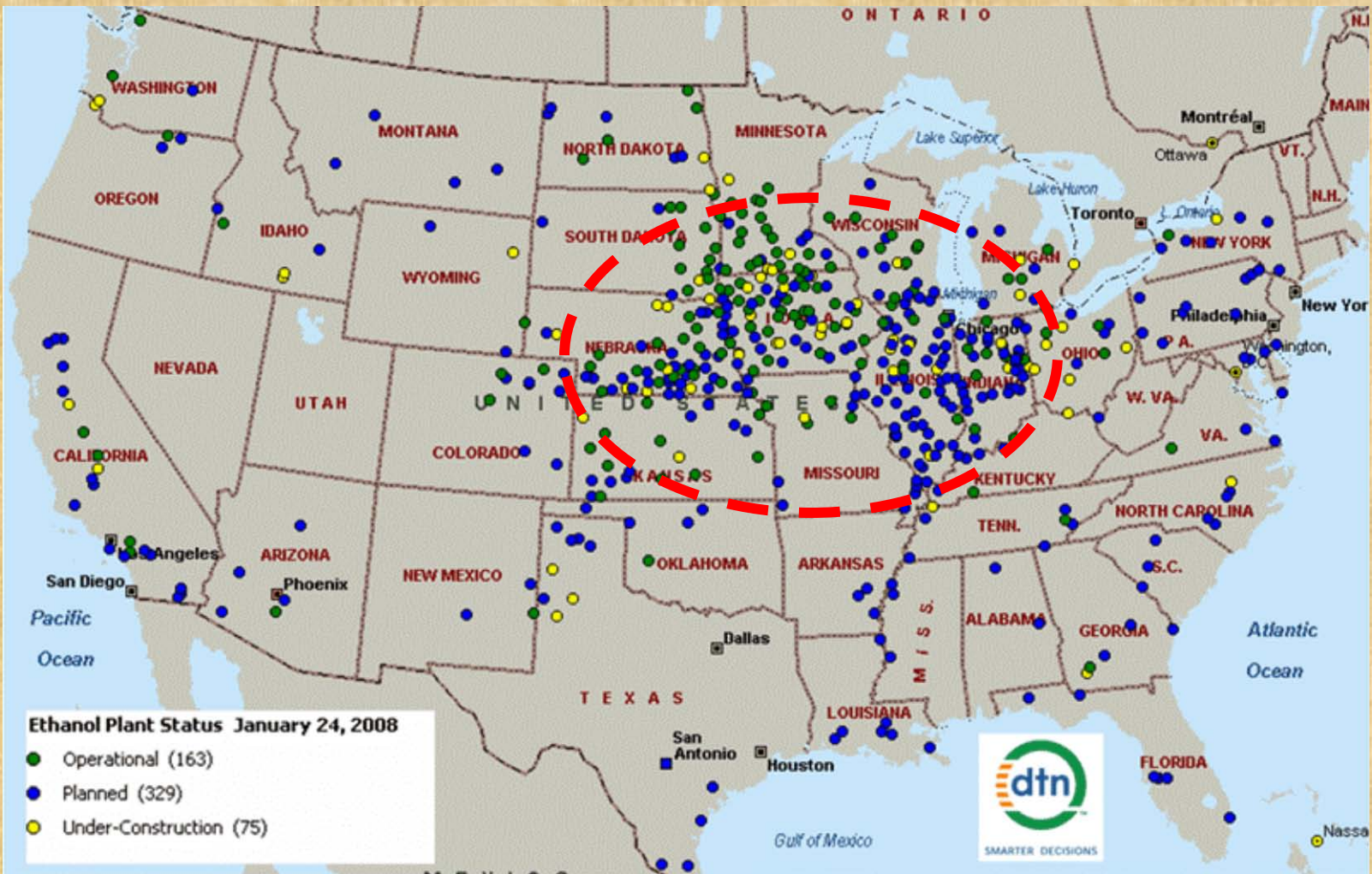
# Ethanol Production from Corn, 2002-09 & Projected



