

The ACRE Decision

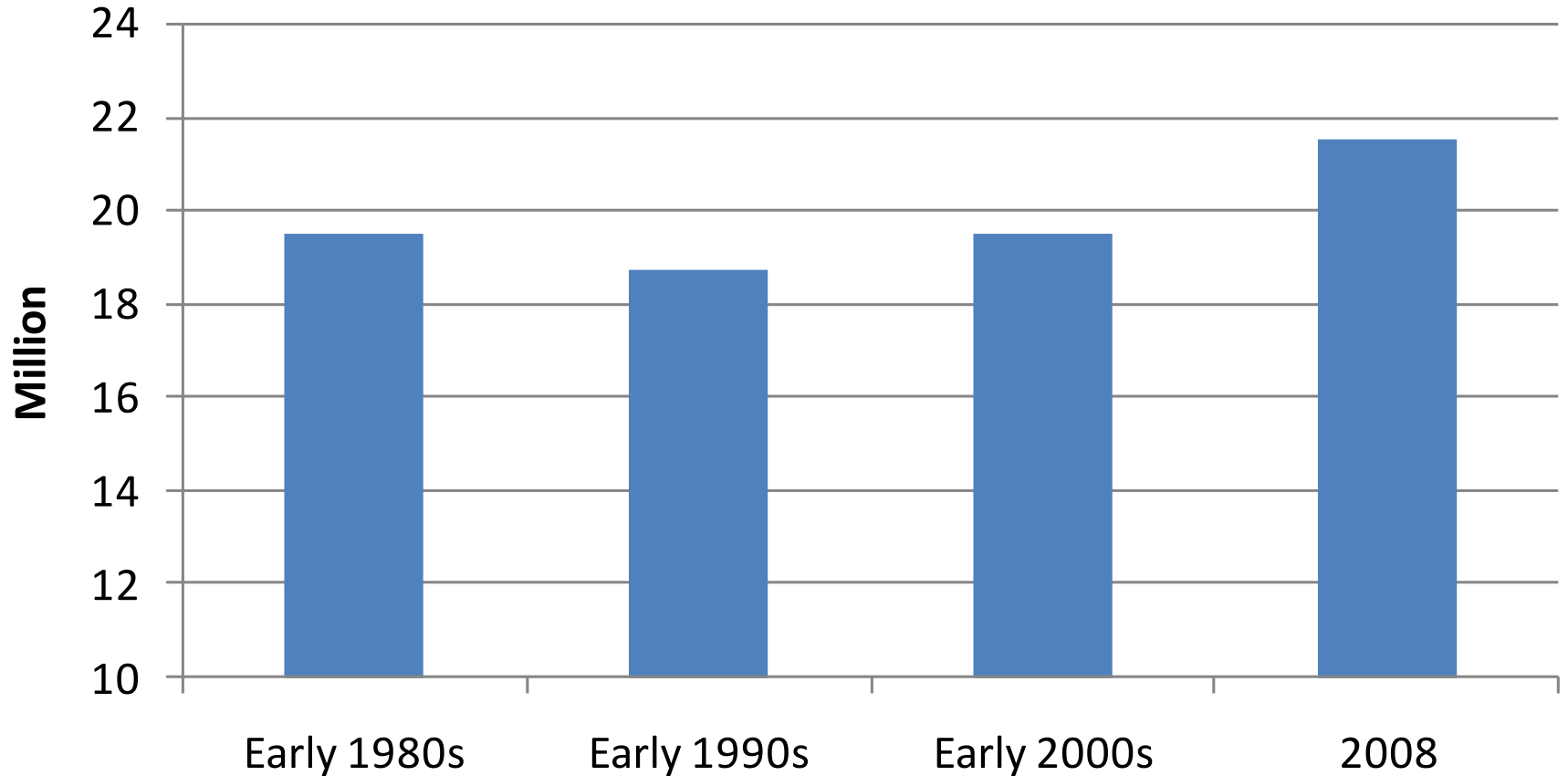
Bruce A. Babcock
Iowa State University

Presented at the North Dakota Corn Growers Association Annual Convention. Fargo, ND. February 11, 2009

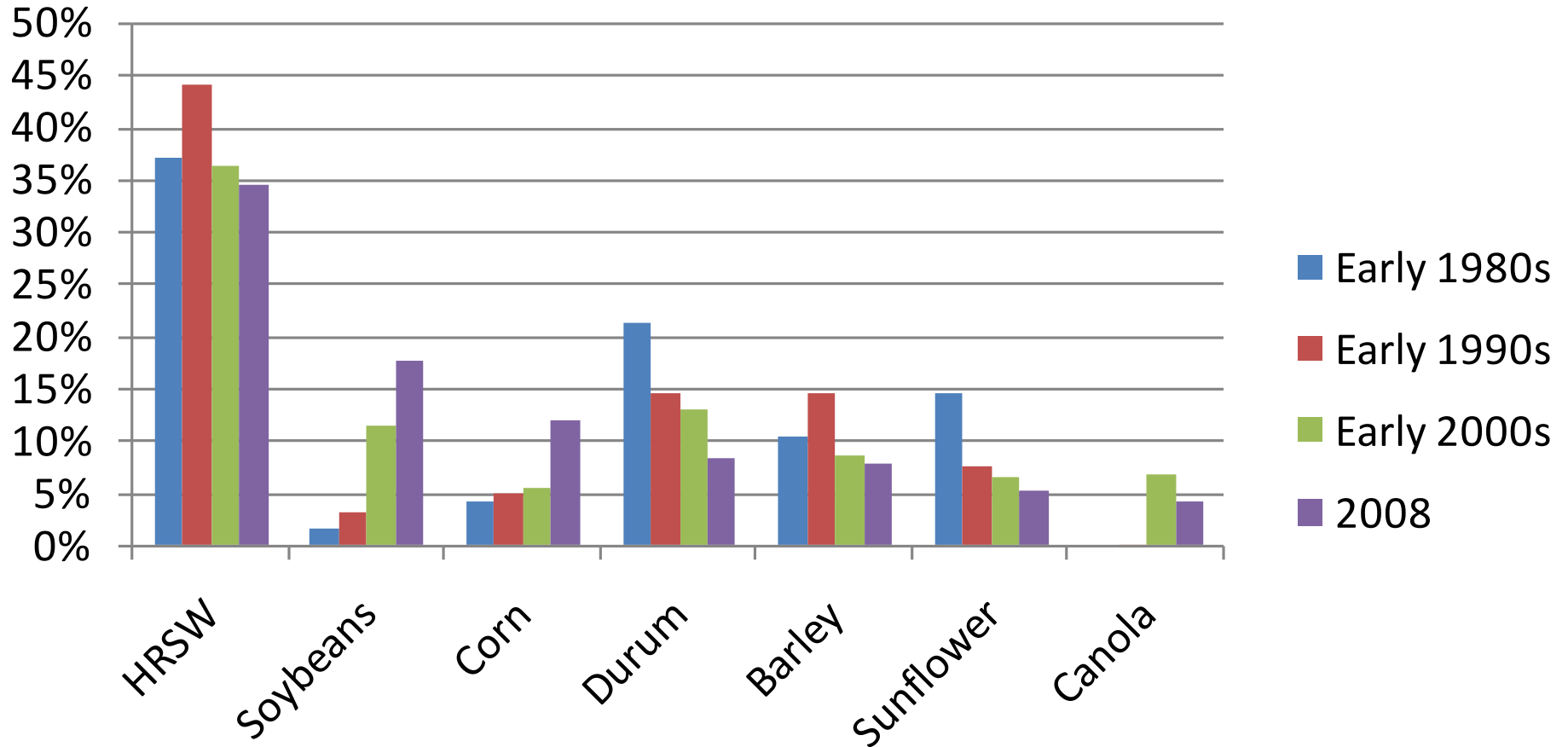
Overview of ACRE (Average Crop Revenue Election)

- Farmers who choose ACRE
 - Must do so for all program crops
 - Must do so for remainder of farm bill (2012 crop)
 - Lose eligibility for countercyclical payments
 - Must give up 20% of direct payments
 - Have a 30% lower loan rate
 - Get a state revenue guarantee based on 2007/08 prices and 2004 – 2008 yields

North Dakota Planted Acreage



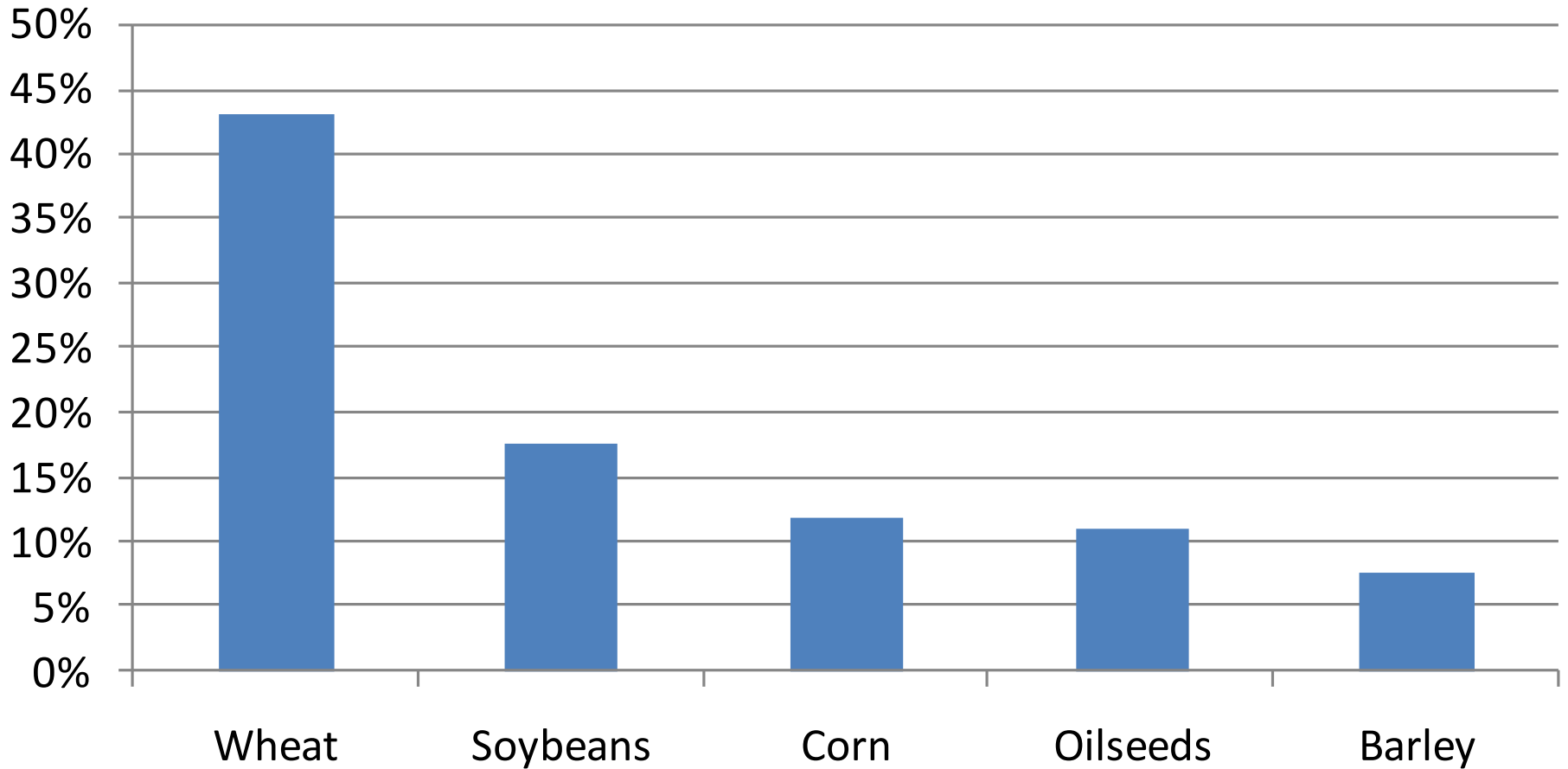
Share of Acreage by Crop



ACRE Commodities

- Wheat, corn, grain sorghum, barley, oats, upland cotton, rice, soybeans, other oilseeds, peanuts, dry peas, lentils, small chickpeas, and large chickpeas
- About 90% of North Dakota planted to these crops

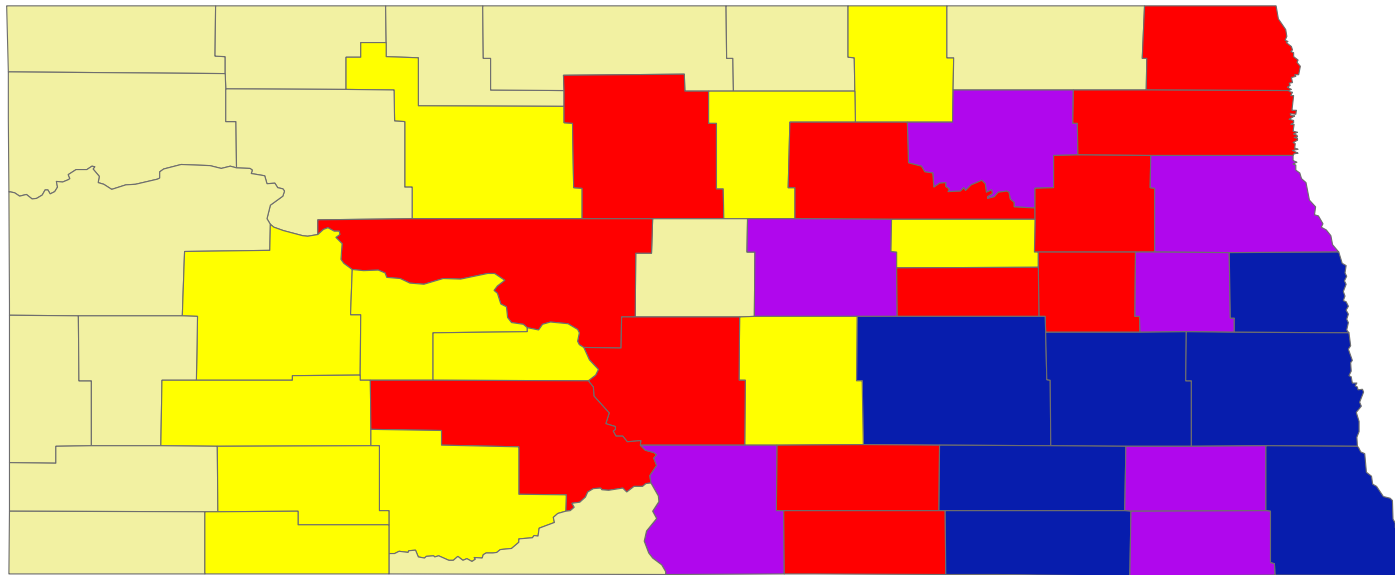
2008 Share of Acreage by Crop



ACRE's State Revenue Guarantee

- Revenue = Price X Yield
 - Yield is state yield per planted acre
 - Price is NASS season average price (marketing year price)
- ACRE Guarantee: 90% of the product of
 - Olympic average of state yield previous five years
 - Average of NASS price past two years
- ACRE can pay out due to low state yield or low price

