

# Food Versus Fuel

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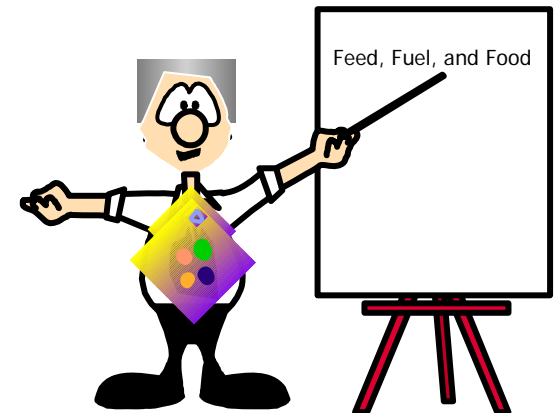
Houston Renewable Energy Network

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# Presentation Outline

- Draws from Recent AFPC Publications and Testimony
  - The Effects of Ethanol on Texas Food and Feed
  - Analysis of the Effects of Short Corn Crop Scenarios on the Likelihood of Meeting the Renewable Fuel Standard
  - Effects of Ethanol Production on US Gasoline Prices ([agforum.tamu.edu](http://agforum.tamu.edu))
  - Crop and Livestock Repercussions from Biofuels ([agforum.tamu.edu](http://agforum.tamu.edu))
  - Testimony before the U.S. Senate Energy Committee, June 12, 2008
- Food Prices
- Ag Economy
- RFS Waiver
- Other



# The Effects of Ethanol on Texas Food and Feed

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- Addresses Many Common Questions
  - Compiles research conducted over the past 3 years
  - From Texas A&M and other sources
- Basic Facts
  - Written for a diverse audience
- New Research
  - Food prices
  - RFS waiver

# Factors Affecting Food and Feed Prices

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- Strong global economic growth
- Weak dollar relative to many foreign currencies
- Recent crop problems (i.e. wheat)
- Increased volume of trading in commodities by funds
- Biofuels
- Higher energy prices

# Ethanol Breakeven Table

Corn Price (\$/bu, FOB)

Ethanol Price (\$/gal)	4.00	4.50	5.00	5.50	6.00	6.50	7.00
2.00	0.10	(0.04)	(0.18)	(0.31)	(0.45)	(0.59)	(0.73)
2.25	0.35	0.21	0.07	(0.06)	(0.20)	(0.34)	(0.48)
2.50	0.60	0.46	0.32	0.19	0.05	(0.09)	(0.23)
2.75	0.85	0.71	0.57	0.44	0.30	0.16	0.02
3.00	1.10	0.96	0.82	0.69	0.69	0.41	0.27

# Food Prices

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- Interested in Impacts of Corn, Oil, and Labor Prices
  - Corn used to evaluate ethanol impact
  - Oil – we think oil as an underlying cause of price changes
  - Labor is a large component of marketing bill
- Ex. Impact of corn price changes feeding through economy to impact the retail price of bread