# Ethanol Production from Corn, 2002-09 & Projected

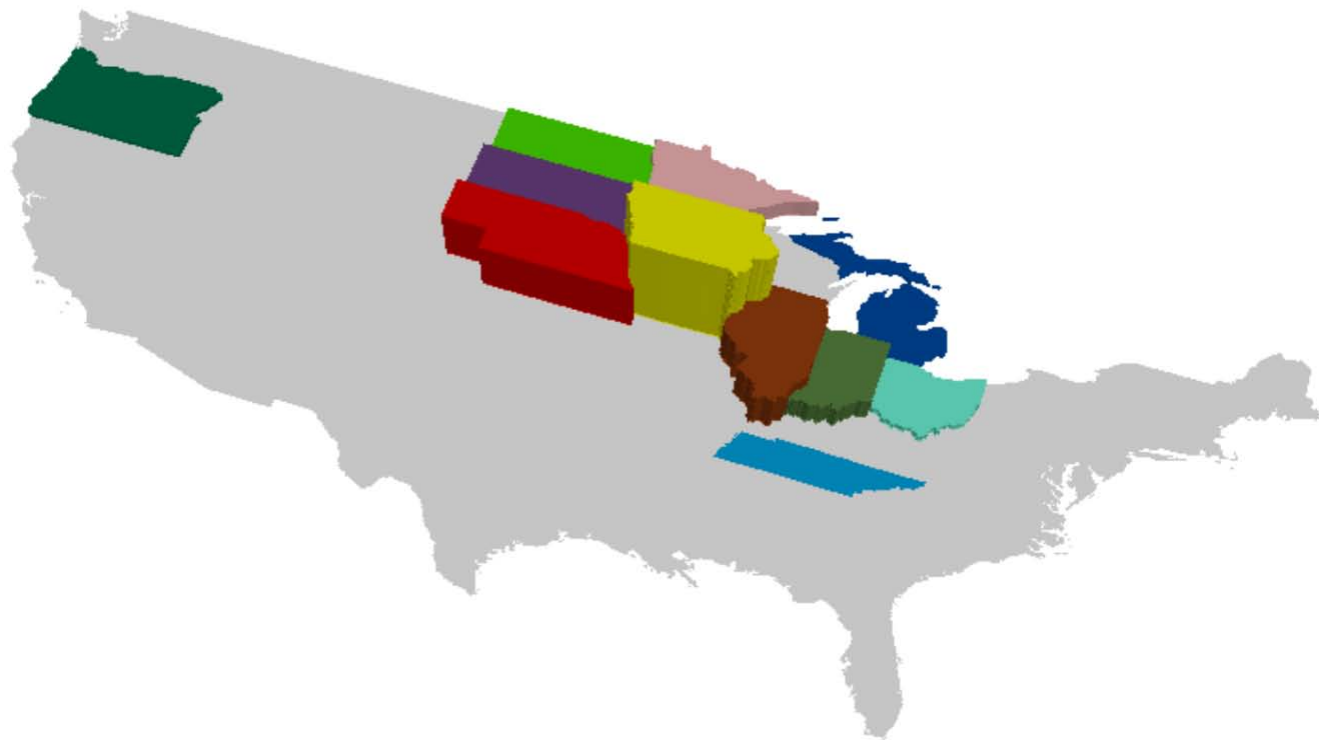


# Ethanol Plants



\*Alaska has one ethanol plant in the planning stage  
\*Hawaii has two ethanol plants in the planning stage