Corn Acres in 2008



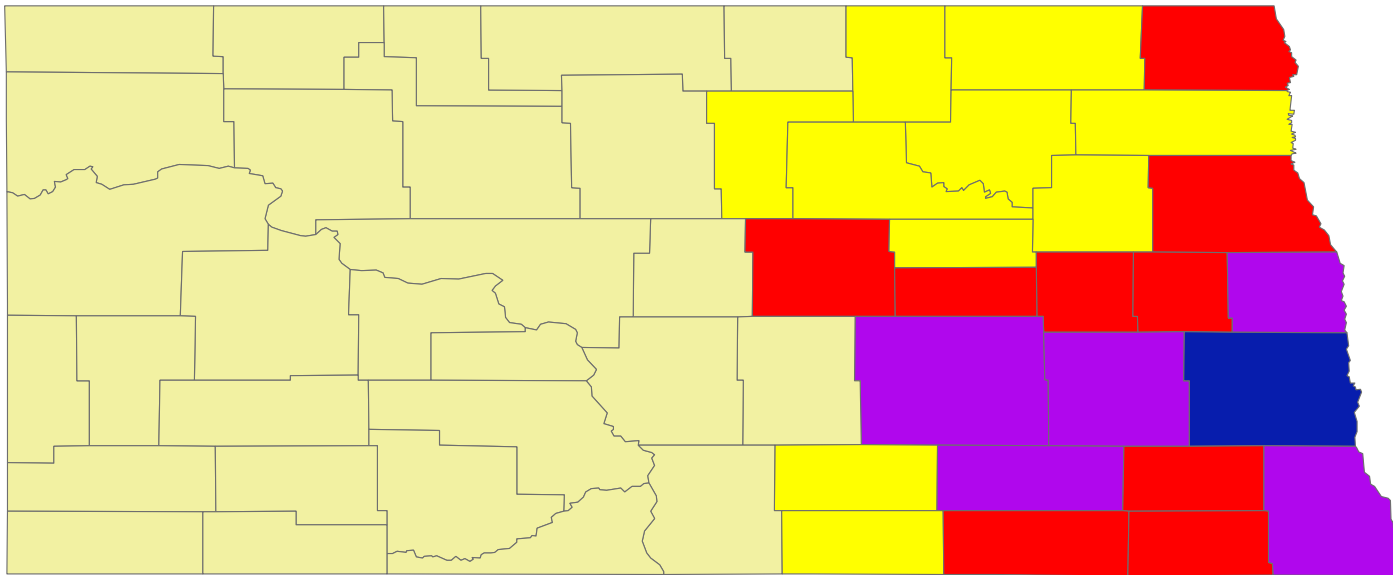
Legend

COUNTIES

Corn

- 0. - 9700
- 9700 - 23300
- 23300- 55000
- 55000 - 109000
- 109000- 285000

Soybean Acres in 2008



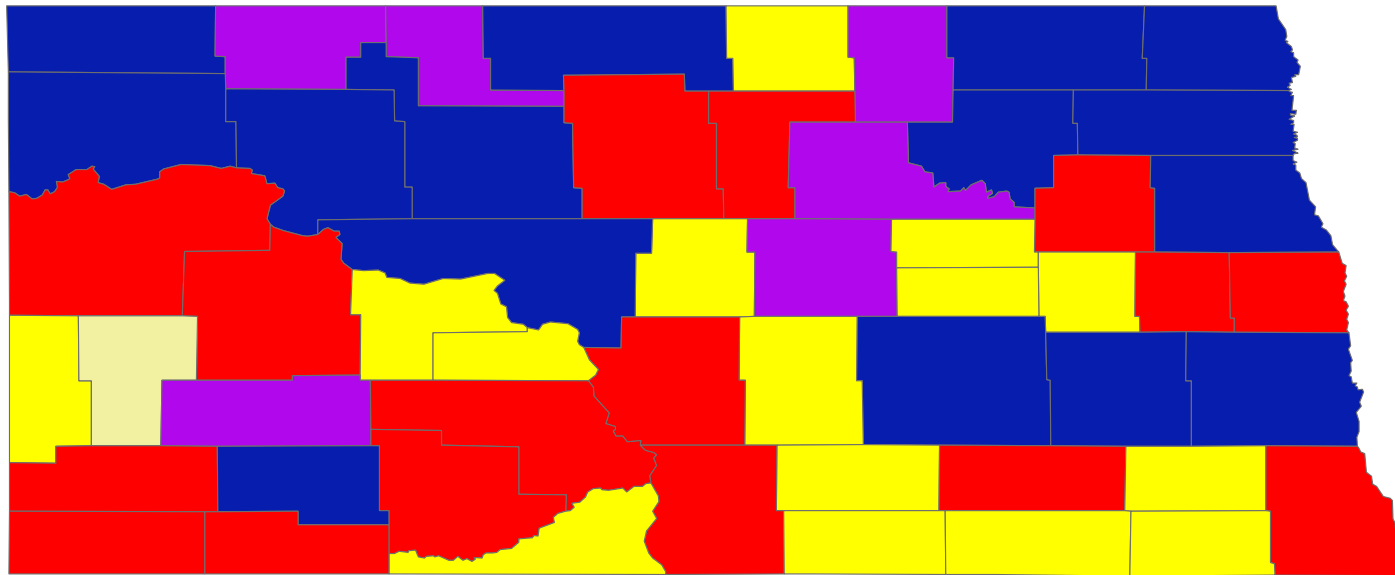
Legend

COUNTIES

acres.SOYBEANS / none

- 0 - 18000
- 18000 - 68000
- 68000 - 125000
- 125000 - 290000
- 290000 - 440000

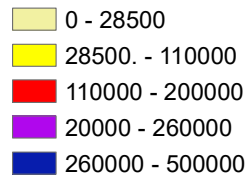
Wheat (Approximate) Acres in 2008



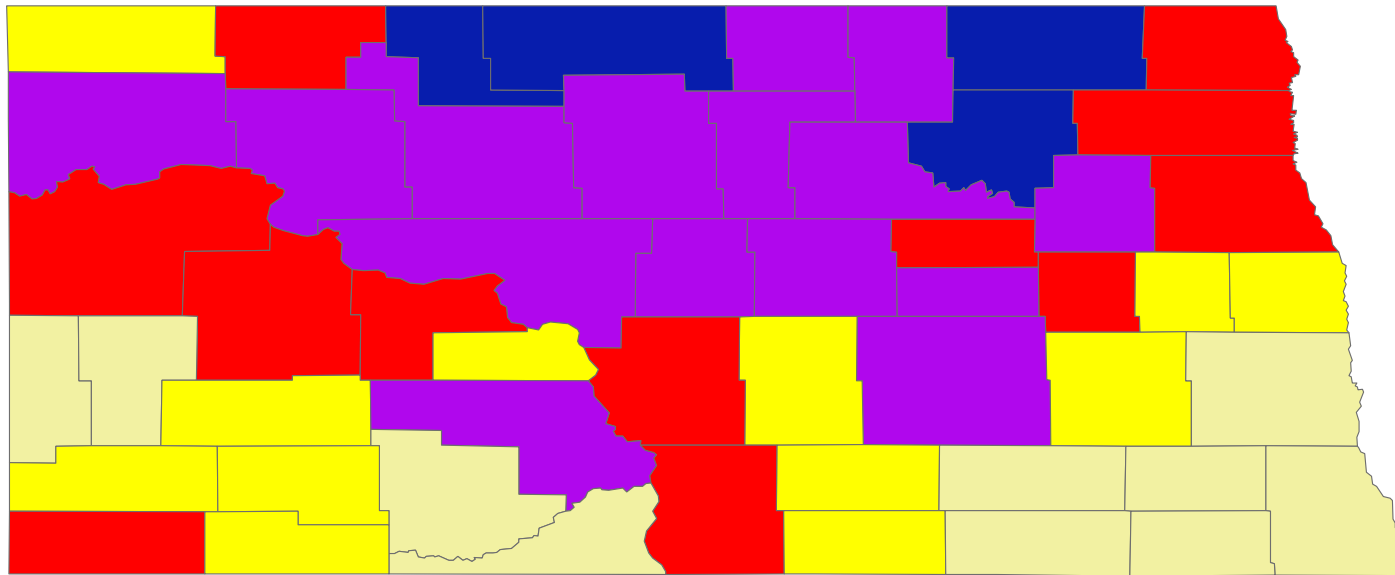
Legend

COUNTIES

acres.WHEAT / none



Barley Acres in 2008



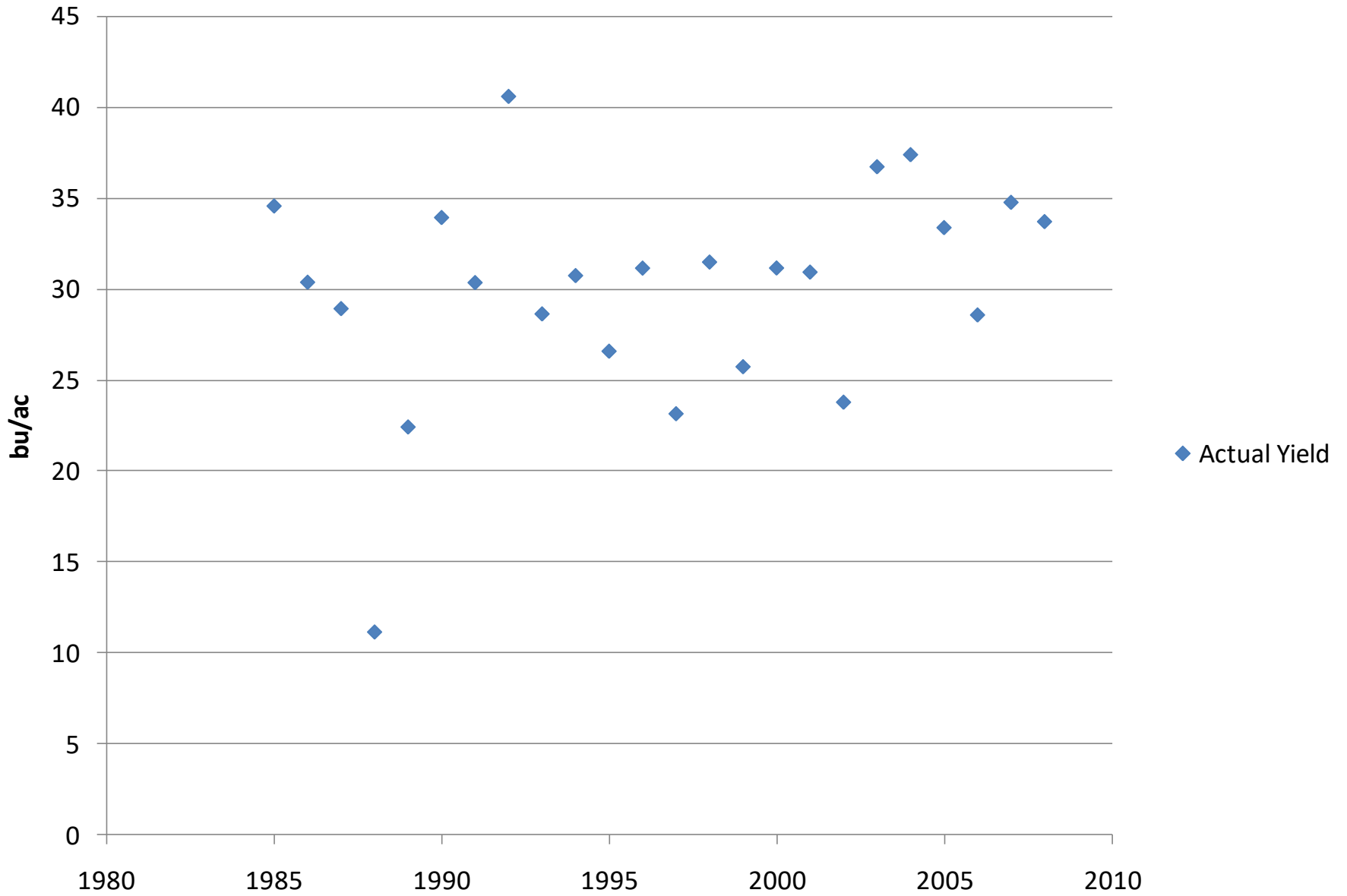
Legend

COUNTIES

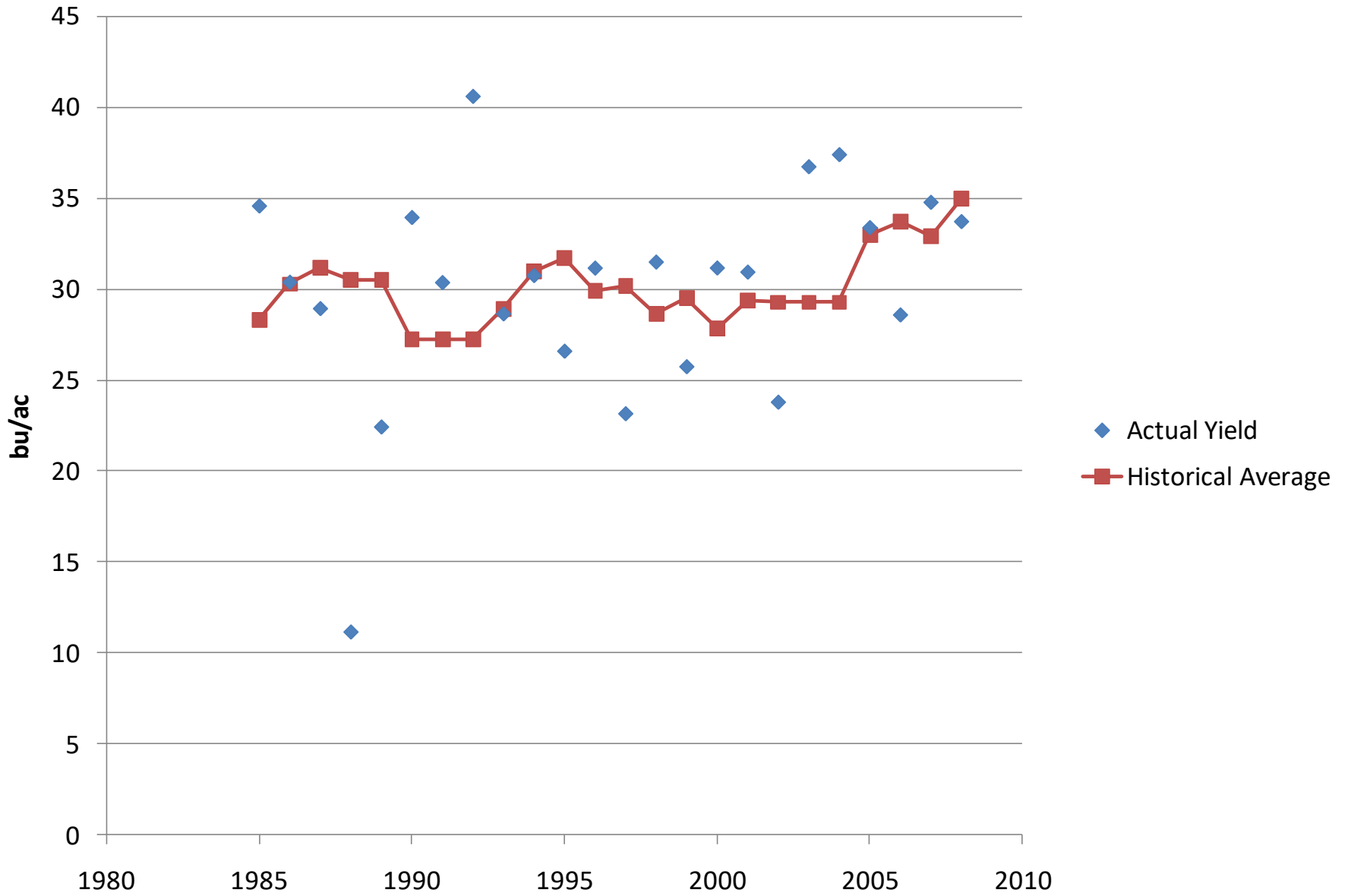
Barley acres

- 0 - 6000
- 6100. - 16500.
- 16500.- 32000.
- 32000.- 66000.
- 66000. - 130000.

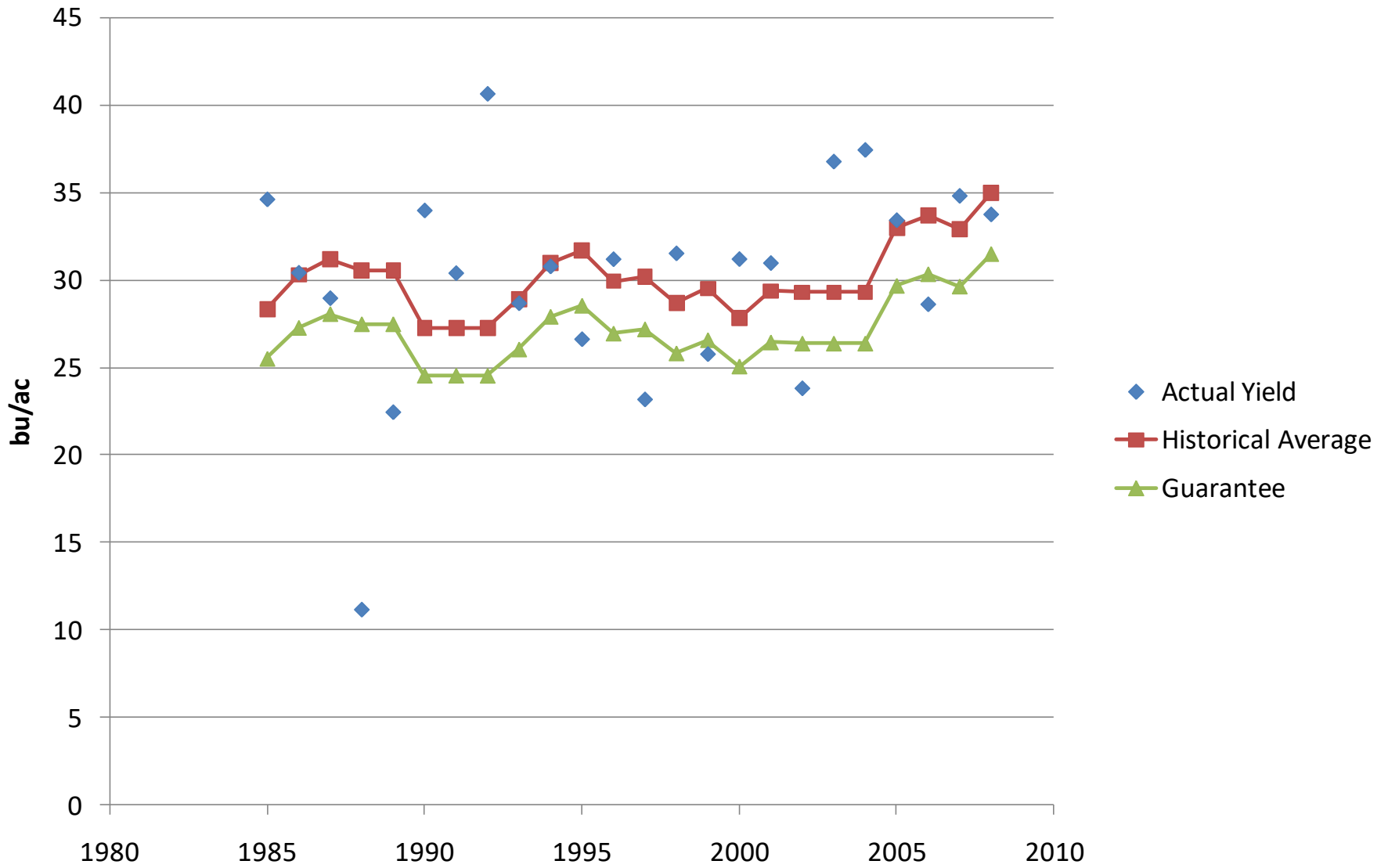
North Dakota Wheat Yields Per Planted Acre



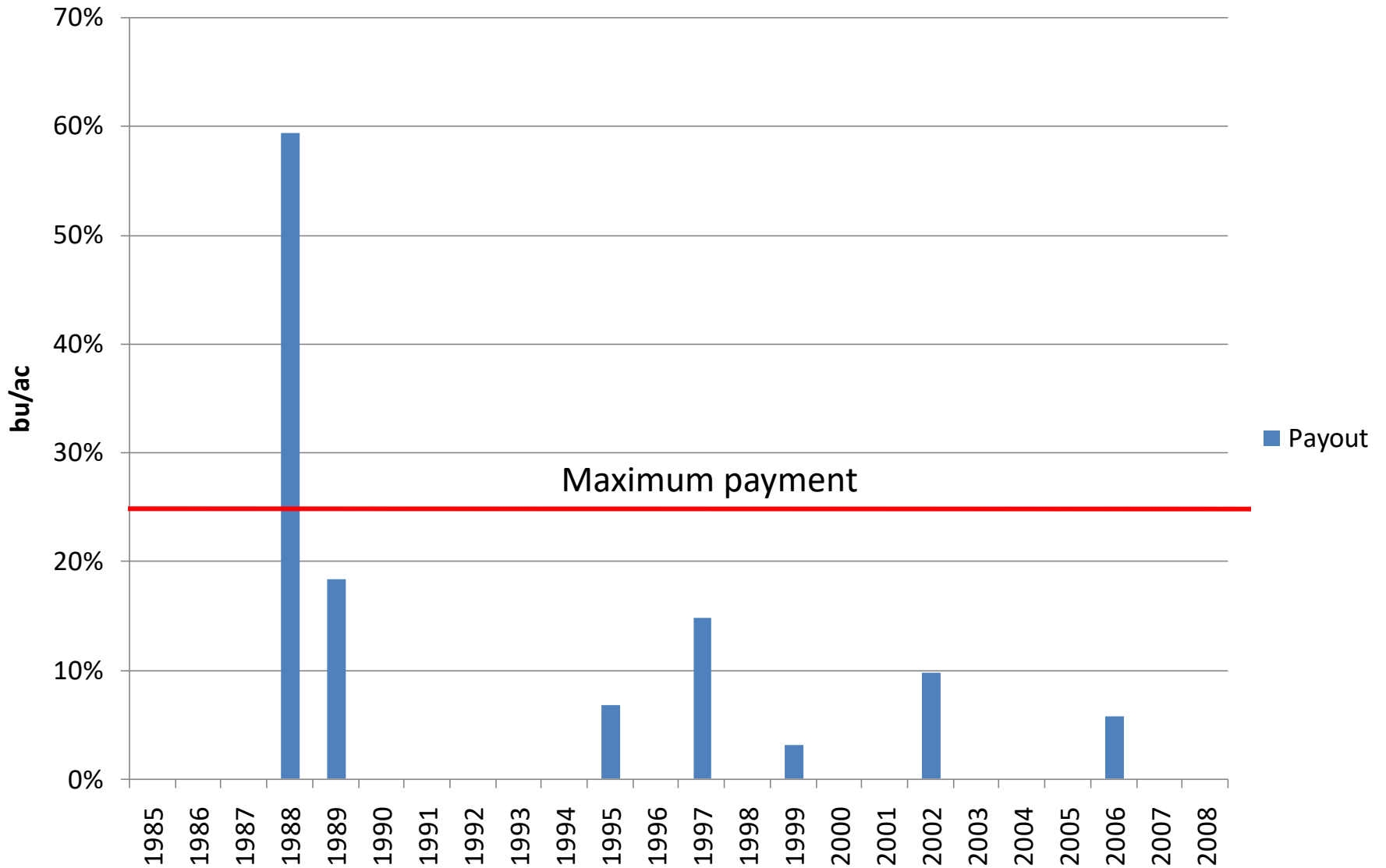
North Dakota Wheat Yields Per Planted Acre



North Dakota Wheat Yields Per Planted Acre and ACRE Yield "Guarantee"



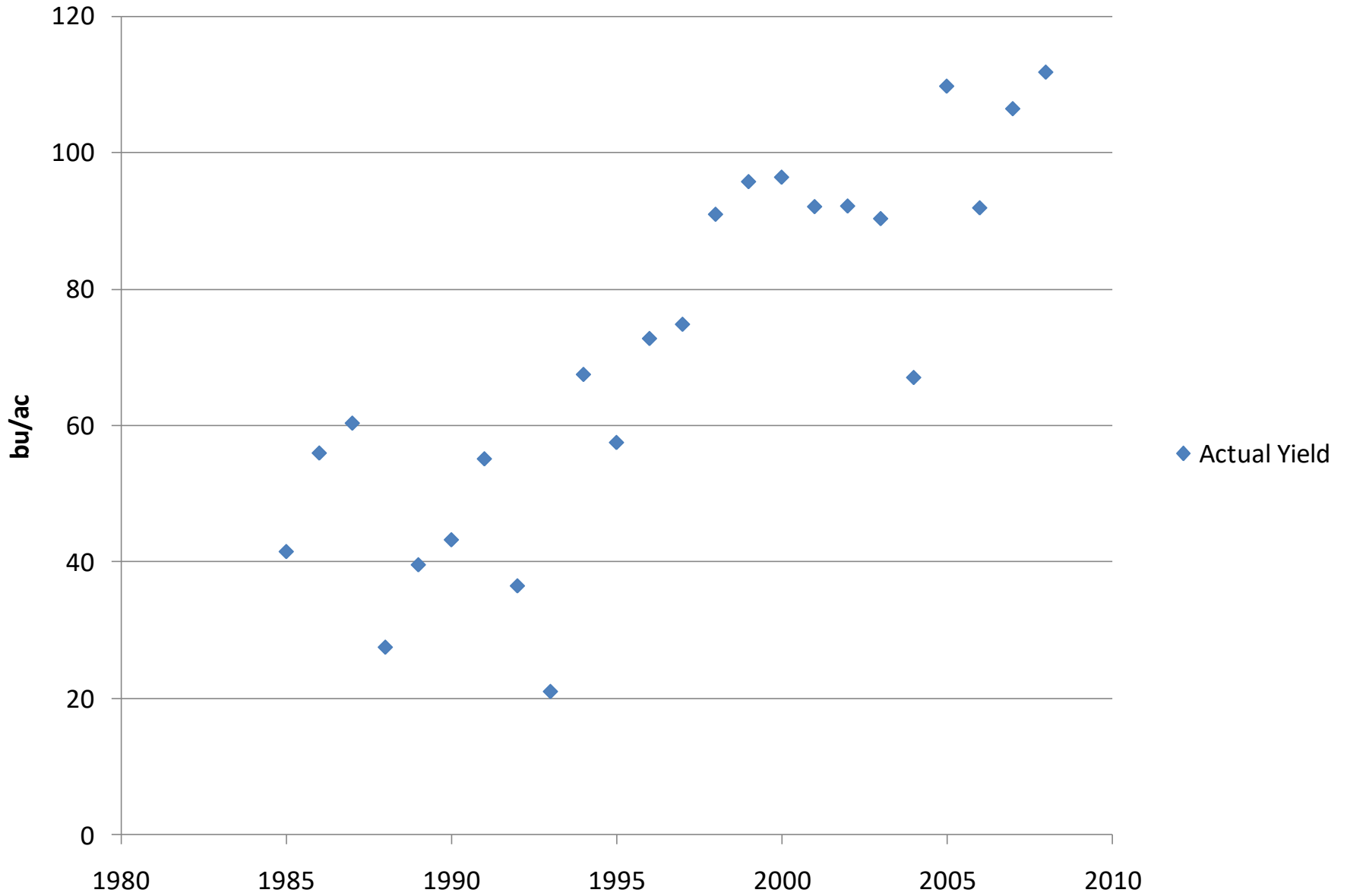
North Dakota Wheat Yield Payout (% of ACRE Yield Guarantee)