# Method

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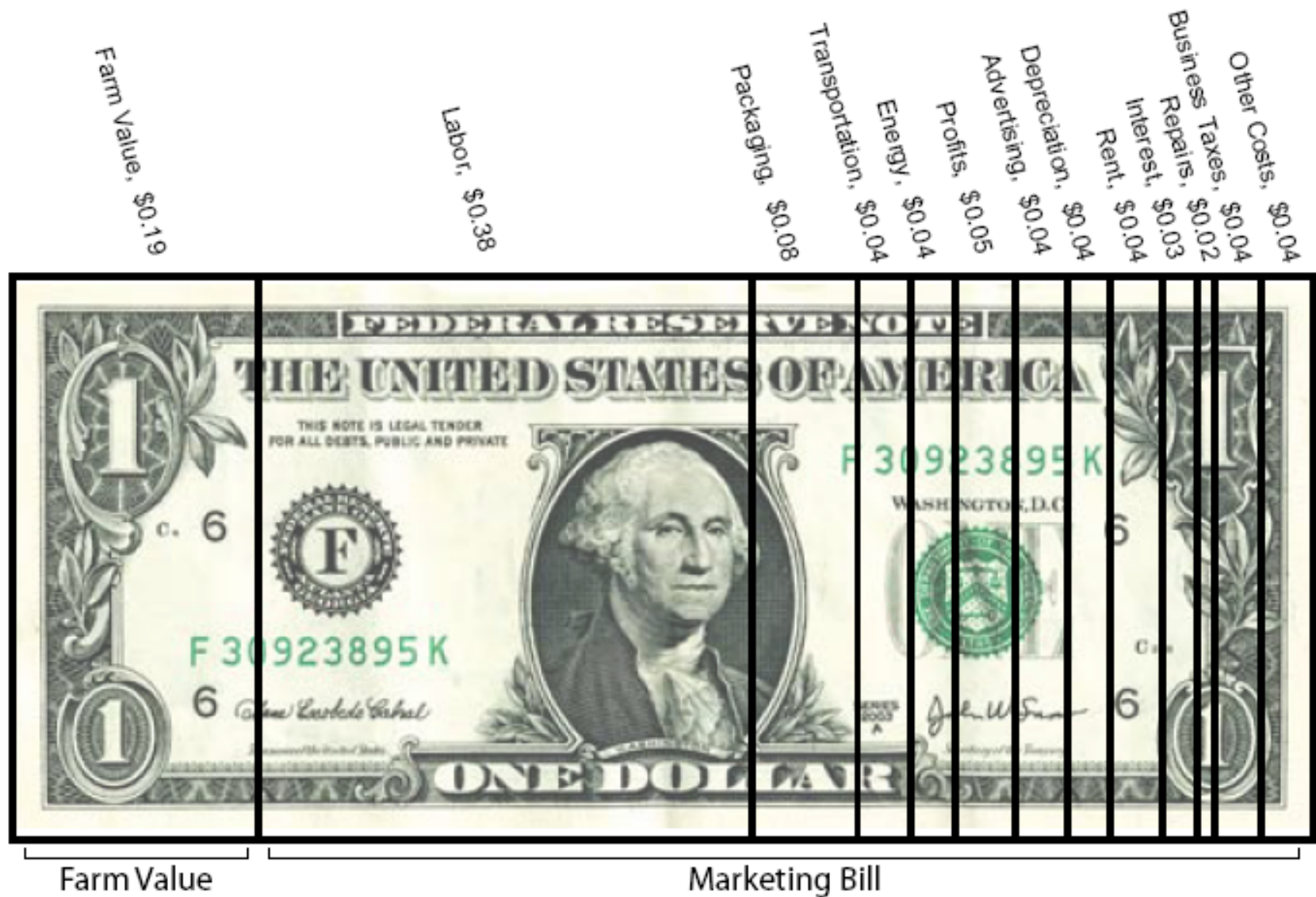
- Data from January 1990 to February 2008
- VAR Model
  - Time series method
  - How changes in one variable effects another
- Long-Run Equilibrium
  - What's the effect 24 months out
- Why Long-Run?
  - Get through the adjustment process
  - What's the effect after counter-shocks or reactions to changes occur

# What's Most Important

	Egg Price	Bread Price	Milk Price	Beef Price	Pork Price	Chicken Price	Lettuce Price	Tomato Price	Food-at-home CPI	Food-away-from-home CPI
<b>Due to Crude oil price</b>	-	-	-	-	-	-	-	-	-	0.1%
<b>Due to Labor price</b>	1.7%	1.9%	1.2%	-	0.6%	0.7%	1.2%	1.3%	0.4%	0.0%
<b>Due to Corn price</b>	6.4%	4.6%	4.0%	-	-	-	-	-	0.4%	-
<b>Due to Other Causes</b>	19.5%	5.2%	6.6%	-4.7%	-2.3%	1.4%	-4.9%	-11.4%	0.5%	0.2%
<b>Total</b>	<b>27.6%</b>	<b>11.7%</b>	<b>11.9%</b>	<b>-4.7%</b>	<b>-2.9%</b>	<b>2.1%</b>	<b>-3.7%</b>	<b>-10.1%</b>	<b>1.3%</b>	<b>0.4%</b>