## Net Surplus States for Distillers Grains, 2008-09

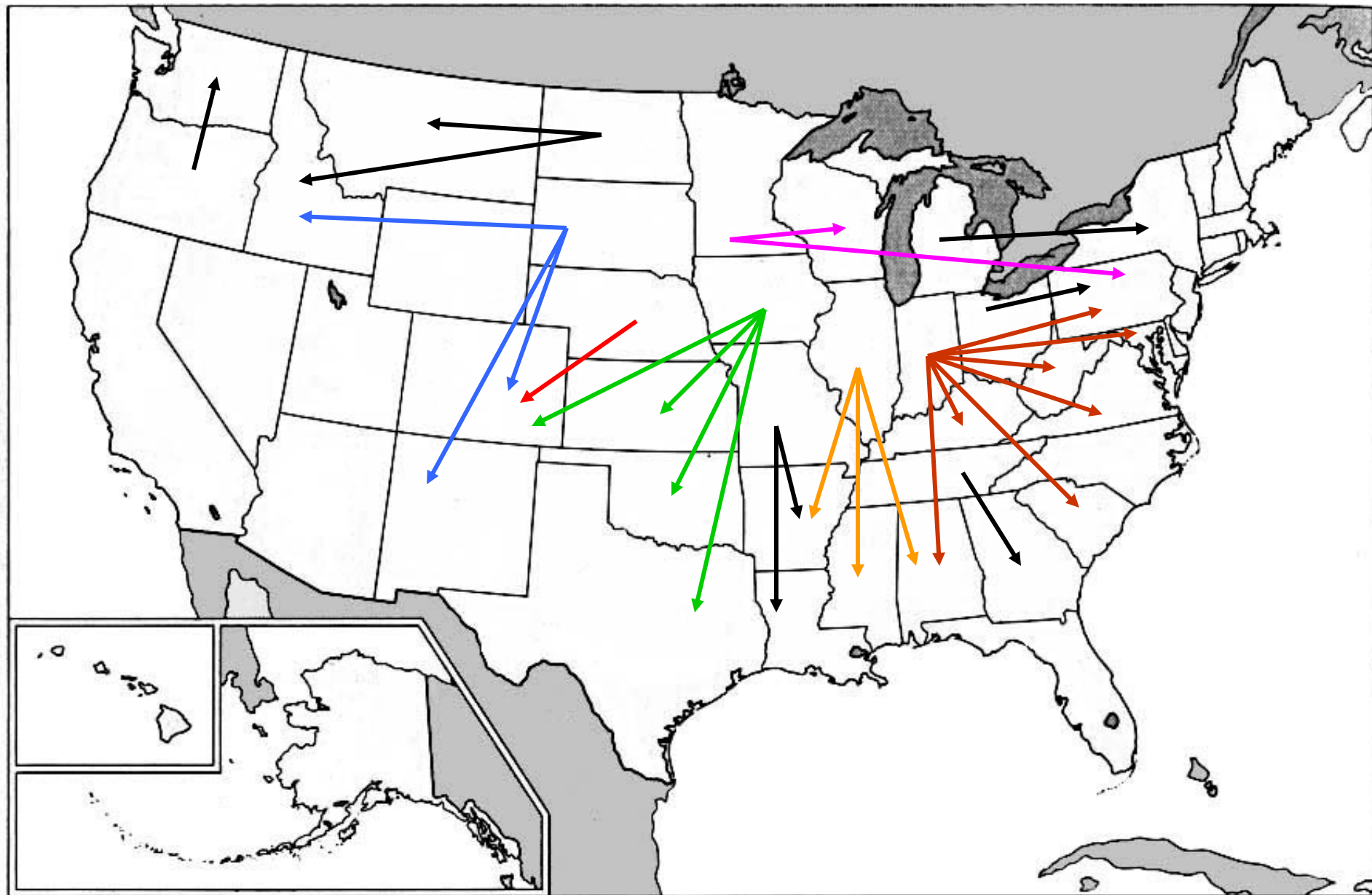