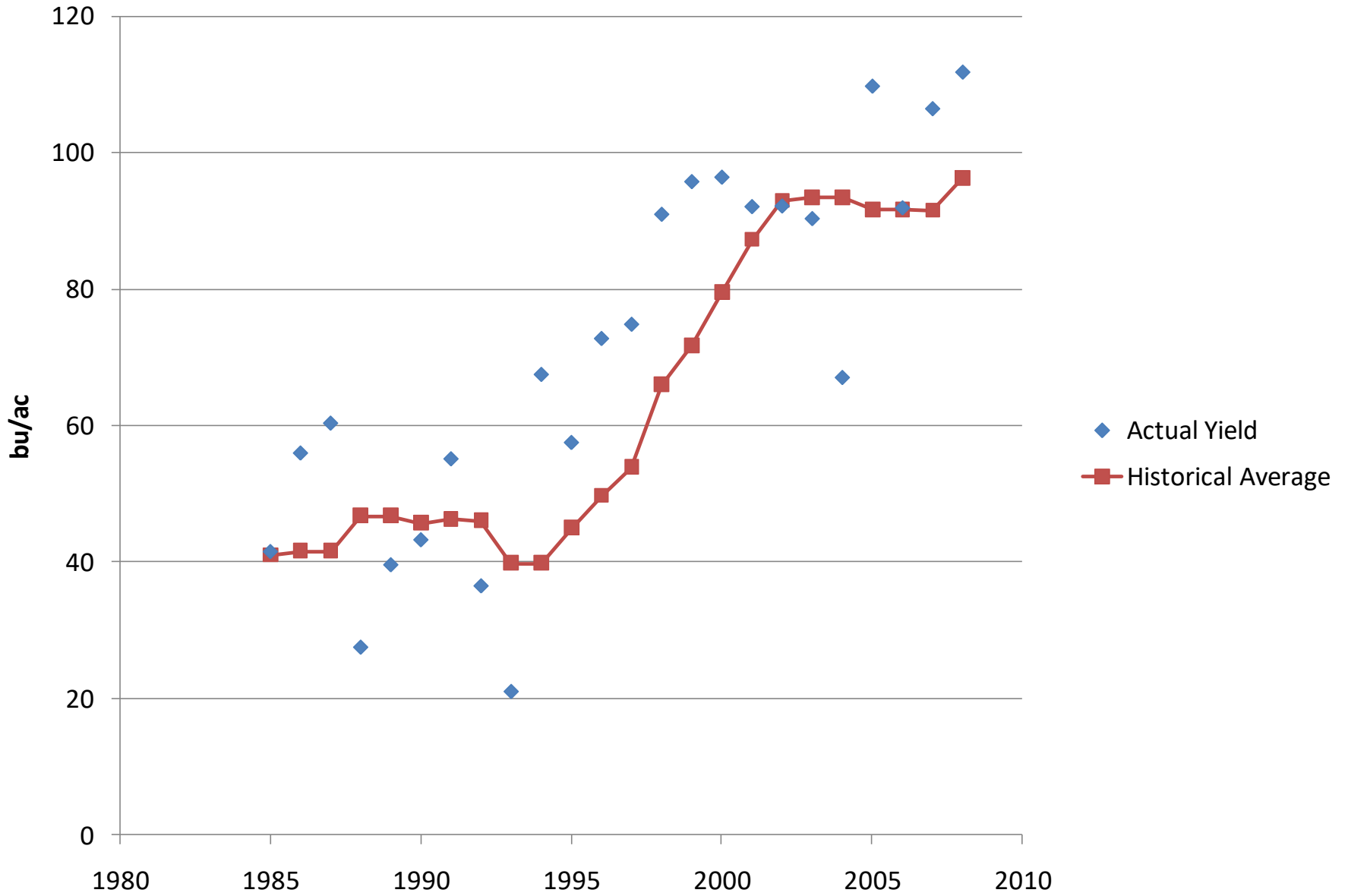
Value of Yield Guarantee

- Average payout = 3.5% of guarantee
- At \$5.00 per bushel price
 - Average payout = \$3.96 per acre
 - About 12 cents per expected bushel per planted acre.

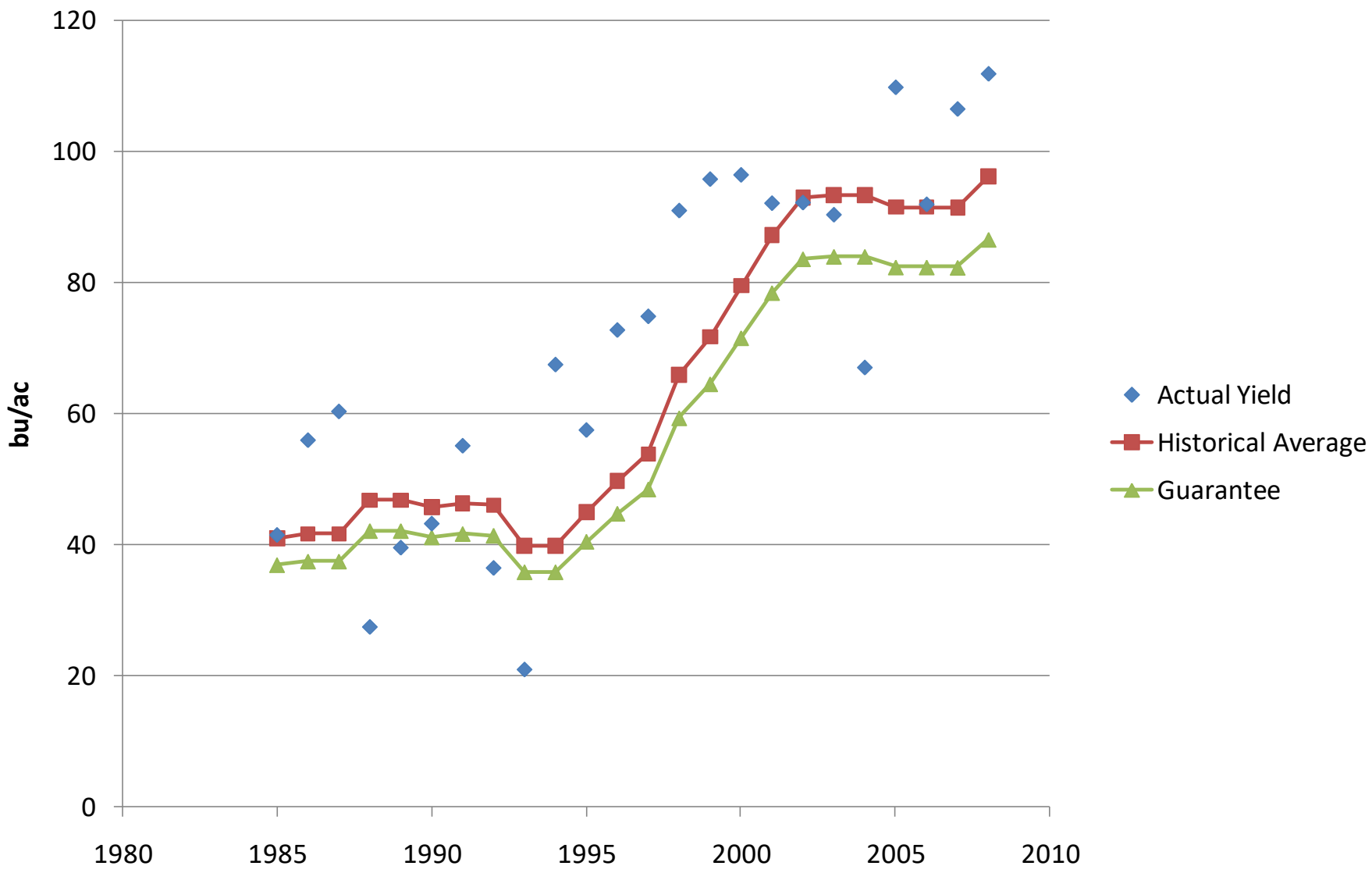
North Dakota Corn Yields Per Planted Acre



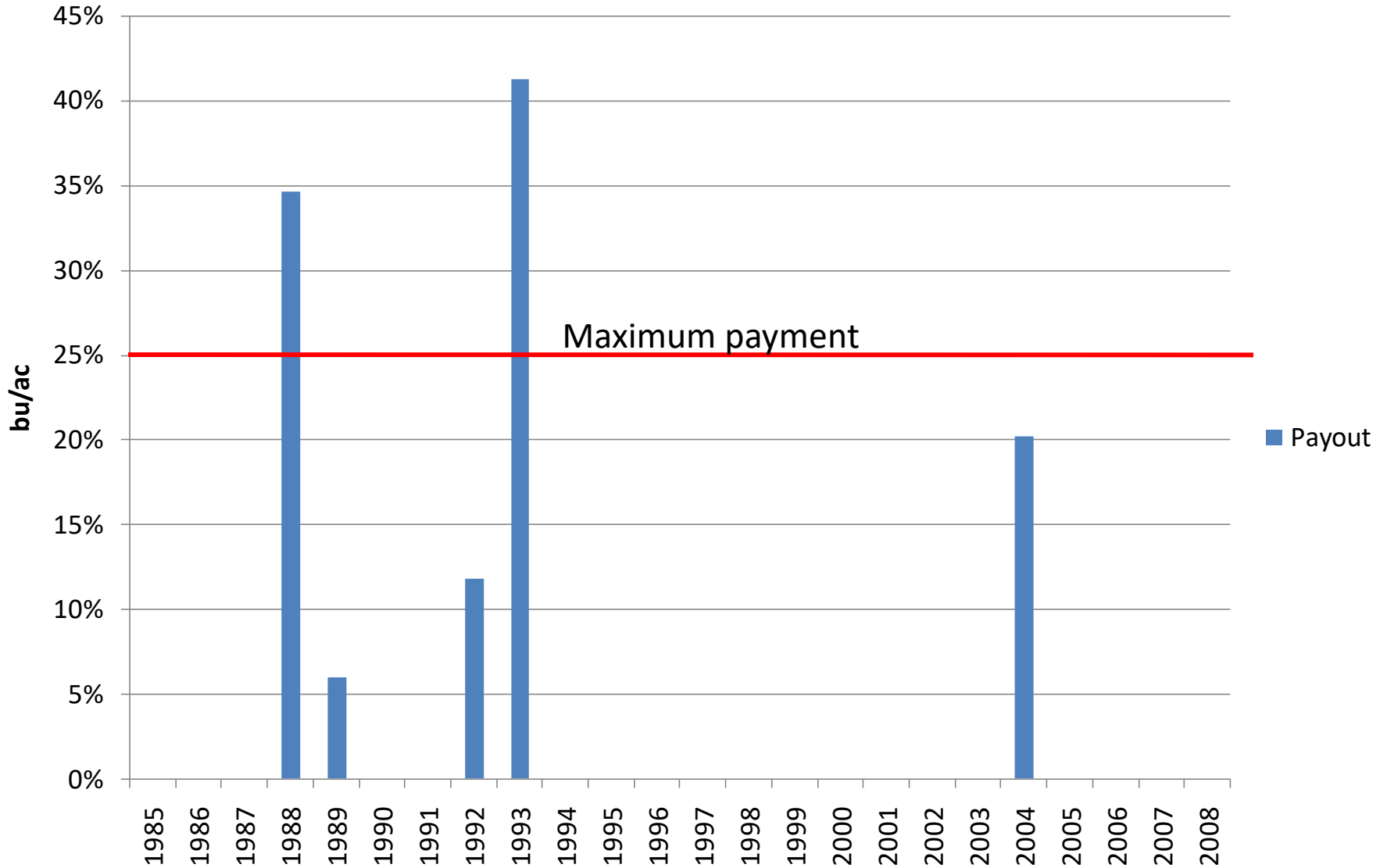
North Dakota Corn Yields Per Planted Acre



North Dakota Corn Yields Per Planted Acre and ACRE Yield "Guarantee"



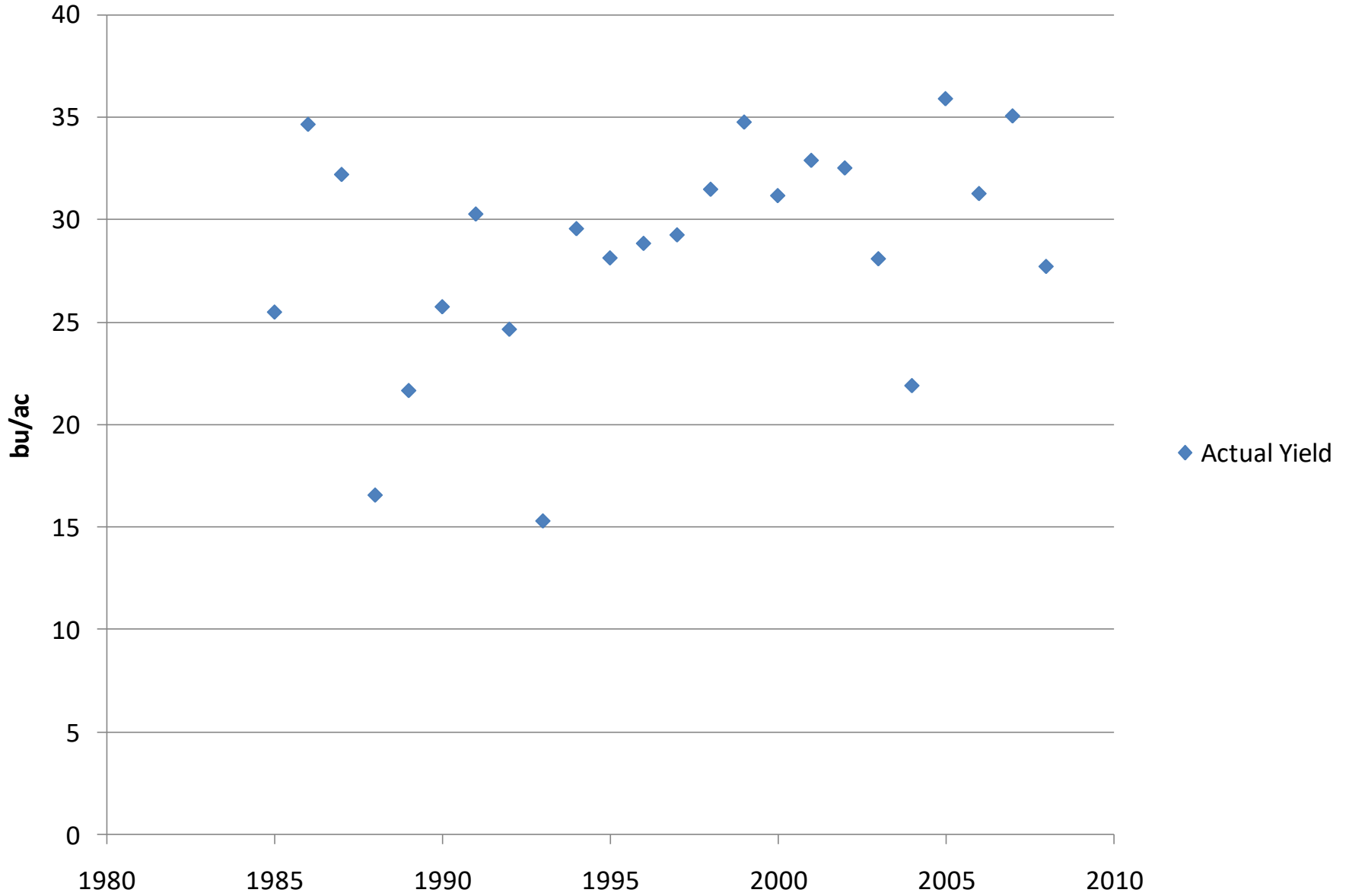
North Dakota Corn Yield Payout (% of ACRE Yield Guarantee)



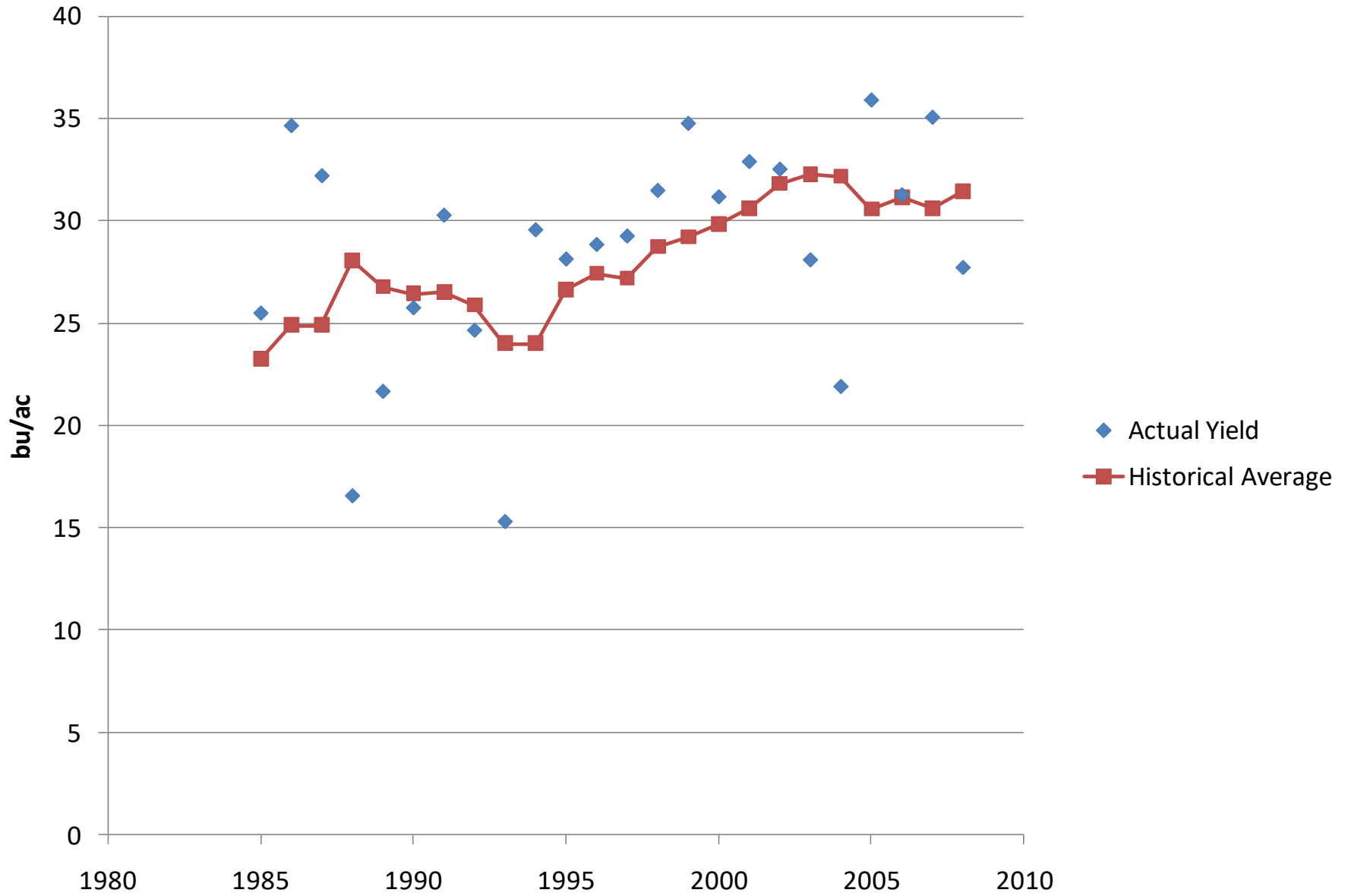
Value of Corn Yield Guarantee

- Average payout = 2.5% of guarantee
- At \$4.00 per bushel price
 - Average payout = \$6.05 per acre
 - About 7 cents per expected bushel per planted acre.