# Should We Be Surprised?



# Farm Value in Retail Food Value

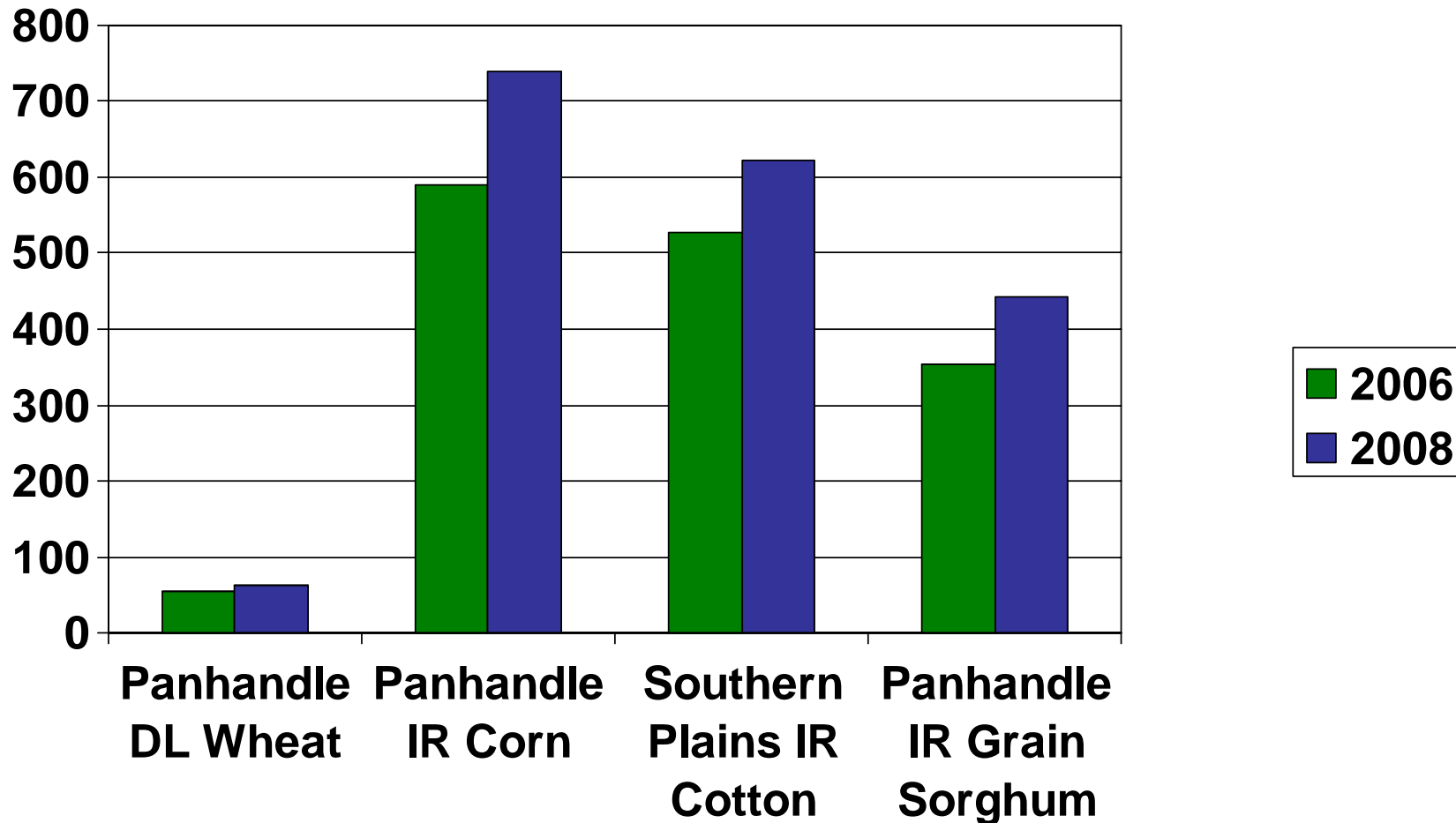
<b>Farm Commodity</b>	<b>2004 Farm Price</b>	<b>2007 Farm Price</b>	<b>Retail Product</b>	<b>Farm Cost of Retail Product in 2004</b>	<b>Farm Cost of Retail Product in 2007</b>
<b>Corn</b>	\$2.06/bu	\$4.00/bu	HFCS in Soda	\$0.115/12-pack	\$0.222/12-pack
<b>Cotton</b>	\$0.416/lb	\$0.535/lb	Dress Shirt	\$0.26/shirt	\$0.33/shirt
<b>Wheat</b>	\$3.40/bu	\$6.65/bu	Loaf of Bread	\$0.05/loaf	\$0.09/loaf
<b>Wheat</b>	\$3.40/bu	\$6.65/bu	Donuts	\$0.056/dozen	\$0.109/dozen
<b>Milk</b>	\$16.13/cwt	\$19.15/cwt	Gallon of Milk	\$1.38/gallon	\$1.65/gallon
<b>Steer</b>	\$0.8451/lb	\$0.9296/lb	Pound of Beef	\$0.8451/lb	\$0.9296/lb
<b>Hog</b>	\$0.51/lb	\$0.48/lb	Pound of Pork	\$0.51/lb	\$0.48/lb