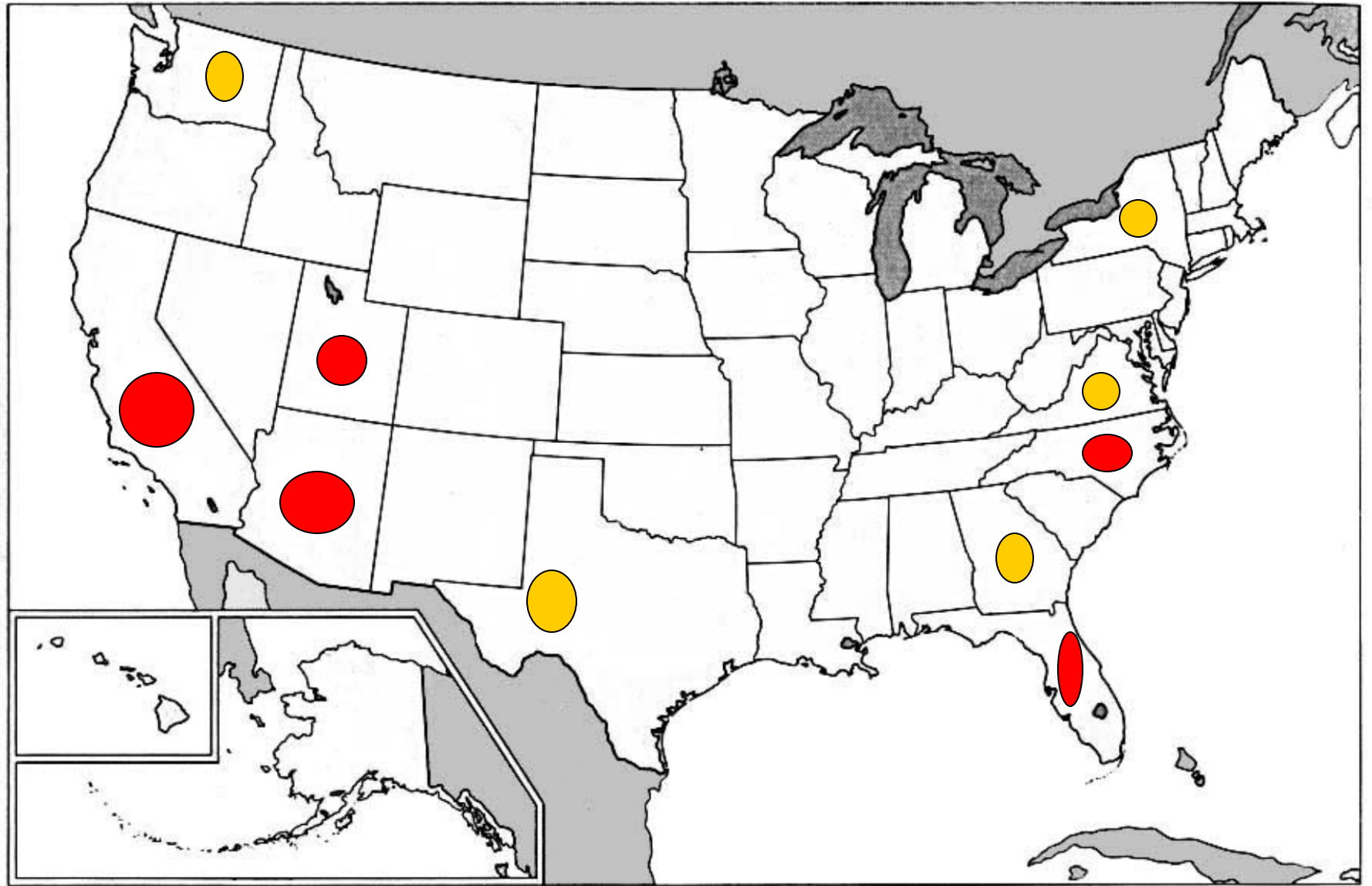
## Net Deficit States for Distillers Grains, 2008-09