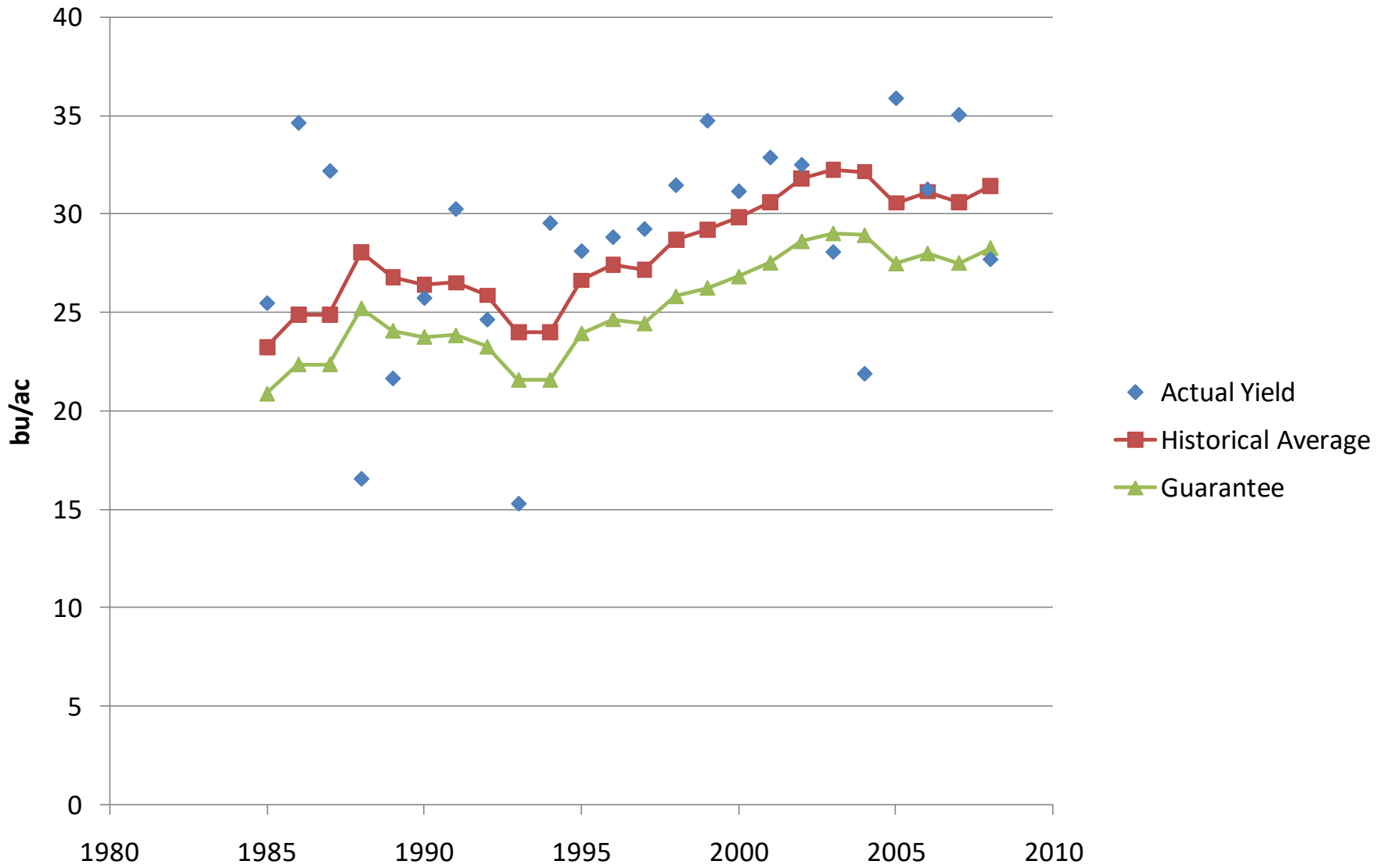
North Dakota Soybean Yields Per Planted Acre



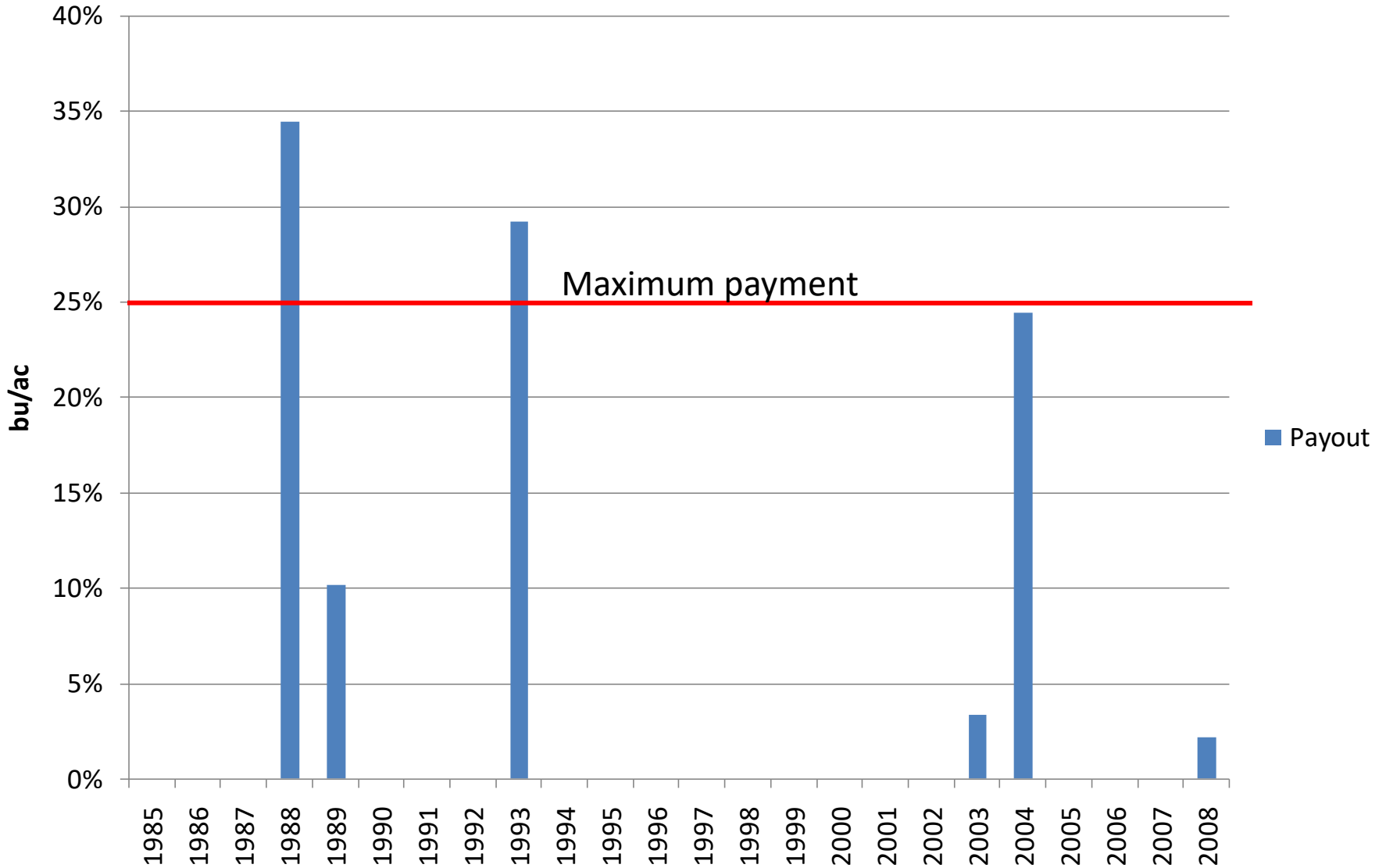
North Dakota Soybeans Yields Per Planted Acre



North Dakota Soybean Yields Per Planted Acre and ACRE Yield "Guarantee"



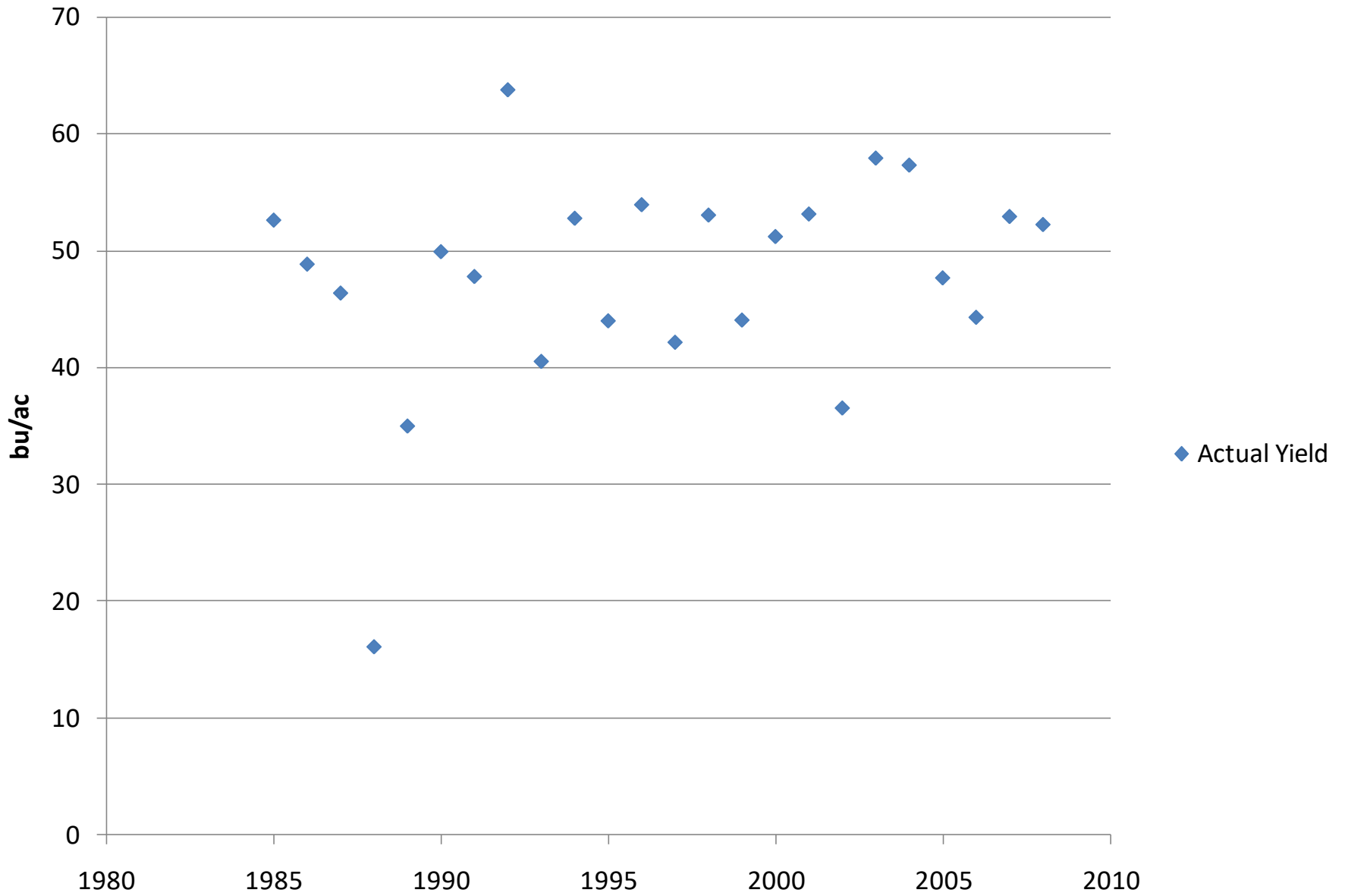
North Dakota Soybean Yield Payout (% of ACRE Yield Guarantee)



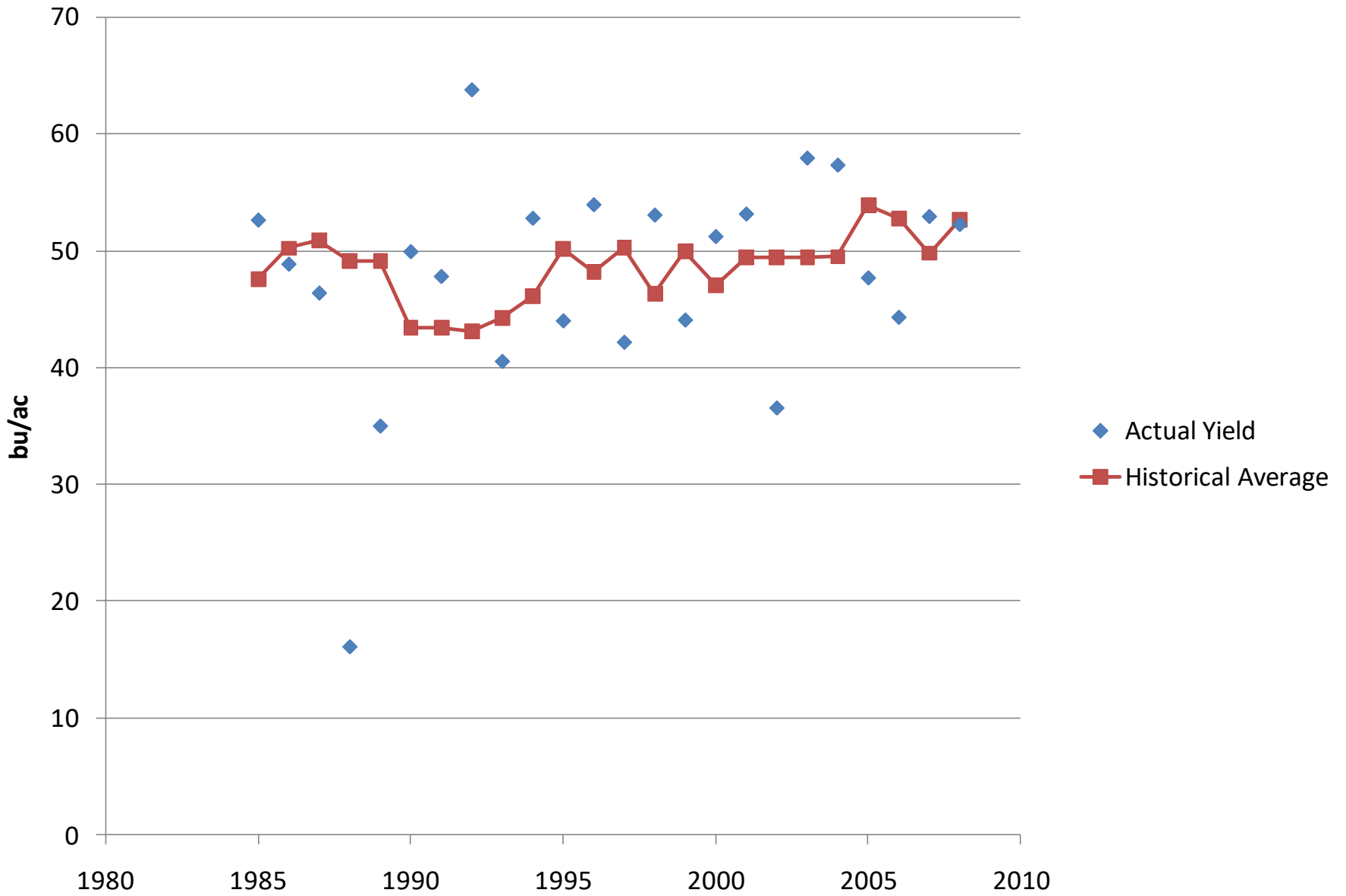
Value of Soybean Yield Guarantee

- Average payout = 6.0% of guarantee
- At \$8.00 per bushel price
 - Average payout = \$6.44 per acre
 - About 20 cents per expected bushel per planted acre.

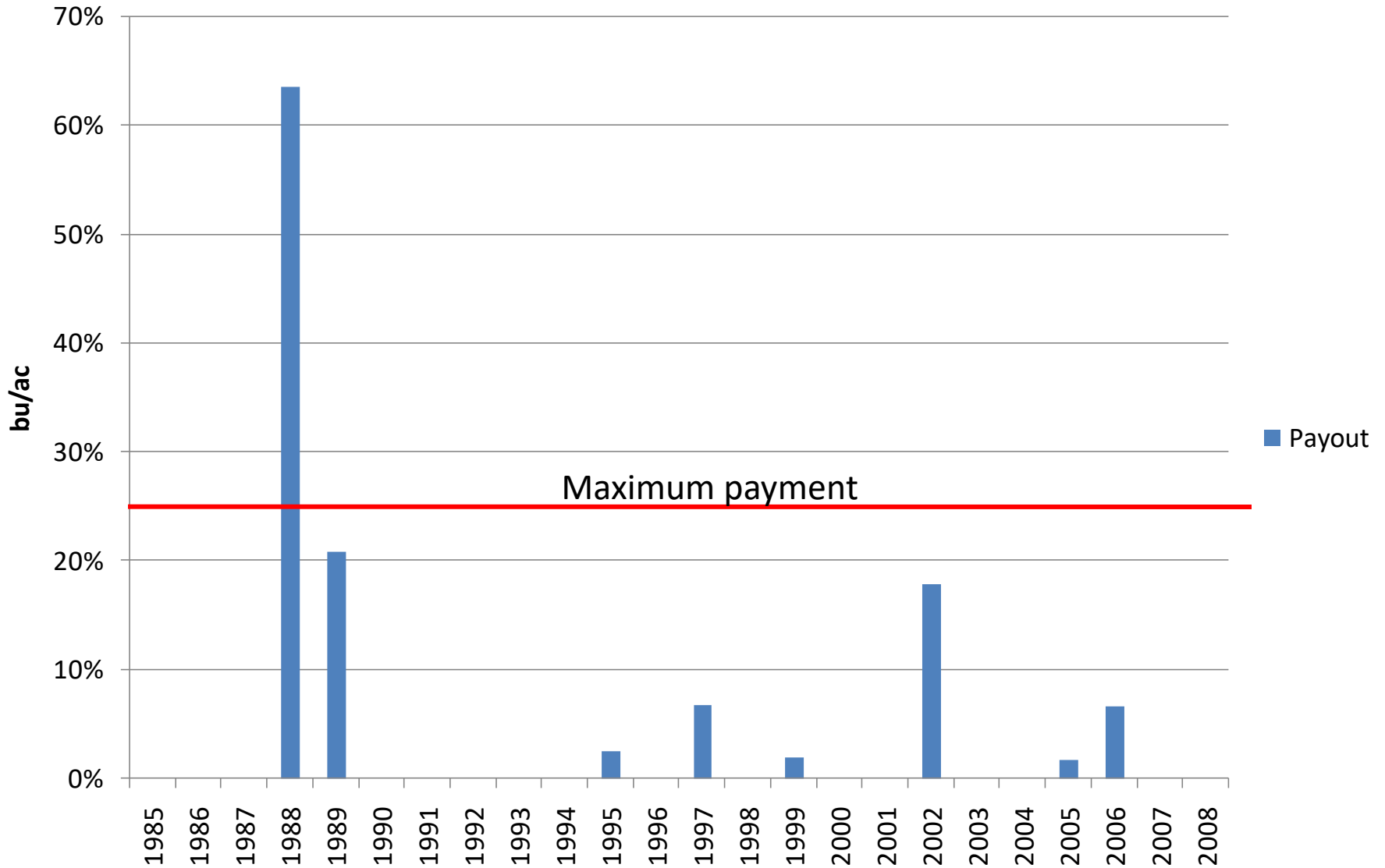
North Dakota Barley Yields Per Planted Acre