# Ag Production Costs

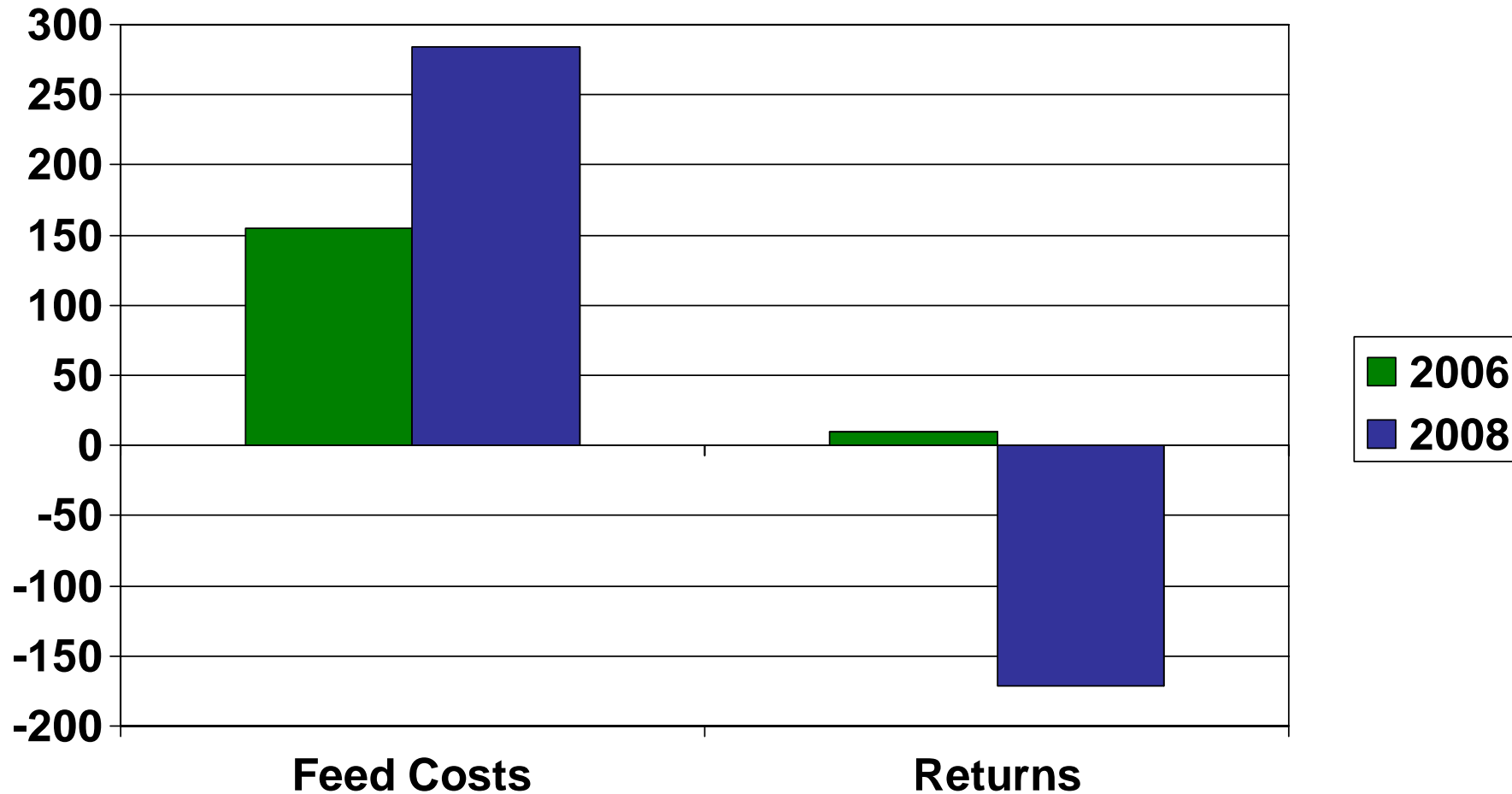
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- Costs Are Higher For Crop Production
  - Fertilizer, fuel
- Higher For Livestock Too
  - Feed, Fuel