# Estimated DDG Movements with Actual Production, 2009



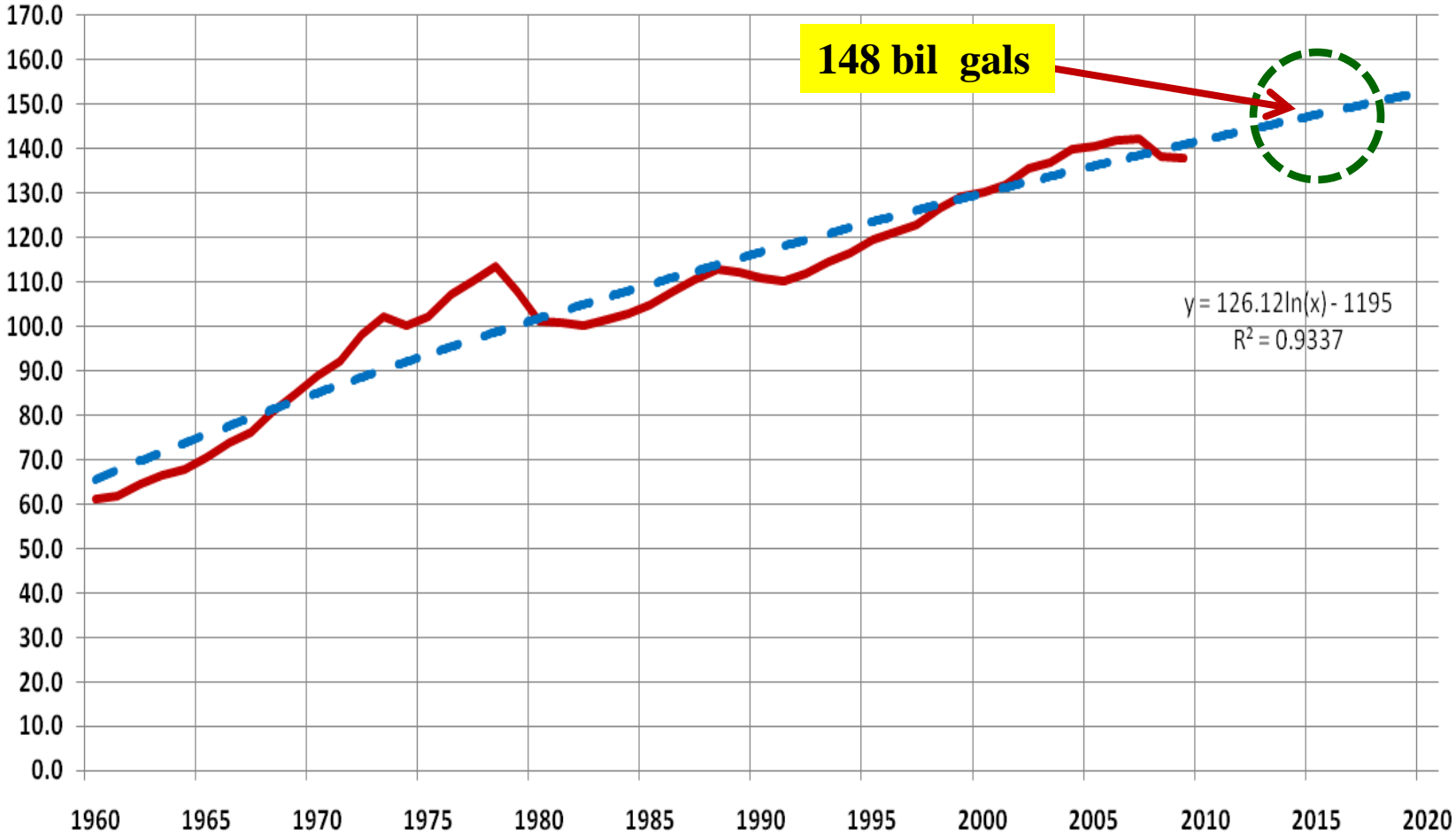
# Major States with Unmet Needs for DDGs