North Dakota Barley Yields Per Planted Acre



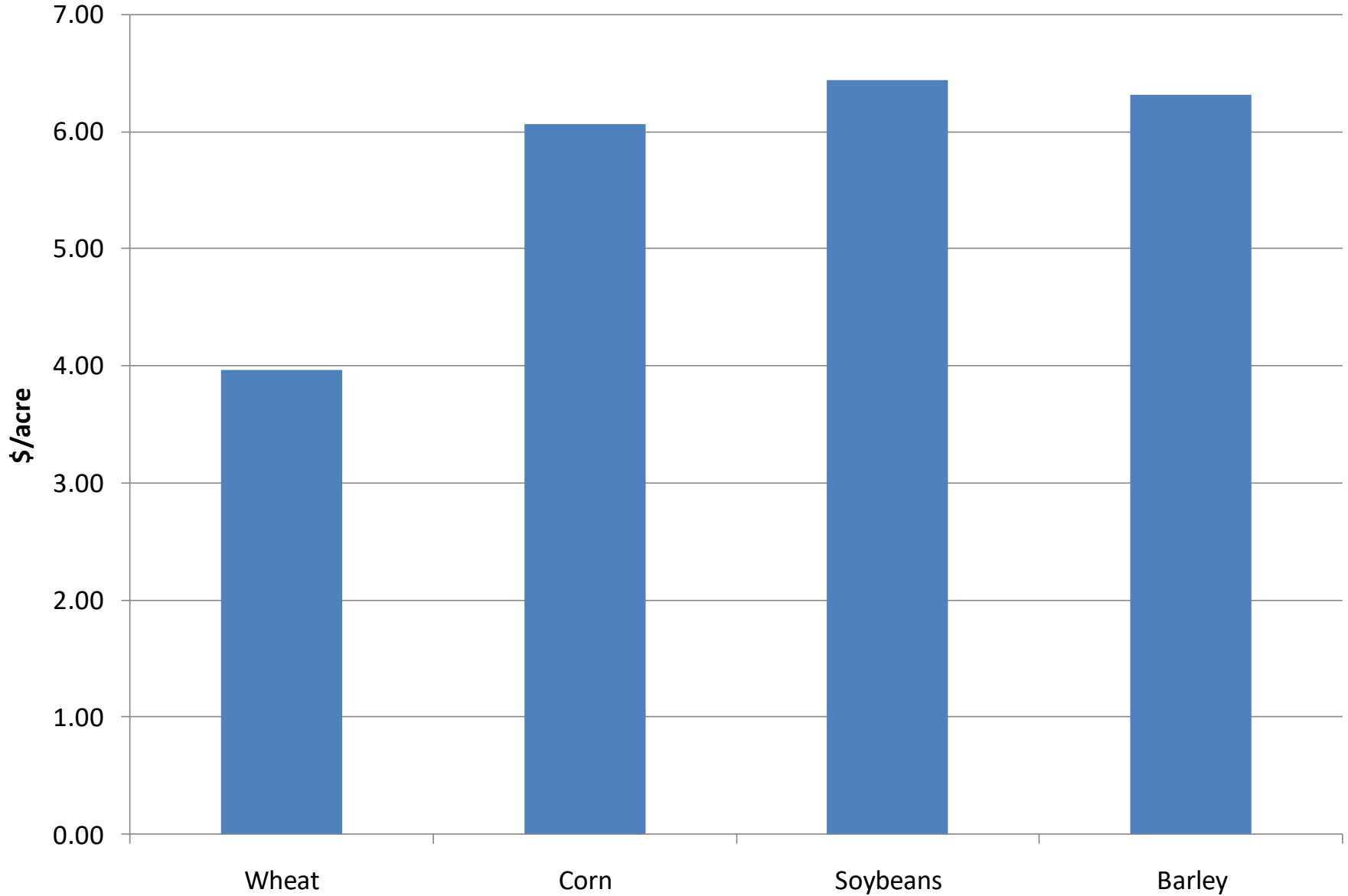
North Dakota Barley Yield Payout (% of ACRE Yield Guarantee)



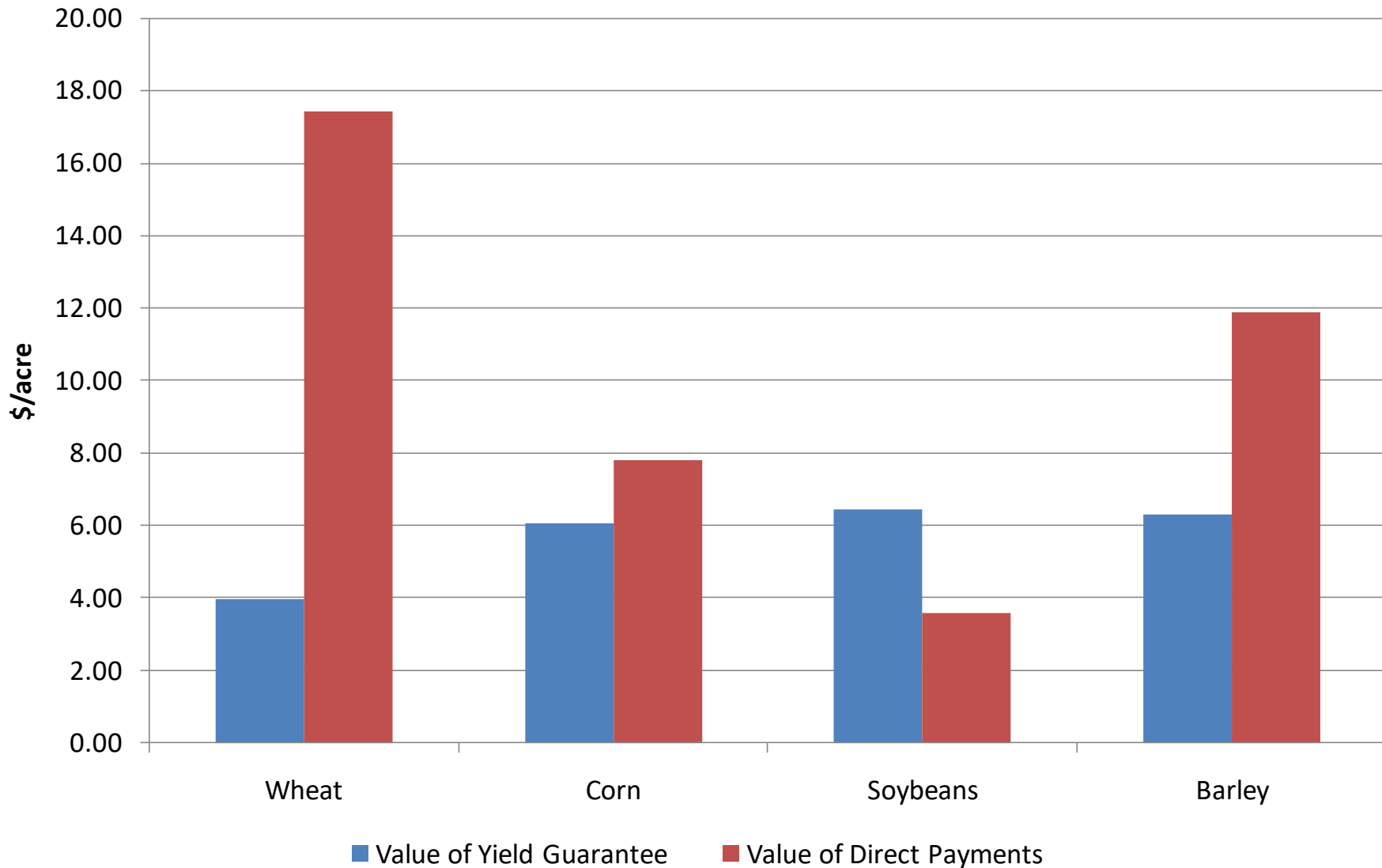
Value of Barley Yield Guarantee

- Average payout = 3.5 % of guarantee
- At \$5.00 per bushel price
 - Average payout = \$6.30 per acre
 - About 12 cents per expected bushel per planted acre.

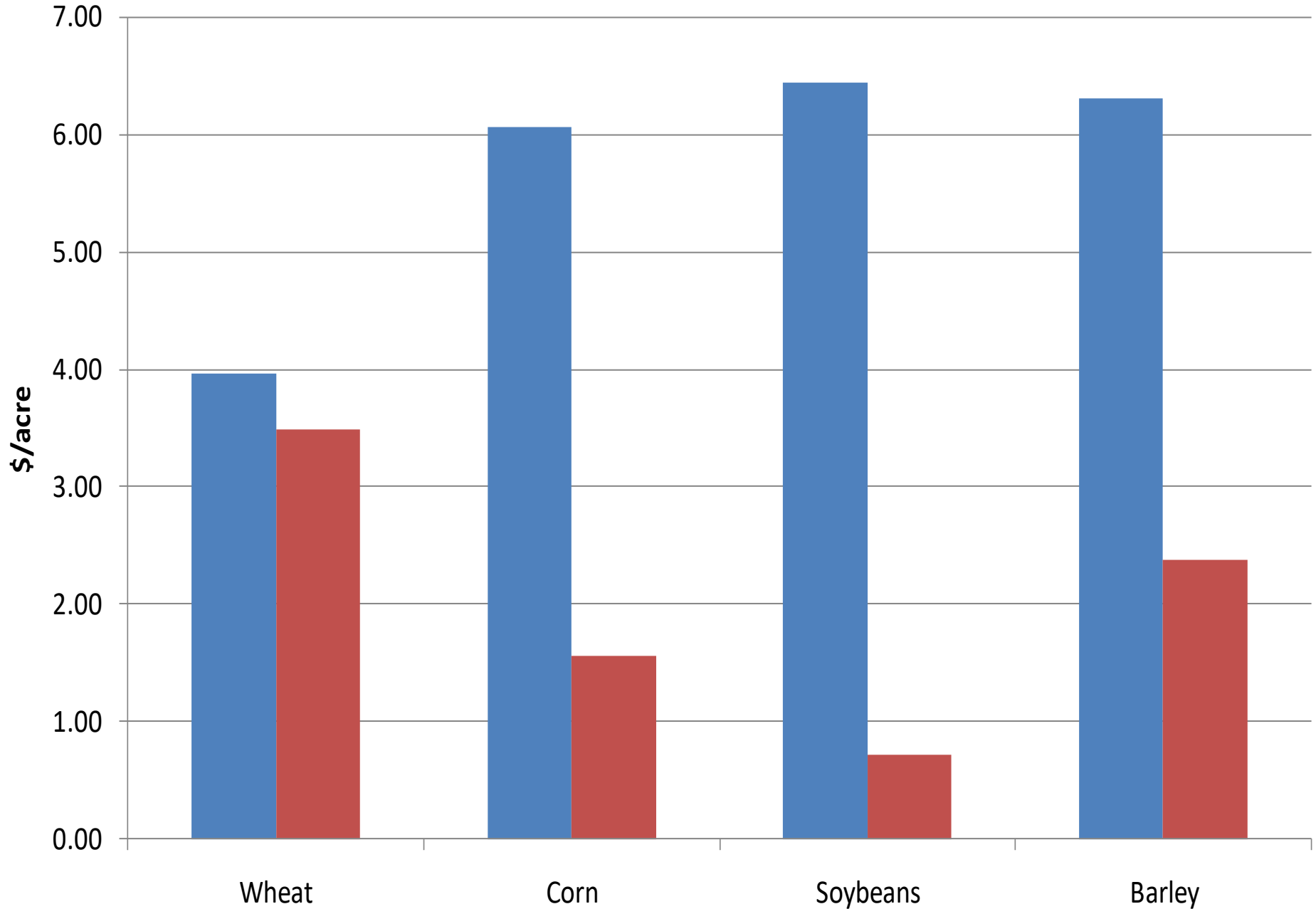
Value of an ACRE "Yield Guarantee"



Value of an ACRE "Yield Guarantee" Relative to Direct Payments



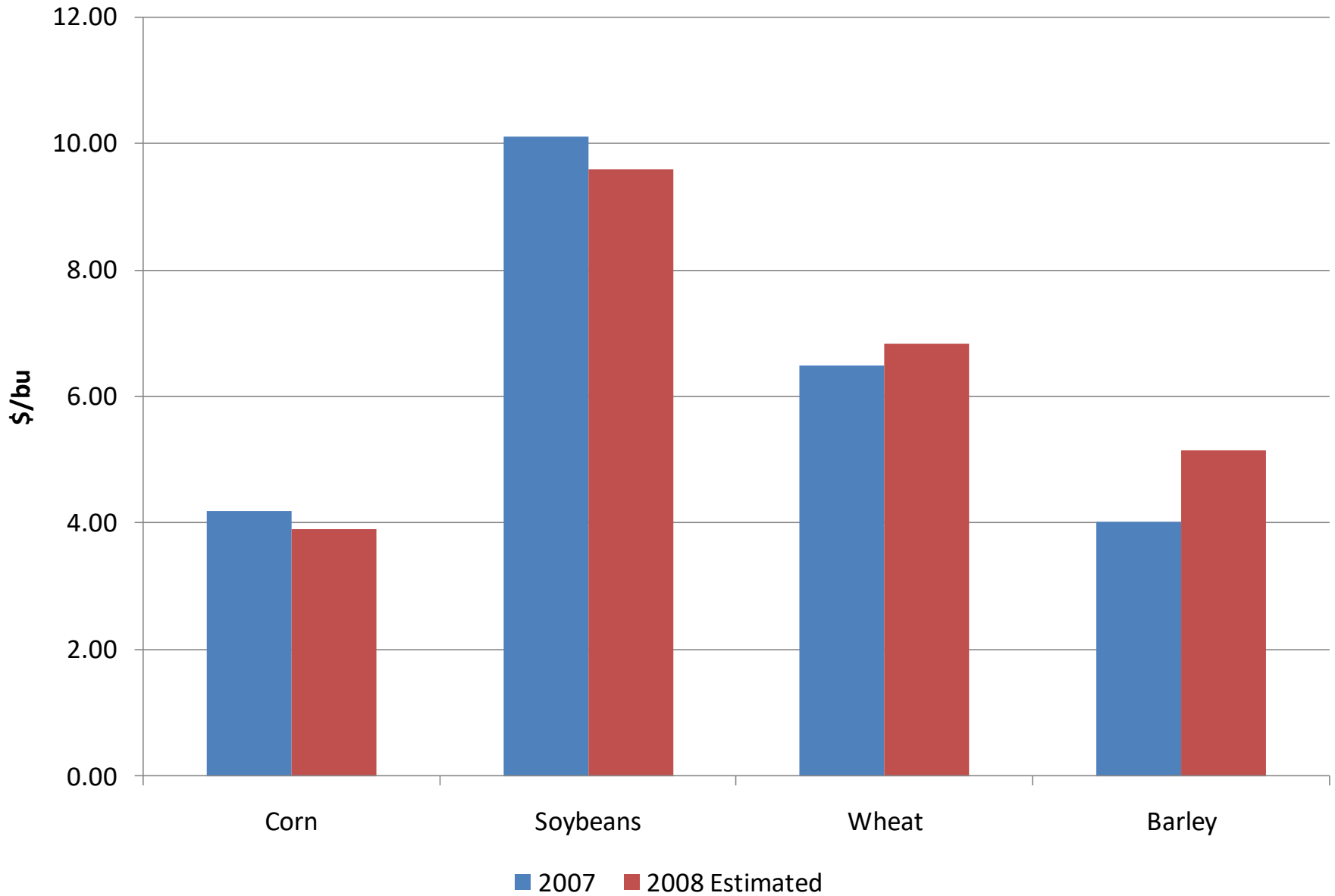
of Direct Payments



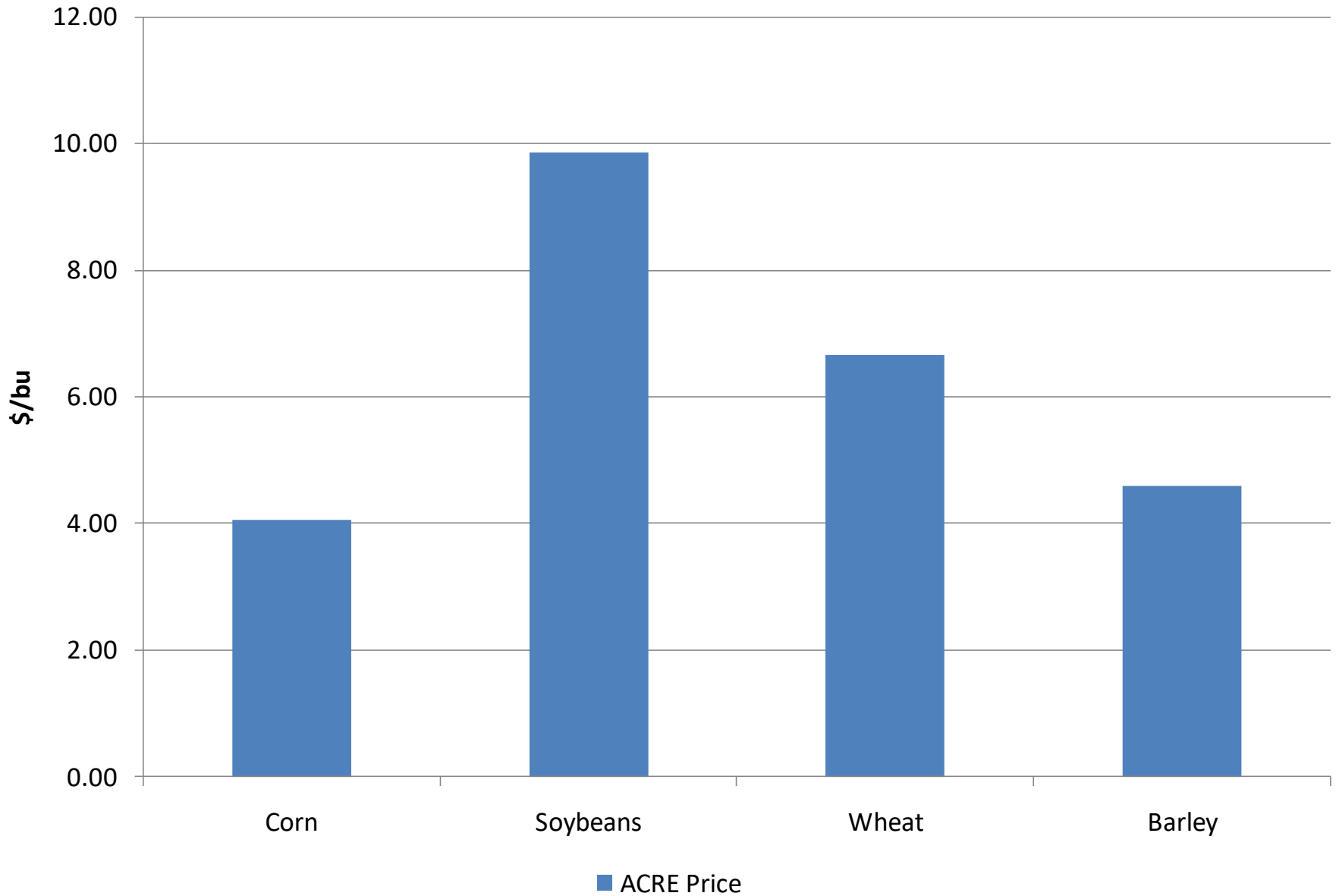
First Findings

- Yield portion of ACRE has value
- 20% of direct payments less than the “cost” of yield portion
- Could entice some farmers to sign up.
- But what about the price portion?