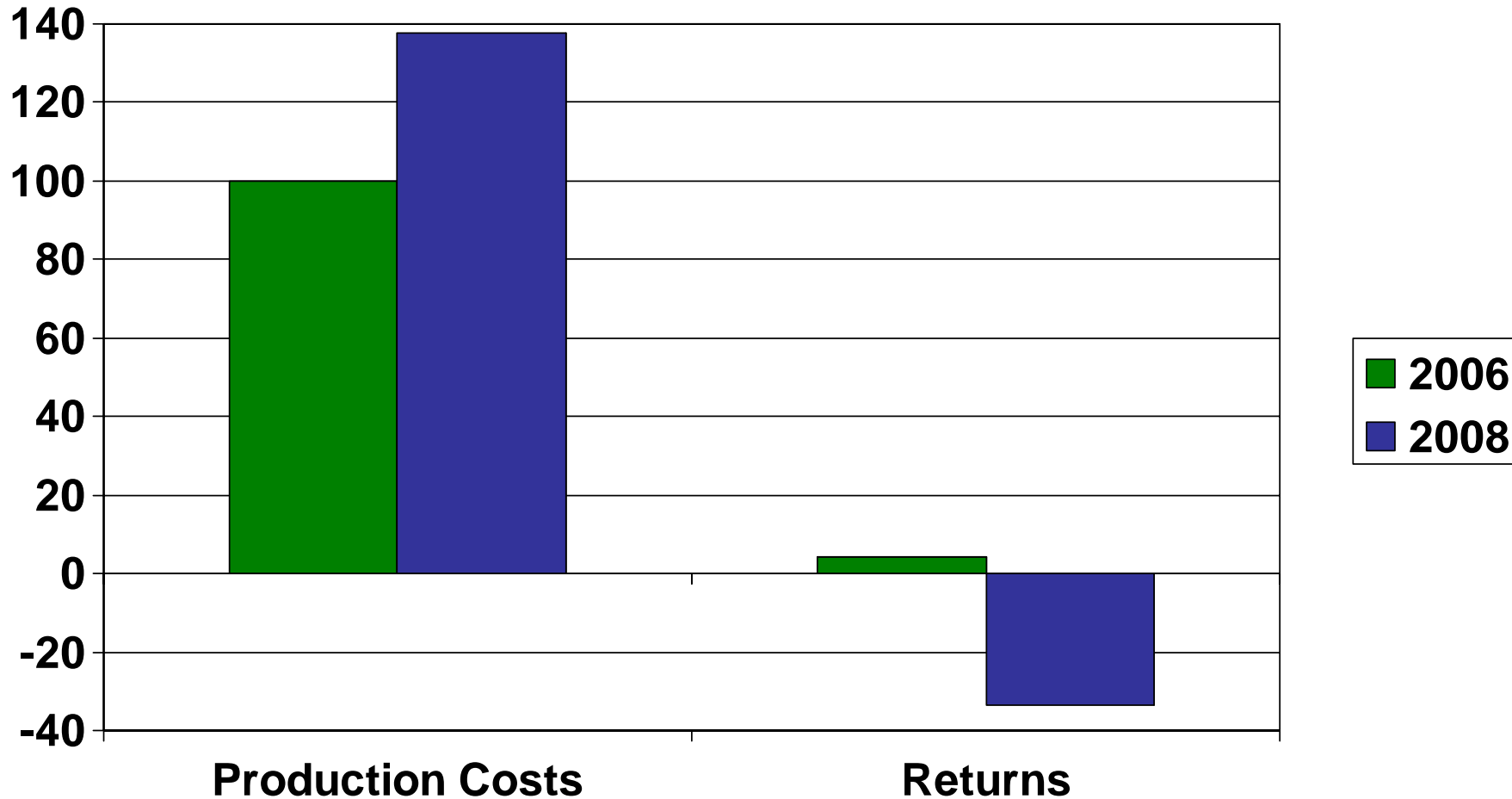
# Ag Production Costs/Acre