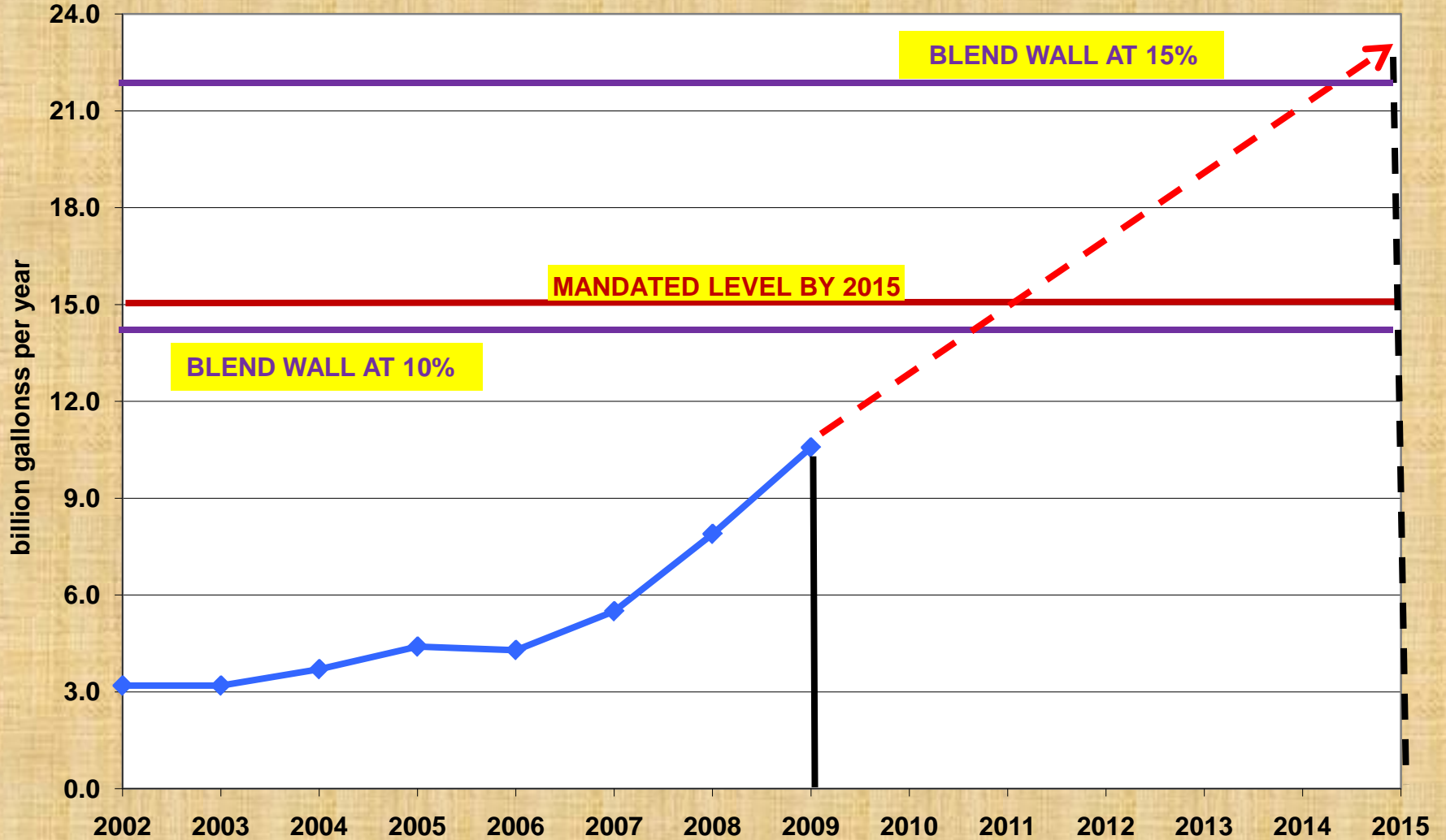
# PUBLIC POLICY – May 2010

- Mark Pearson: when you're talking about biofuels obviously E-15 is the first step. What are your feelings on that happening this year?
- Sec. Tom Vilsack, USDA: "Well, I -- I think that's going to happen. I think the question is, 'where's the cut-off, if there is a cut-off, in terms of vehicles that can and cannot be -- use E-15 effectively?'"
- Source: Market to Market TV show, June 4, 2010.

# U.S. Motor Gasoline Supplied (bil gals)



# Ethanol Production from Corn, 2002-09 & Projected



# CONCLUSIONS

- **The prices of crude oil and gasoline are higher and more volatile since 2006 because of global demand.**
- **The price of corn is higher by about \$2 since 2006 because of utilization for ethanol.**
- **The ethanol industry over the last 5 years has boomed then been squeezed by low margins.**
- **Profitability of ethanol production is now closely tied the cost of corn versus earlier the shortage of MTBE and the price of gasoline.**

# CONCLUSIONS

- **Structural changes in the bio-fuels and feed grain-livestock sectors will significantly alter traditional sources of corn and compel the adoption of DDGs for feed use.**
- **Approval of 15% blend in gasoline will gradually increase the production of ethanol.**
- **As a result, U.S. supply of DDGs will likely be in surplus leading to the development of an export market.**