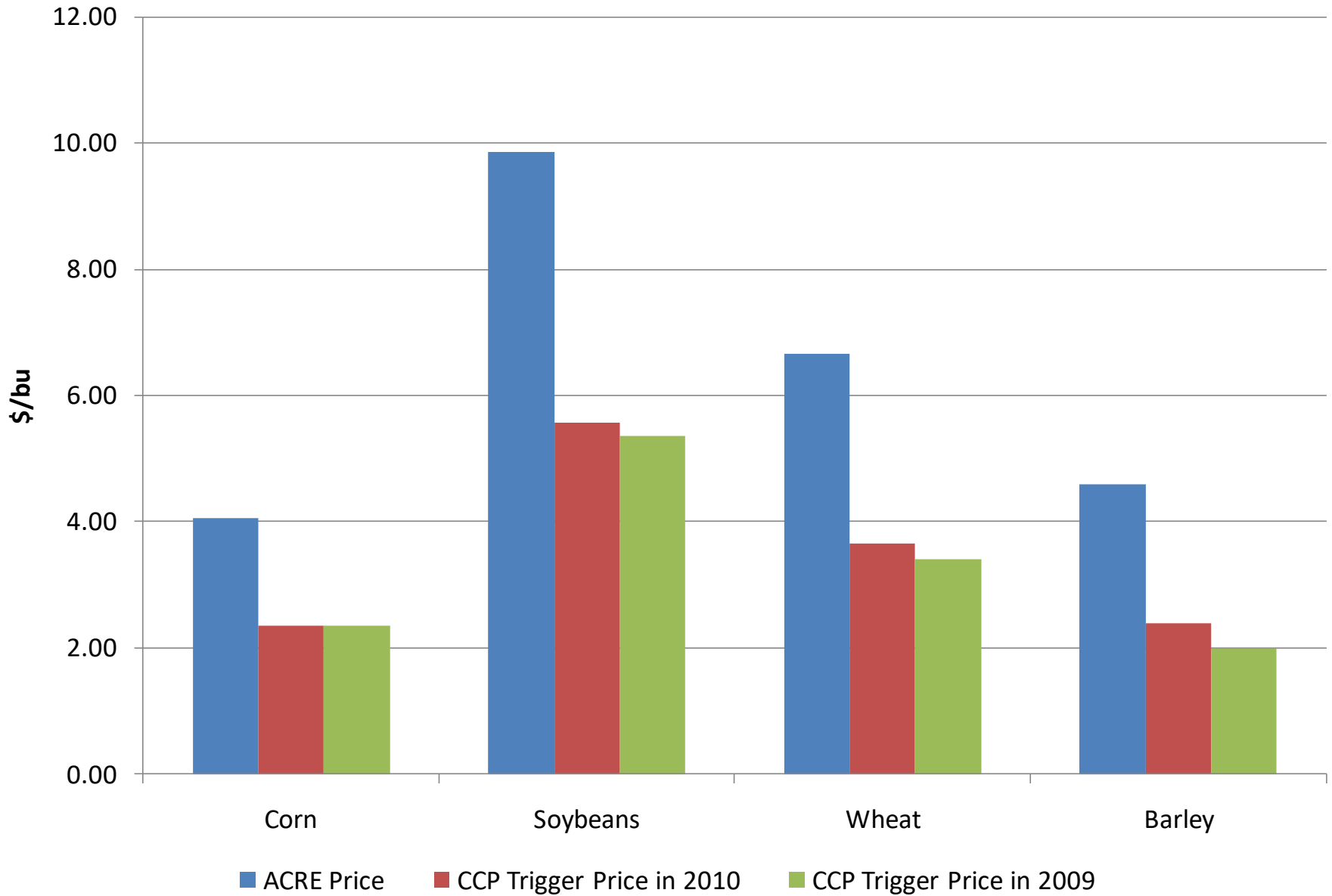
Prices Used to Set ACRE Price Guarantee



Estimated 2009 ACRE Price Guarantee



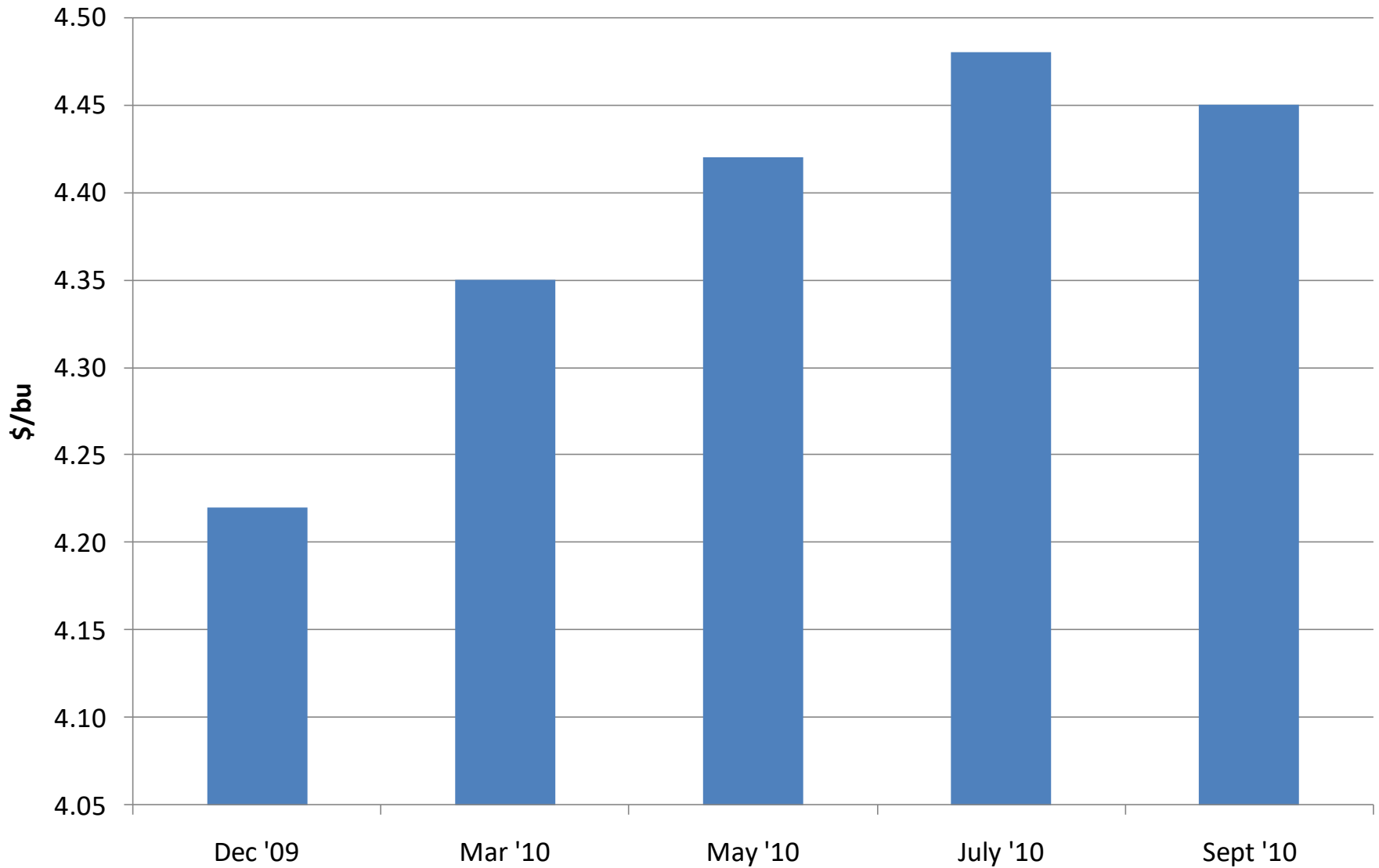
ACRE Guarantees vs Countercyclical Program Guarantee



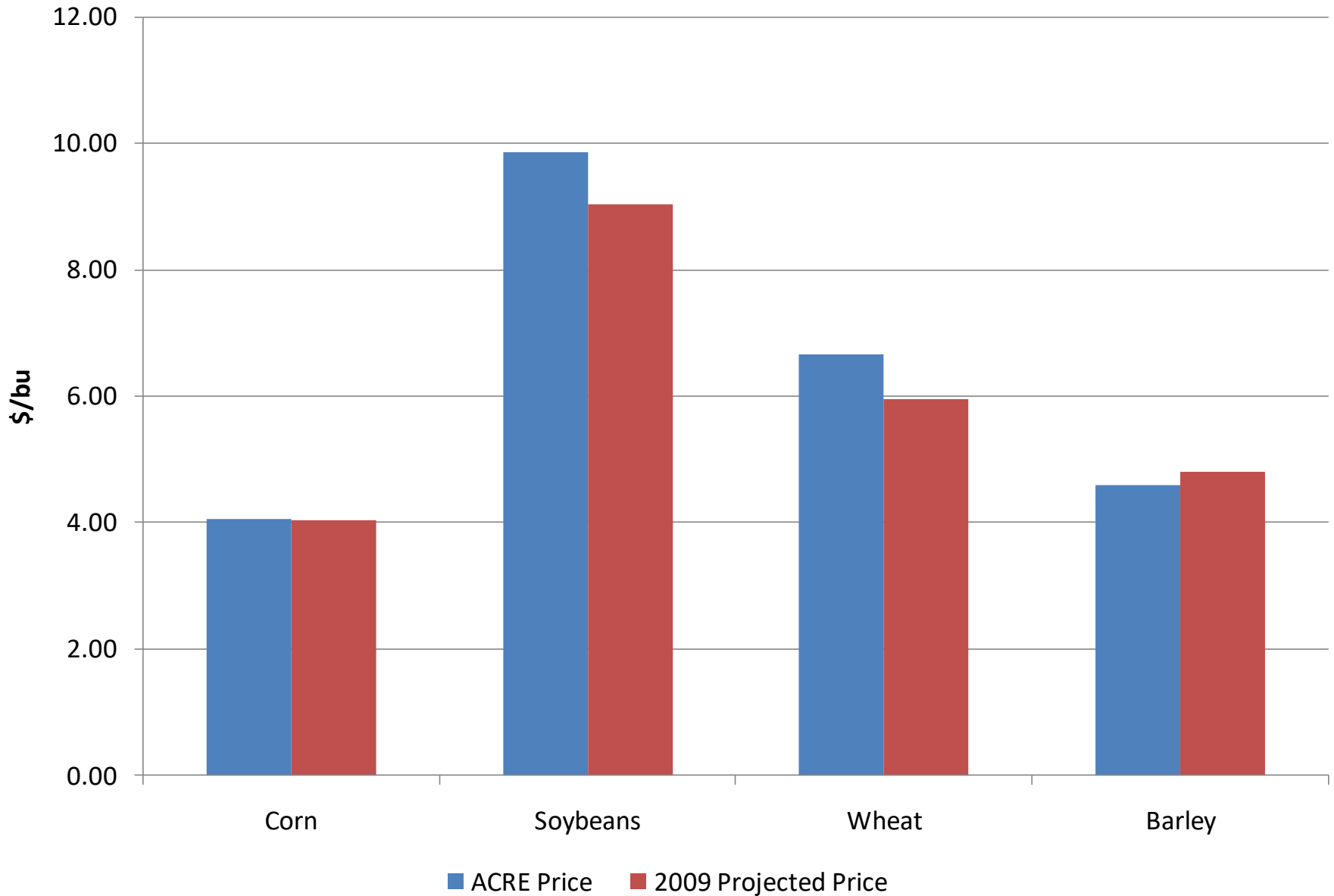
Second Conclusion

- ACRE price guarantees much higher than CCP guarantees
- Higher guarantee increases likelihood of a payout
- How likely is it that price will trigger a payout under the two programs?
 - Need to look at 2009/10 projected season average prices

CBOT Corn Futures: Projected Marketing Year Price = \$4.03



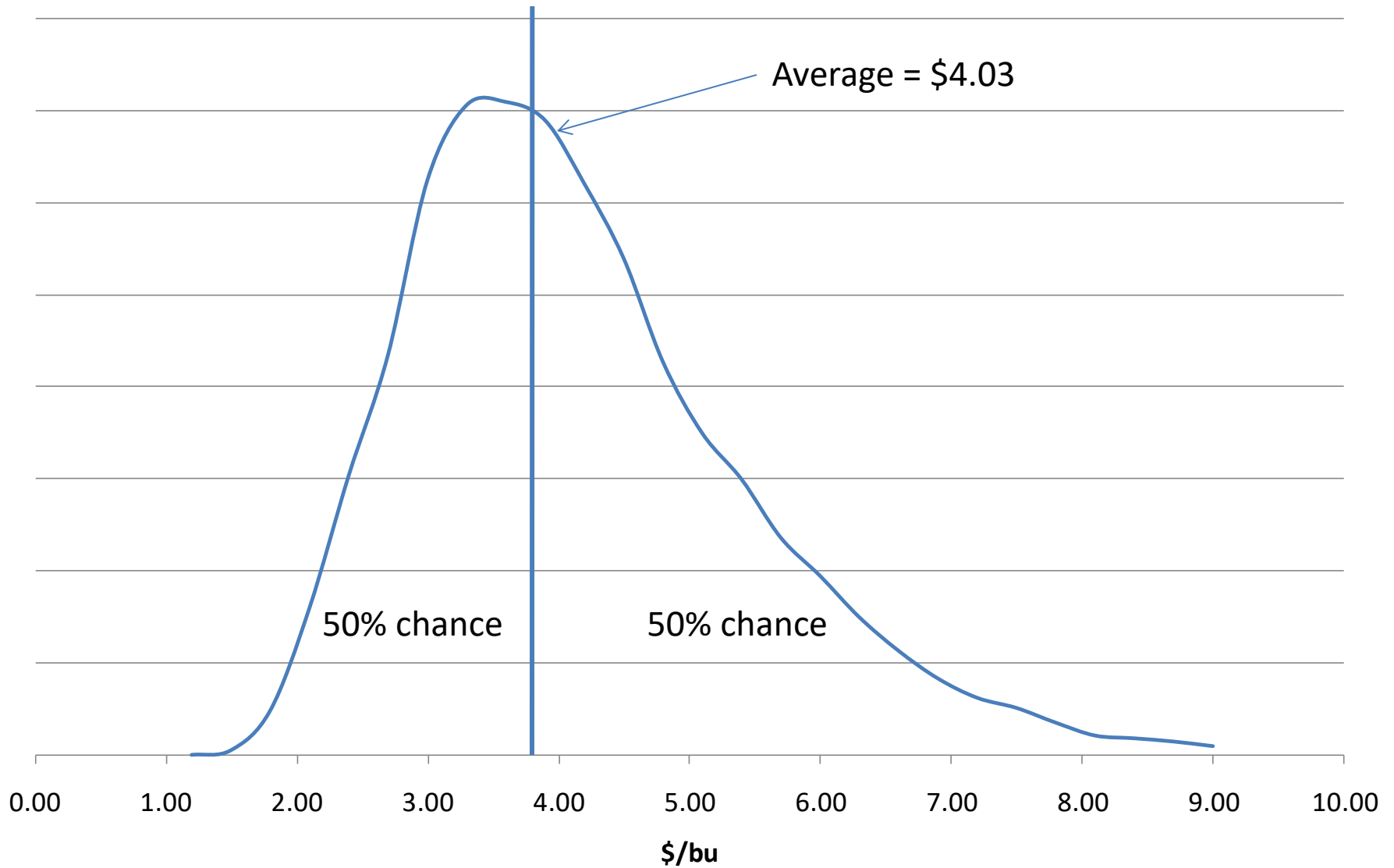
ACRE Guarantee and Projected 2010 Prices



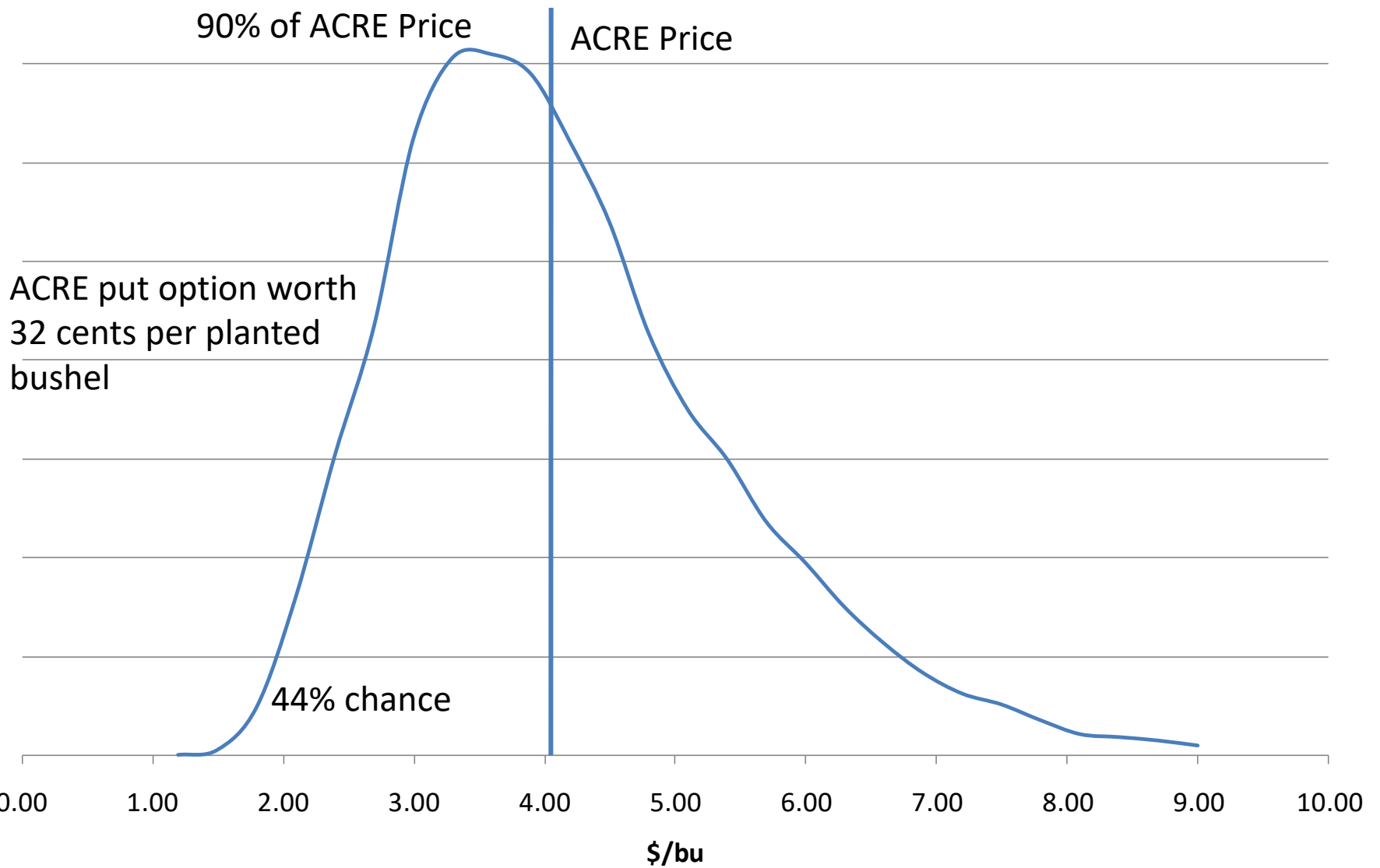
Price Volatility

- We know that 2009/10 corn prices will not equal \$4.03/bu
- Obtain market-estimated volatility from option premia
 - An at-the-money put option on Dec corn costs 50 cents per bushel
 - Price volatility = 33%

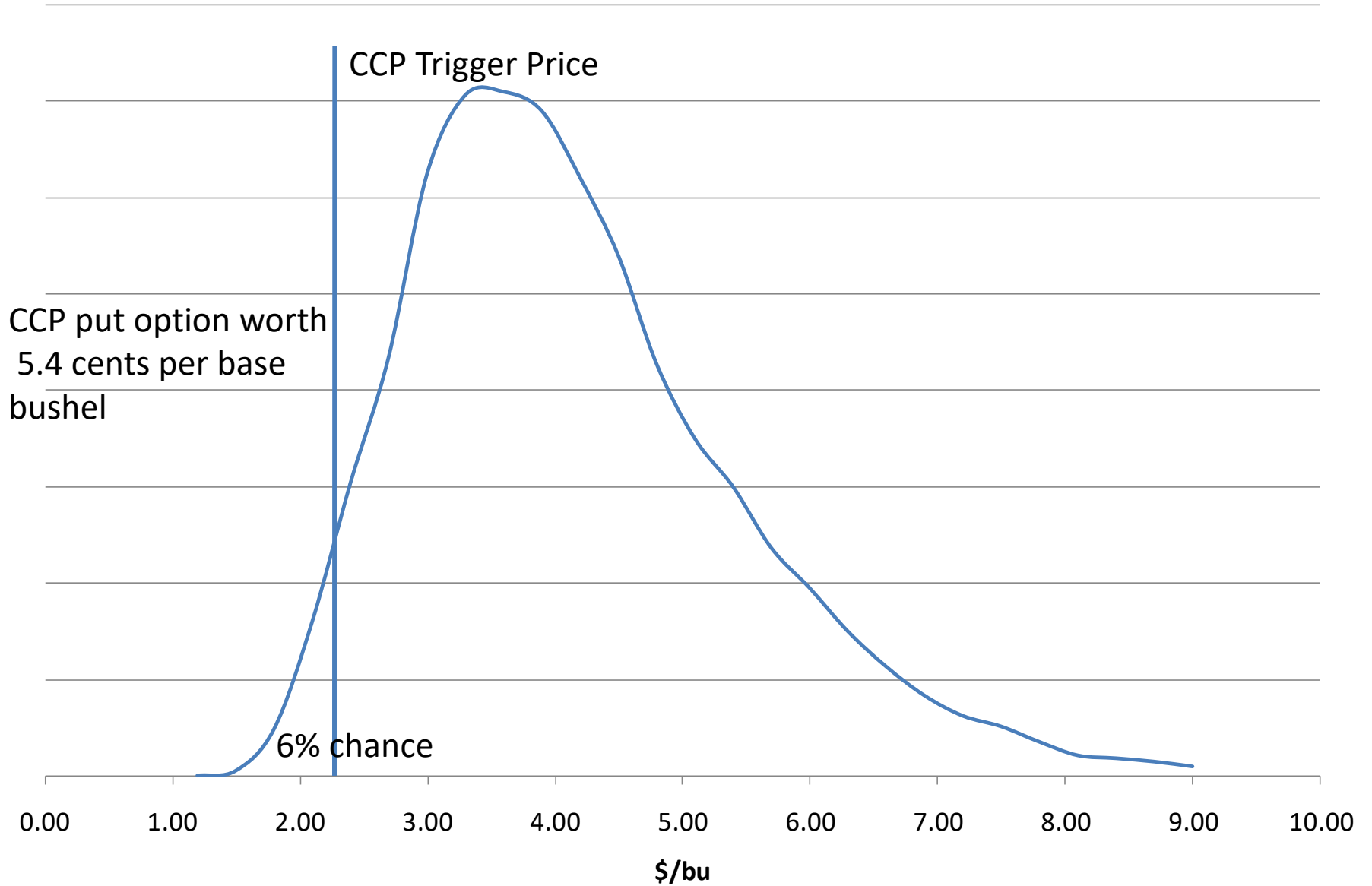
Market Estimate of the Distribution of Corn Prices in 2009/10