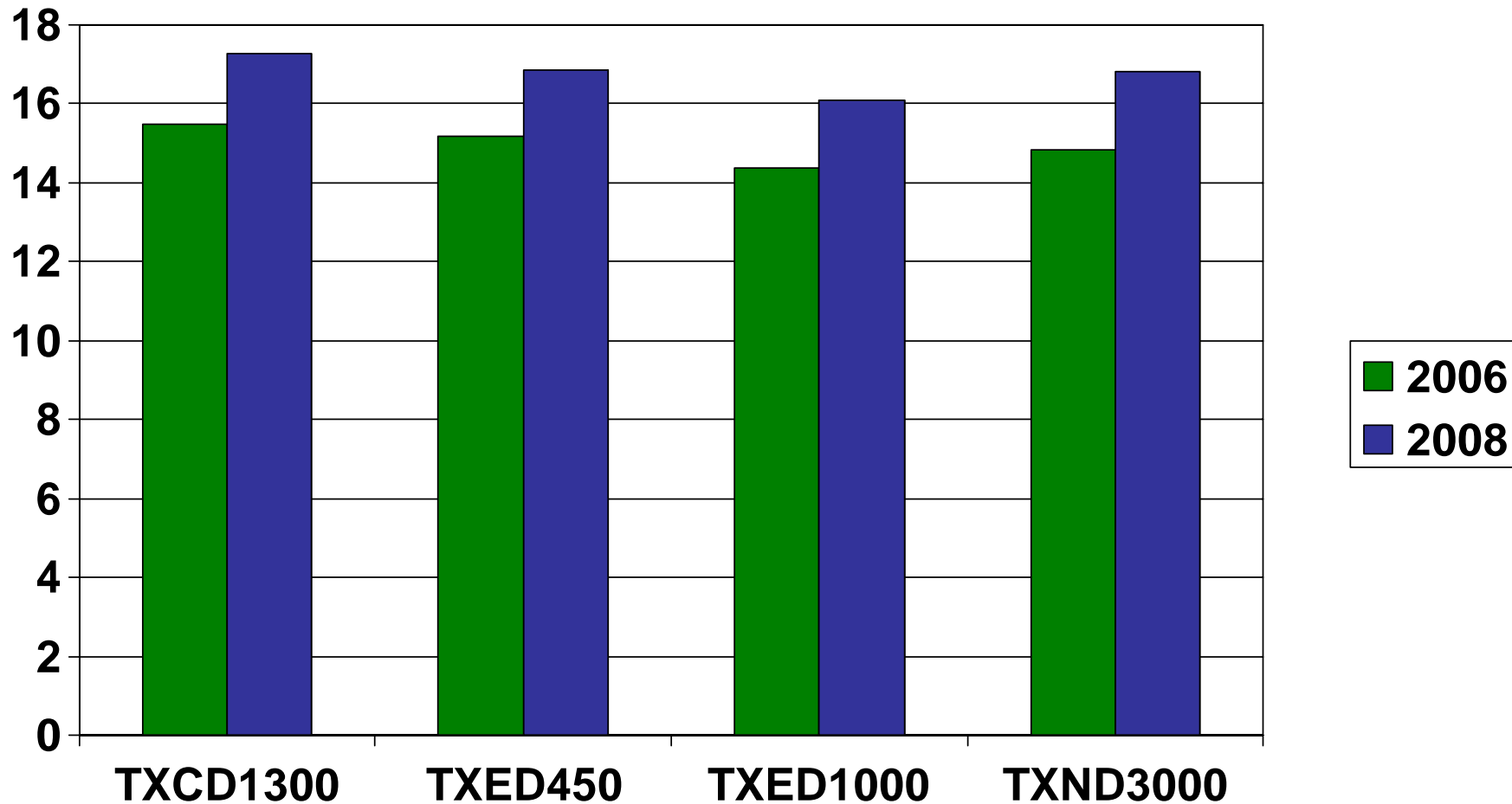
# Cattle Feeding Costs and Returns Per Head