Calculating the Chances of a Payout from Farm Programs



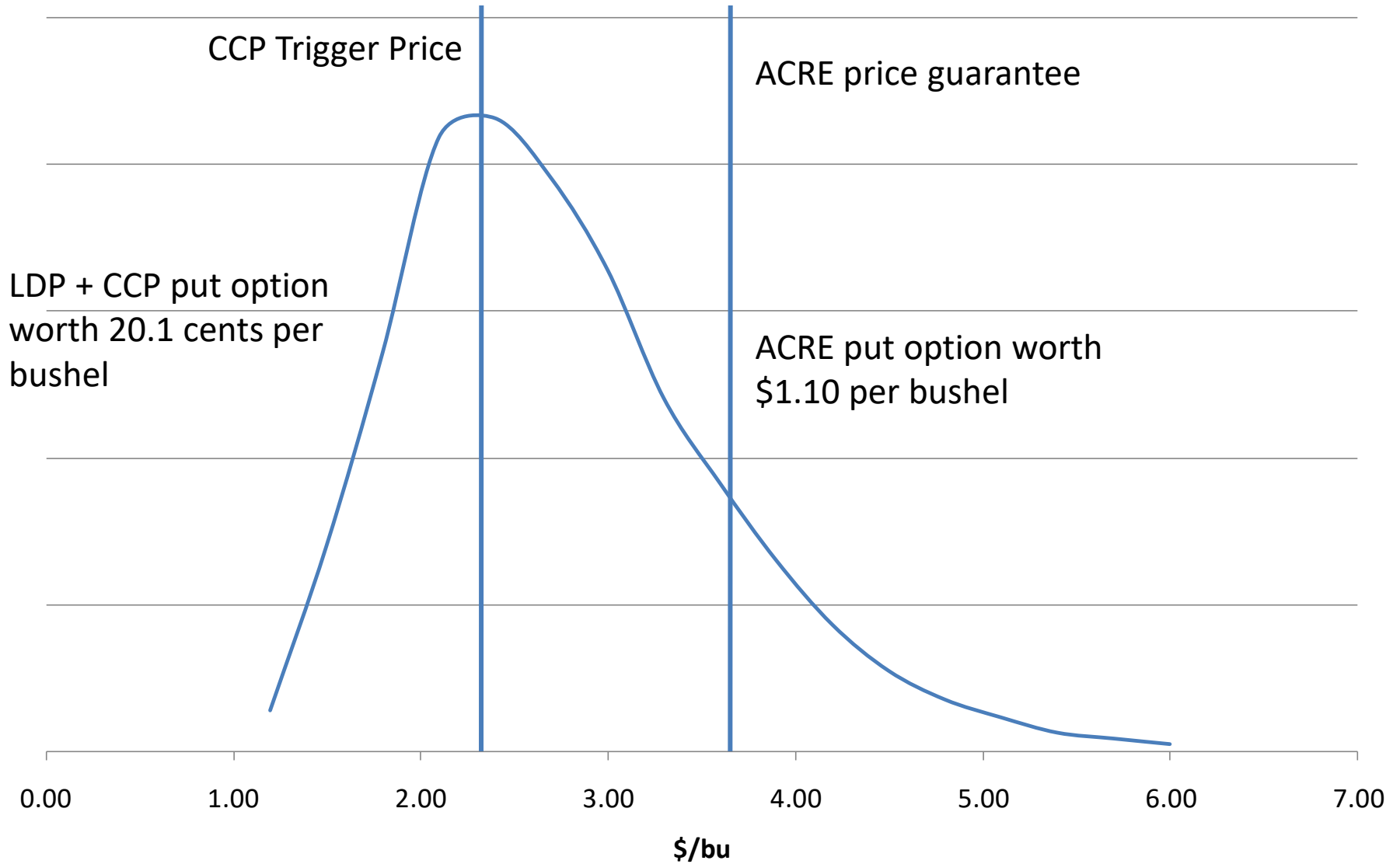
Calculating the Chances of a Payout from Farm Programs



What if Market Conditions Collapse

- Suppose projected corn prices drop by 35% to \$2.62
- The ACRE price for 2009 largely locked in
- Maximum 10% annual drop in guarantee in 2010 and beyond

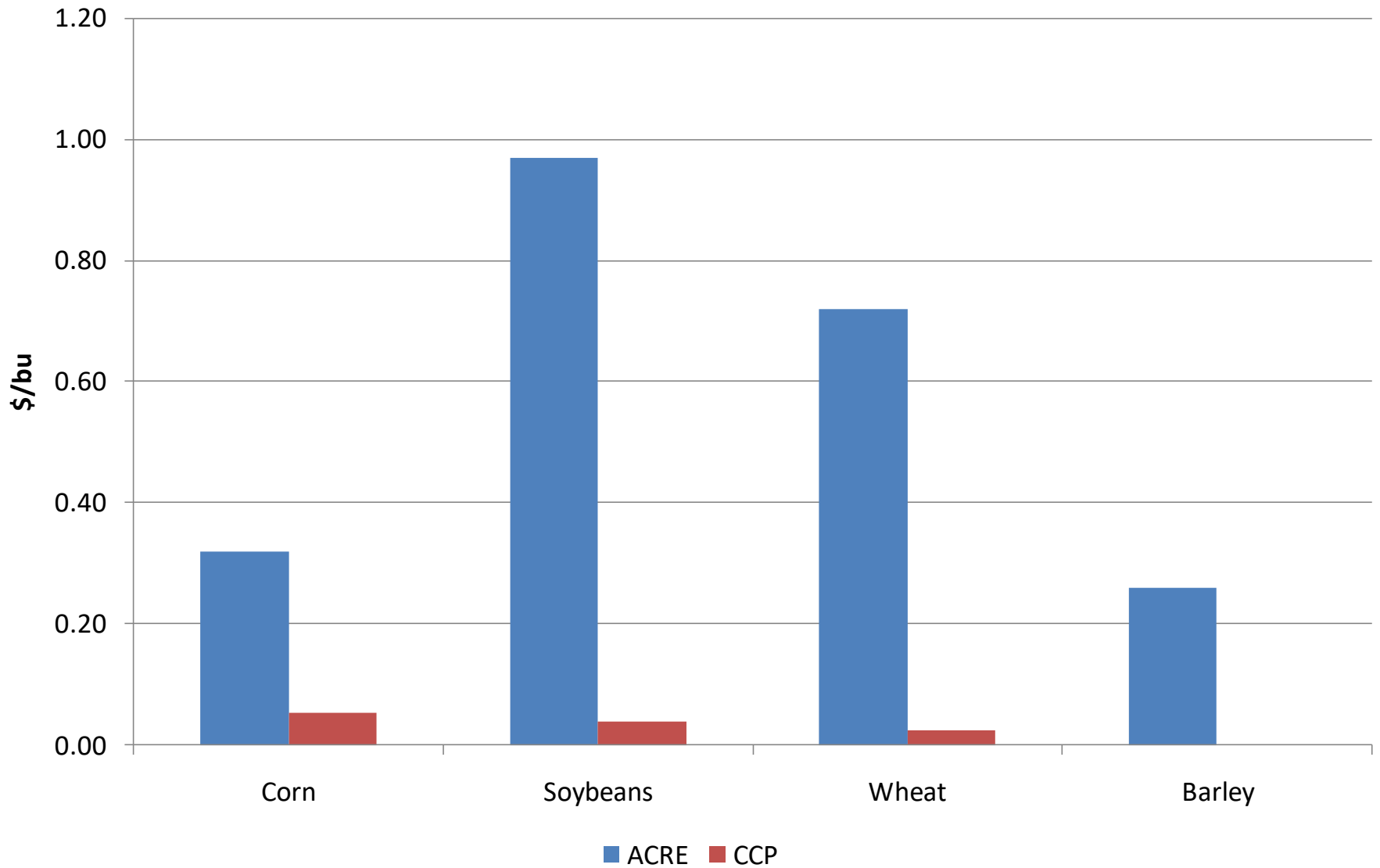
Distribution of Corn Prices in 2009/10 with a 35% Market Collapse



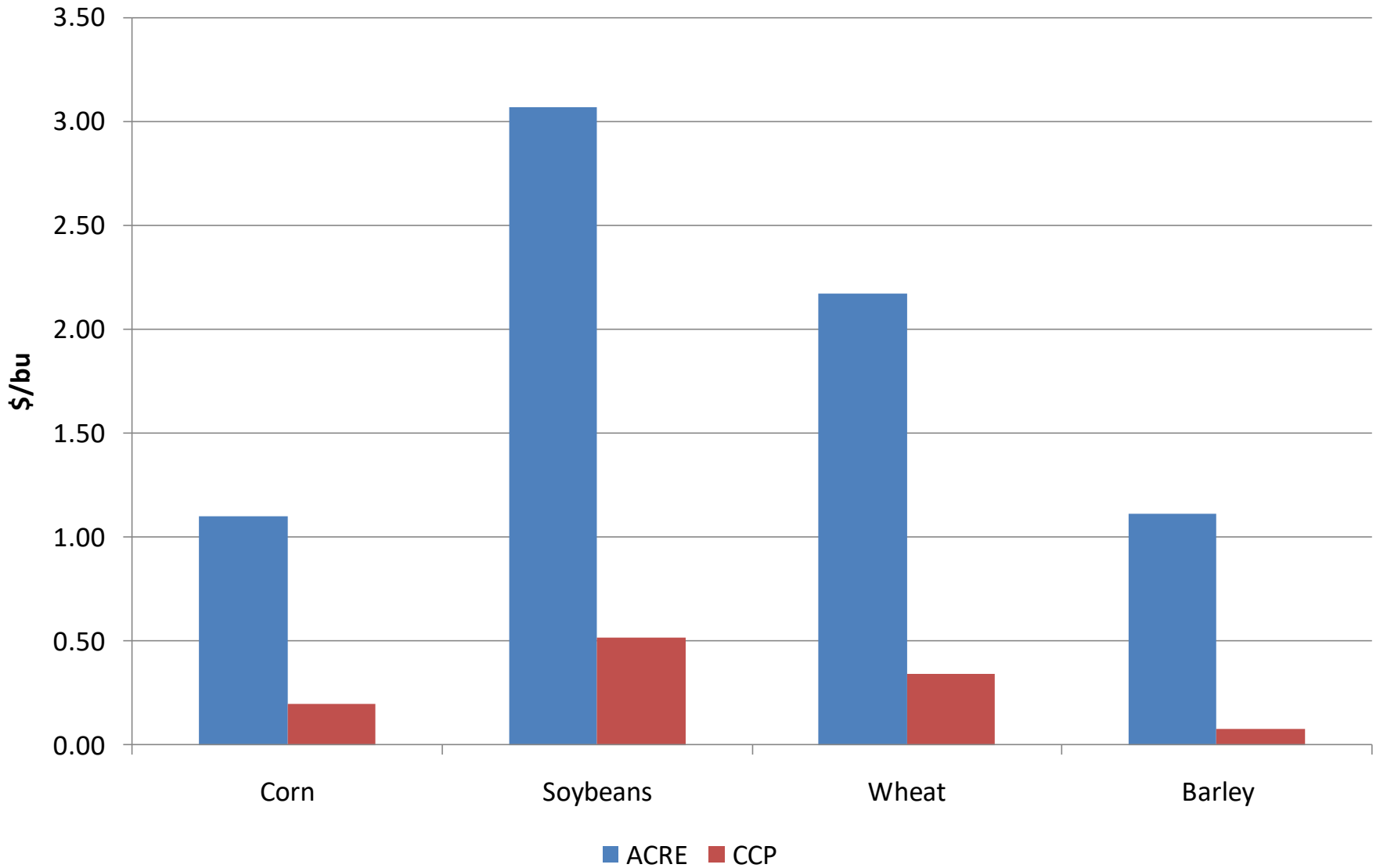
If Market Conditions Collapse

- Advantage to ACRE price guarantee even greater
- Limit on downward movement keeps ACRE advantage of price protection
- Eventually must be concerned with cap on payments and payment limitations

Value of Price Guarantee from ACRE and CCP at Futures-Indicated Price Levels



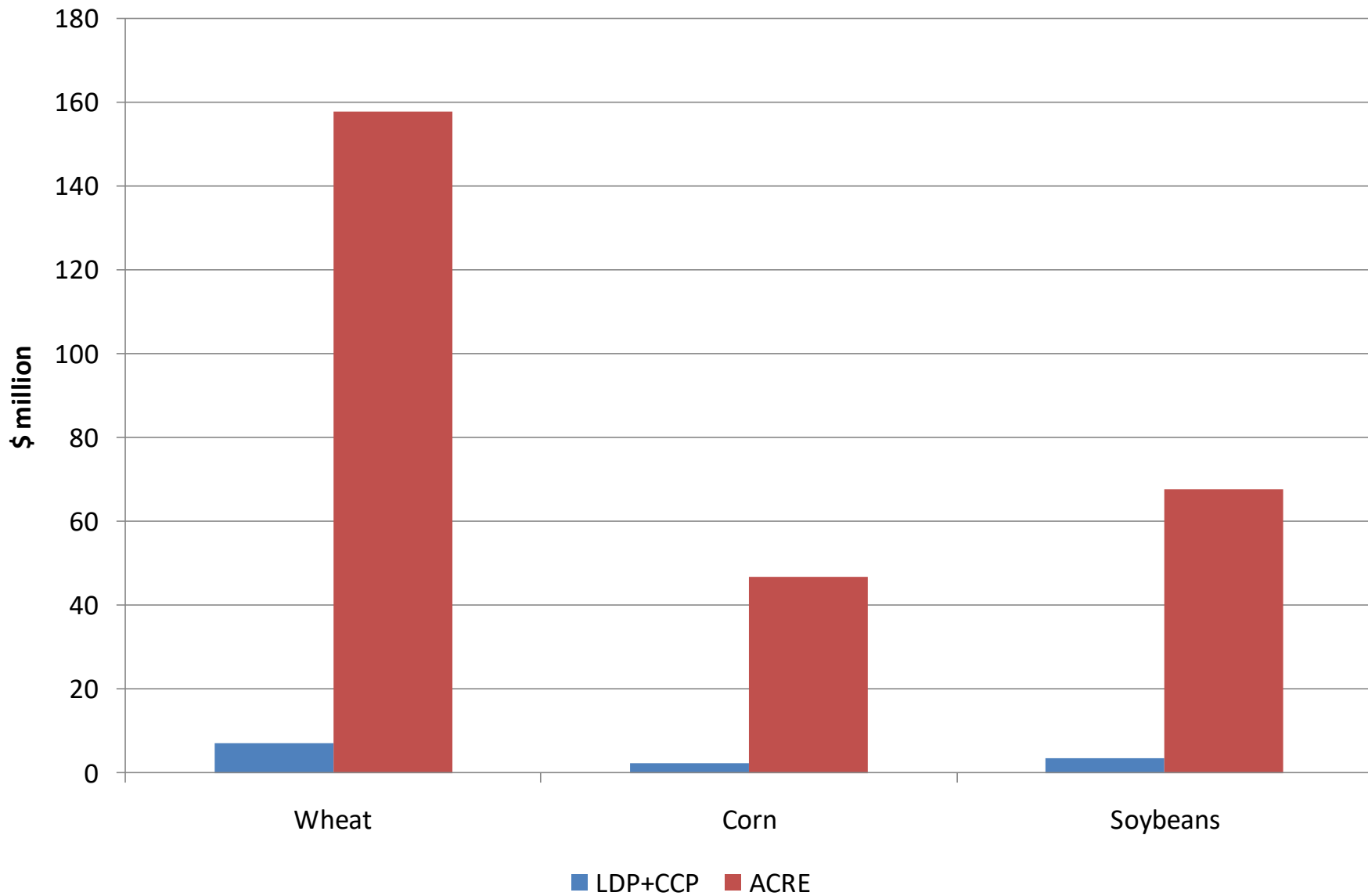
Value of Price Guarantee from ACRE and CCP with 35% Drop in Futures Prices



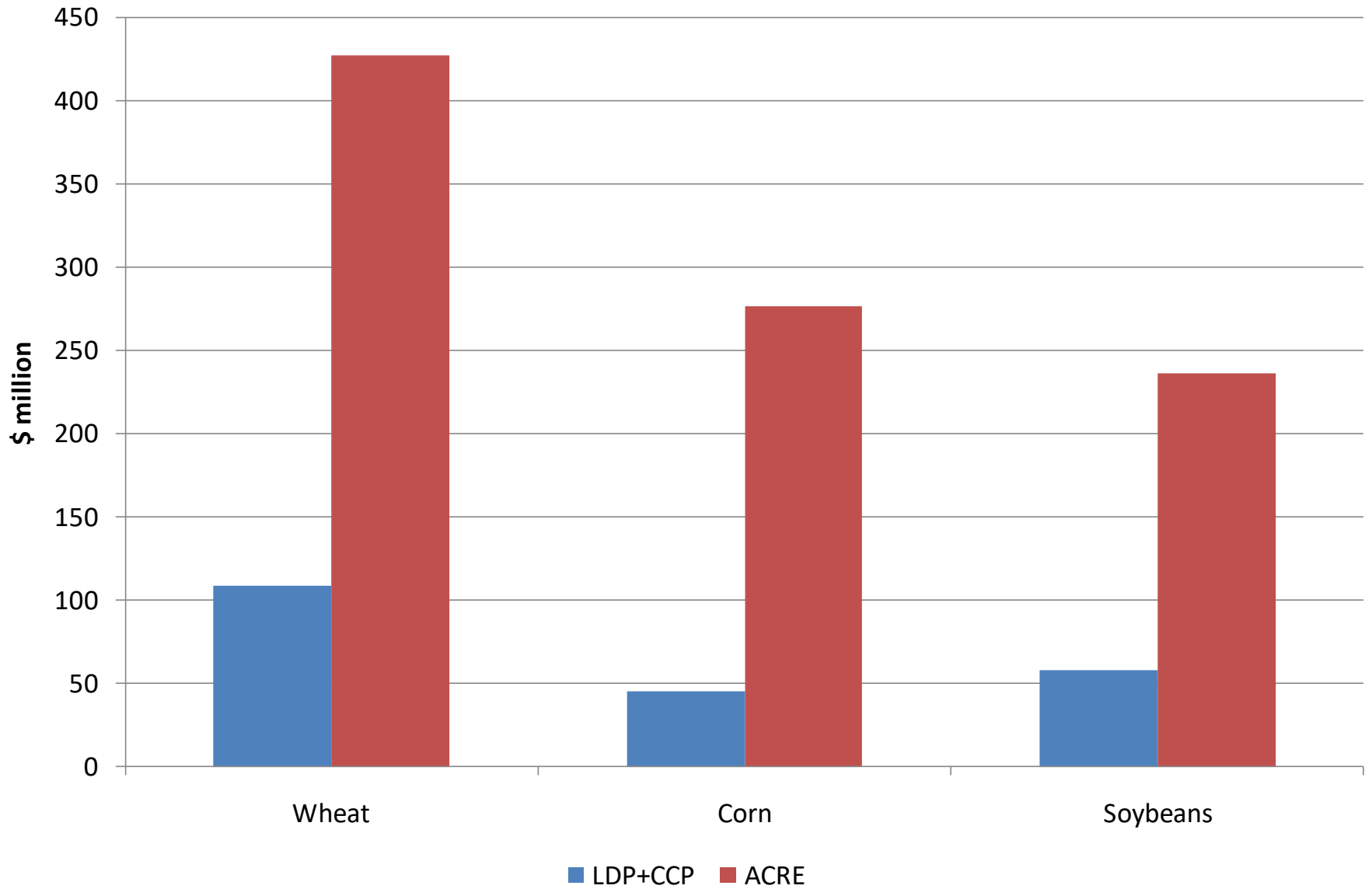
But ACRE Guarantees Revenue

- Cannot simply add up the value of the yield guarantee and the value of the price guarantee
 - Would understate value of ACRE guarantee because of double deductible
 - Would overstate value of ACRE guarantee if prices and yields move opposite each other