# Hog Finishing Costs and Returns Per Head



# Milk Production Costs Per CWT



# Local Source DDGS

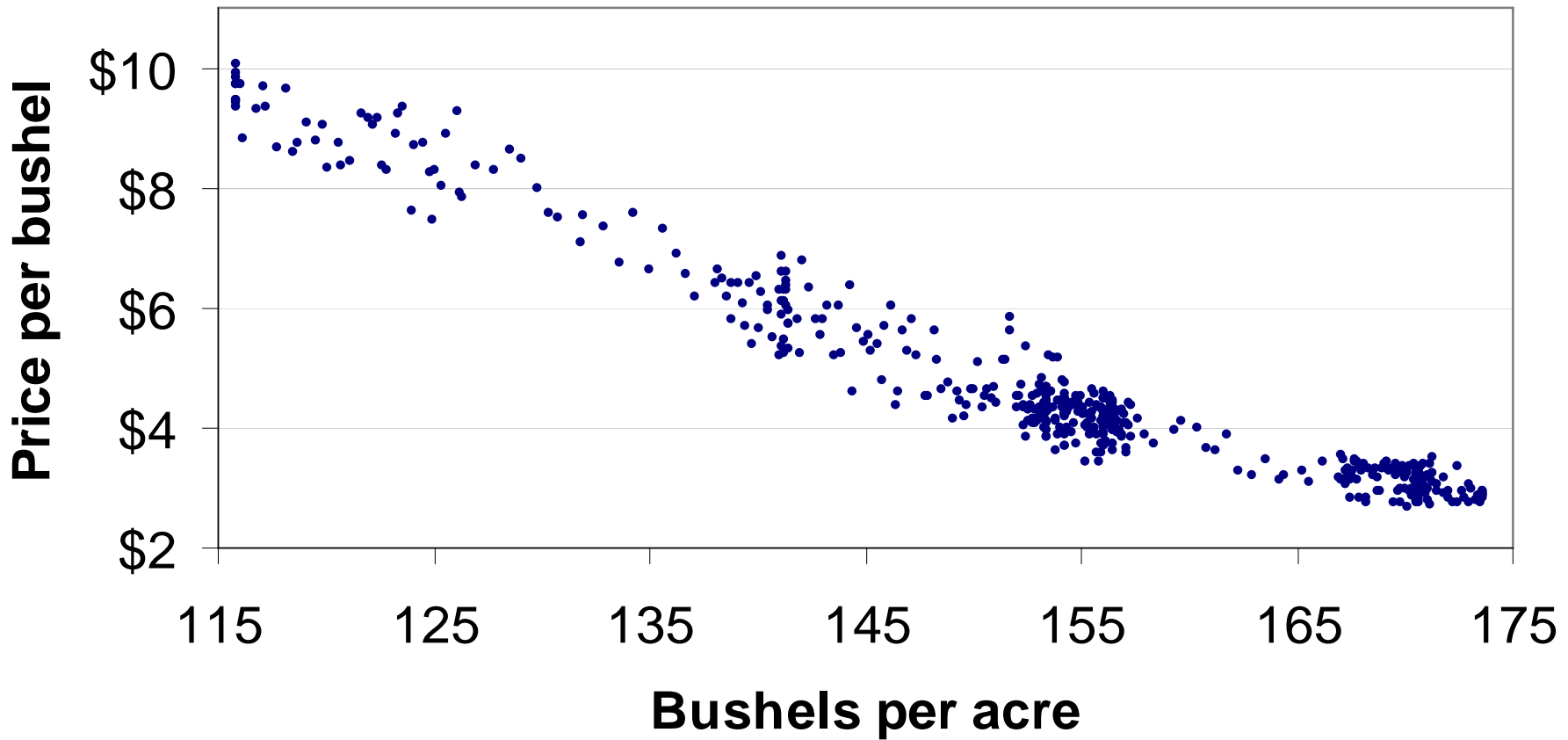
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- Feed Market More Integrated With Corn
- Local DDGS, Reduced Hauling Costs
  - But, National feed market
  - Buy less corn, but feed costs high
- Reduced Costs of Gain From Feeding WDGS
  - Local sources allow more economical feeding of WDGS



# Corn Price Volatility

**Scatter Plot of Possible Price and Yield Combinations in 2008**



# Corn Price Volatility

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- Wide Range of Prices Based on Historical Yields
  - From \$3.00 to \$10+
- Very Little Change in Yield Required to Sharply Increase Prices

# Economic Impact

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- Positive Benefits of Feedgrains
  - Higher prices
- Negative Impact on Livestock Feeding
- On Balance, Negative Net Impact
- Since initial report have looked at economic impact of ethanol plants
  - Depends on where corn comes from local vs out of state

# Economic Impact

	Direct*	Indirect*	Induced*	Total*
	(Millions of Dollars)			
<b>Total Output Effects</b>				
Grains	1,099.8	497.8	395.0	1,992.6
Cattle	(799.5)	(811.1)	(184.8)	(1,795.5)
Poultry	(420.9)	(162.7)	(104.3)	(687.9)
Swine	(60.2)	(39.3)	(12.4)	(111.9)
Livestock Effects	(1,280.6)	(1,013.2)	(301.5)	(2,595.3)
<b>Crop and Livestock</b>	<b>(180.8)</b>	<b>(515.4)</b>	<b>93.5</b>	<b>(602.6)</b>
<b>Total Value Added Effects</b>				
Grains	110.0	451.3	149.5	710.8
Cattle	(80.0)	(328.1)	(108.7)	(516.7)
Poultry	(42.1)	(172.7)	(57.2)	(272.0)
Swine	(6.0)	(24.7)	(8.2)	(38.9)
Livestock Effects	(128.1)	(525.5)	(174.1)	(827.6)
<b>Crop and Livestock</b>	<b>(18.1)</b>	<b>(74.2)</b>	<b>(24.6)</b>	<b>(116.8)</b>

# RFS Waiver

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- Waivers are strictly national; can be partial
- Expected ethanol production is greater than the new “Conventional Biofuels” RFS, especially after 2008
- The probability of the RFS binding would be reduced somewhat by a partial waiver
- Expect high corn prices – with or without a partial waiver
  - A short corn crop will significantly increase corn prices
  - RFS would be binding

# Conclusions

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- Underlying all of Agriculture is Higher Costs
- Corn has had Little to do With Higher Food Prices, overall
  - Some items price increases can be attributed to corn
- Fundamental Supply/Demand Relationships Matter
- High Potential for Higher Corn Prices Exists

# Conclusions

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- The Livestock Industry has Borne the Costs of Higher Corn Prices
  - Unable to pass on those costs either higher or lower
  - Industry in the middle of transition, prices not passed on, **Yet**