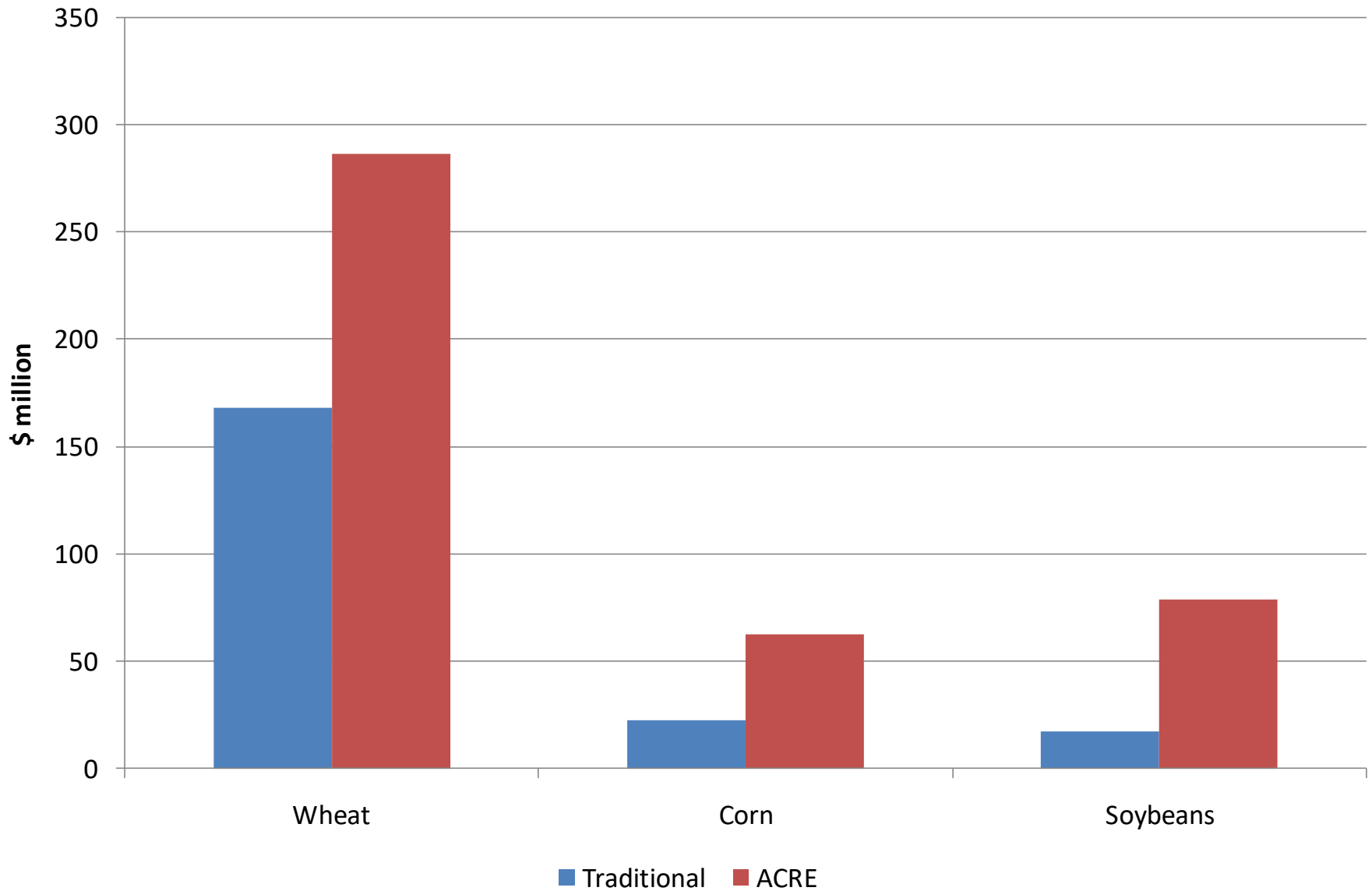
Total Expected LDP + CCP Payments and ACRE Payments: Average Price at Futures-Indicated Levels



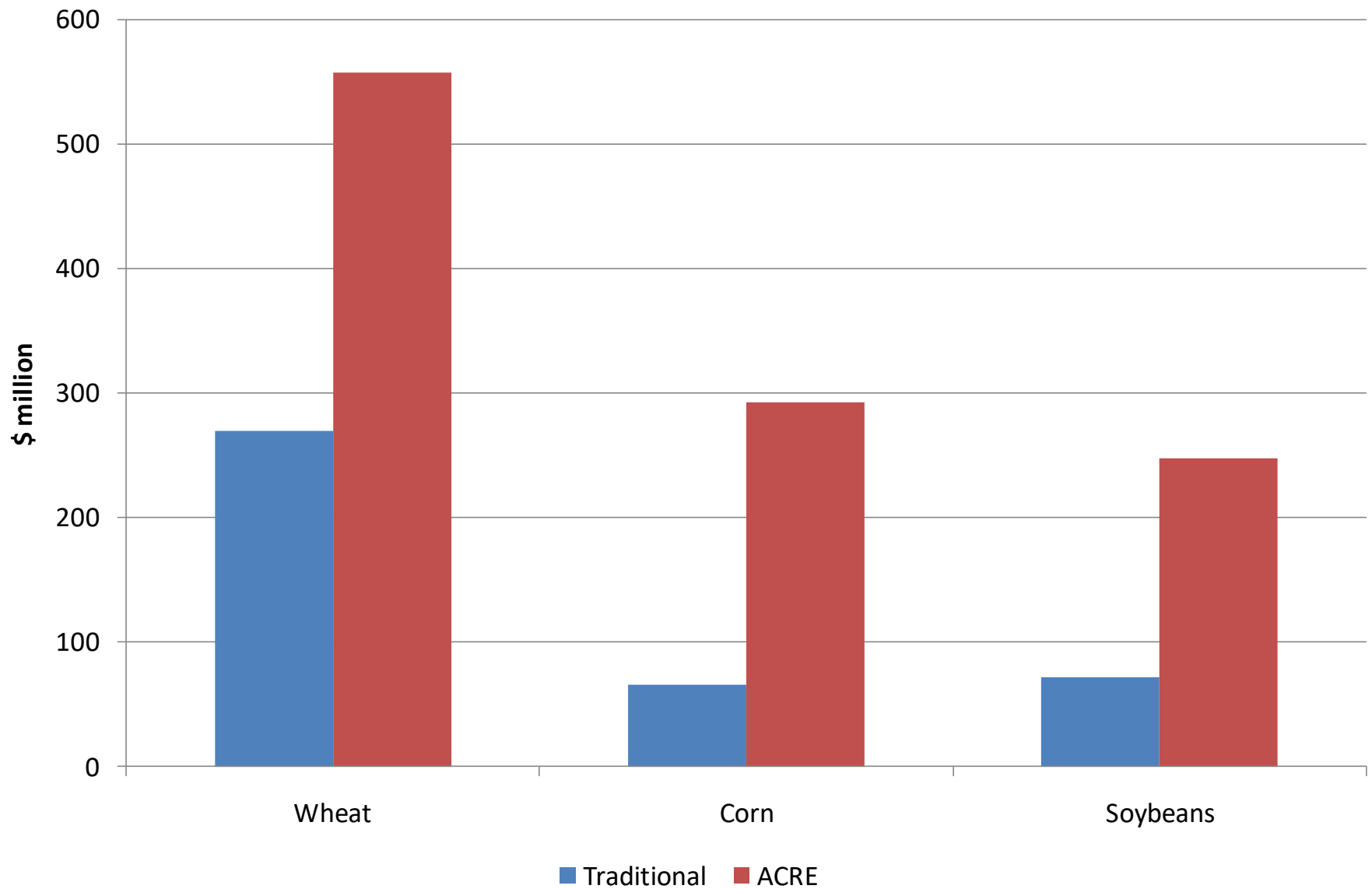
Total Expected LDP + CCP Payments and ACRE Payments: Average Price at 35% Lower Level



Total Expected Payments from Traditional Programs and ACRE: Average Price at Futures-Indicated Levels



Total Expected Payments from Traditional Programs and ACRE: Average Price at 35% Lower Level



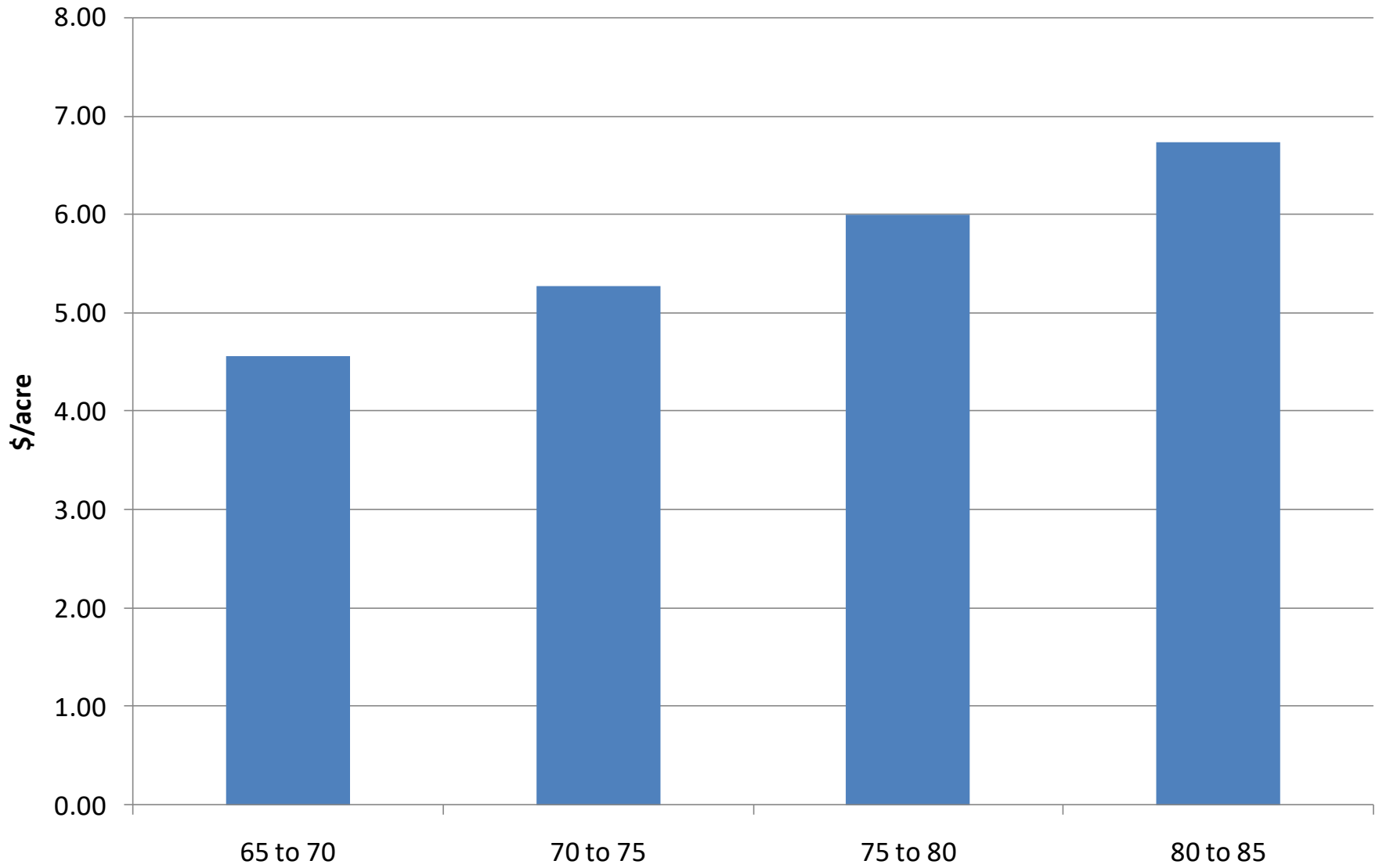
Summary of Findings

- ACRE unambiguously provides more average support than current farm programs
- The difference in farm support grows as market price drops
- Reasonably good chance that actual ACRE payment will be lower than loss in direct payment because prices will be high

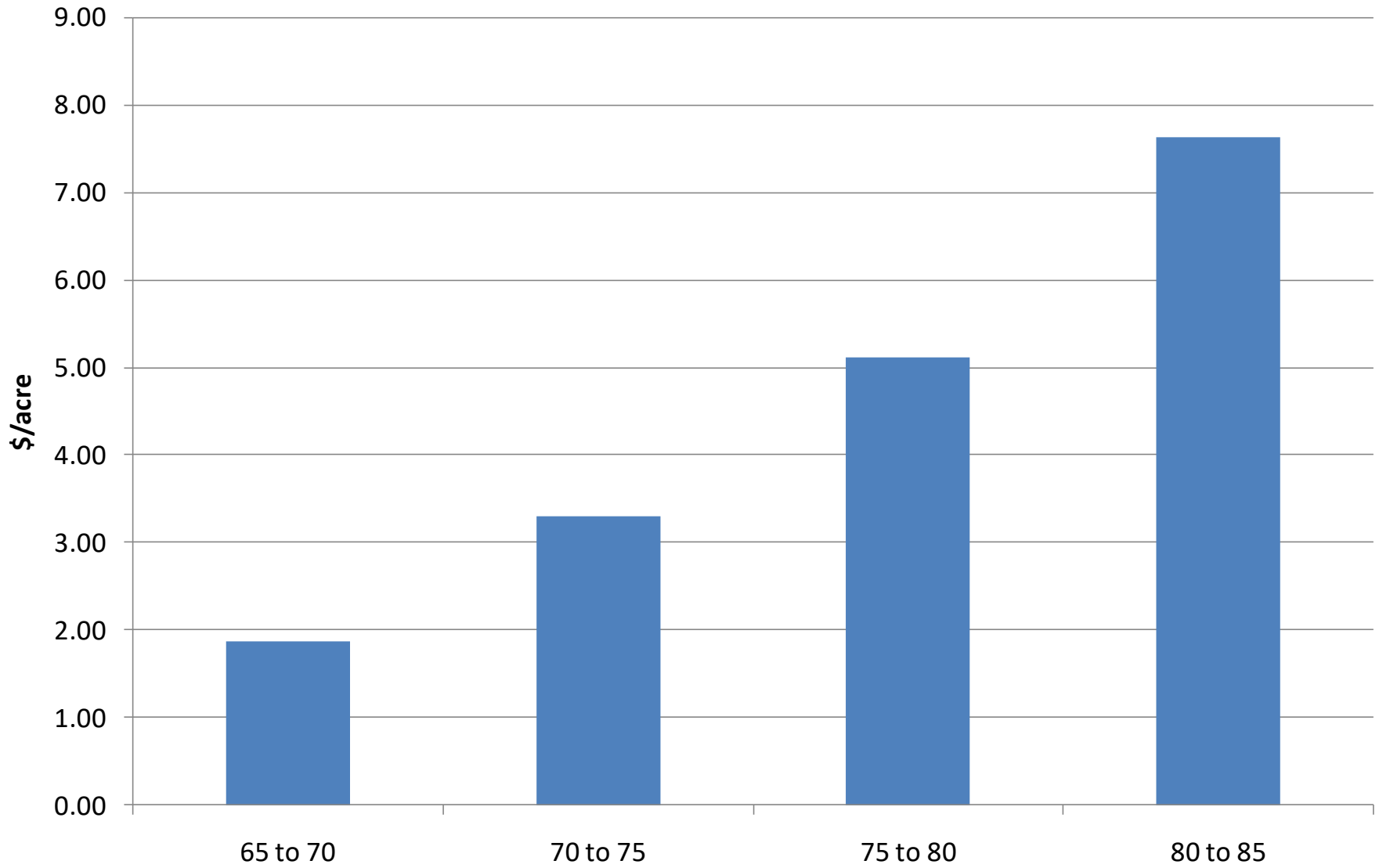
Reasons for Not Choosing ACRE

- Lack of yield history
 - FSA could fix this by simply substituting county average yields
- State yields do not track my yields
 - ACRE does not substitute for crop insurance, it substitutes for CCPs and part of DPs
- Why not use the 20% of direct payments and buy more crop insurance rather than ACRE?

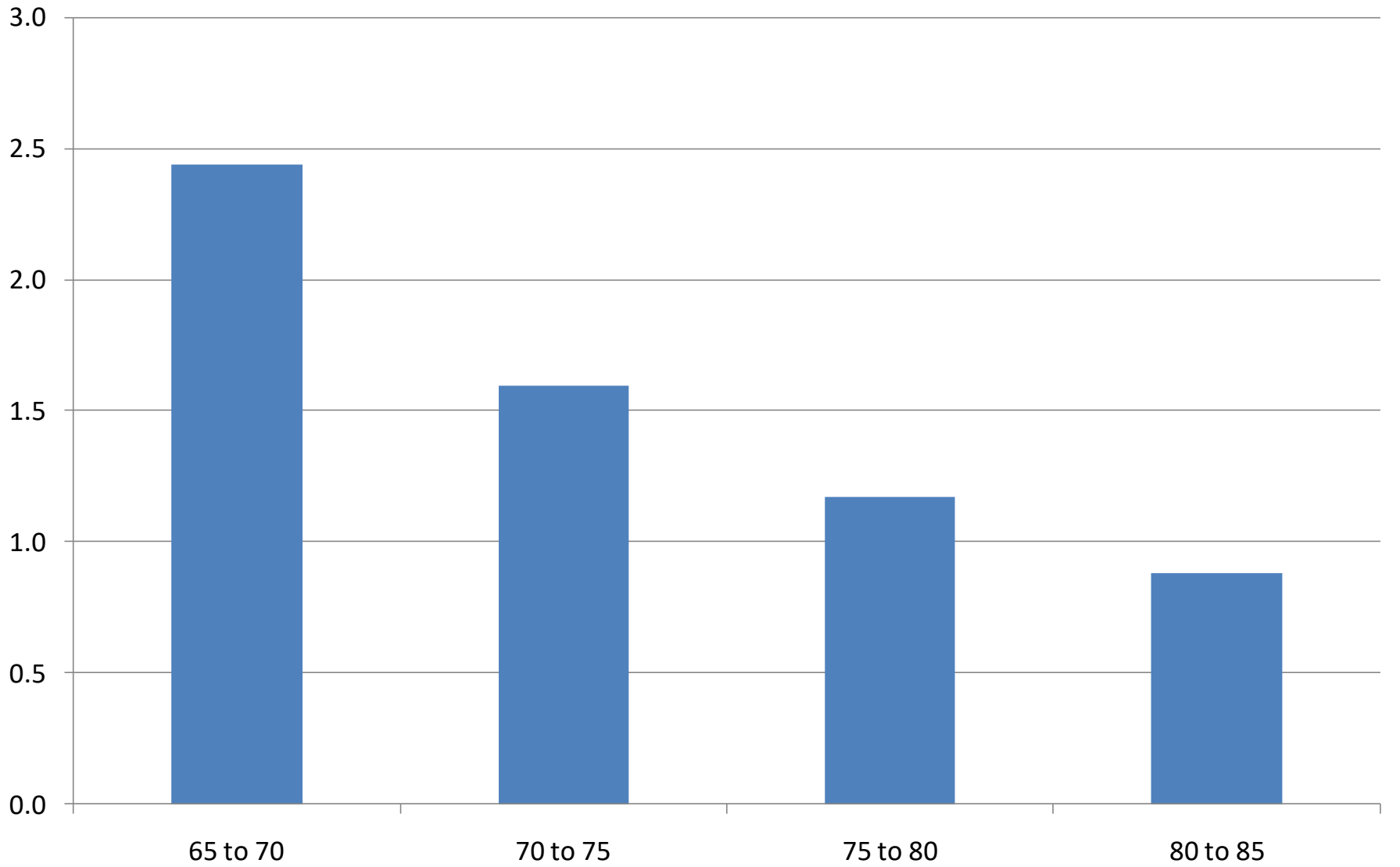
Additional Benefit from Buying Up in Crop Insurance for Cass County Wheat Producer



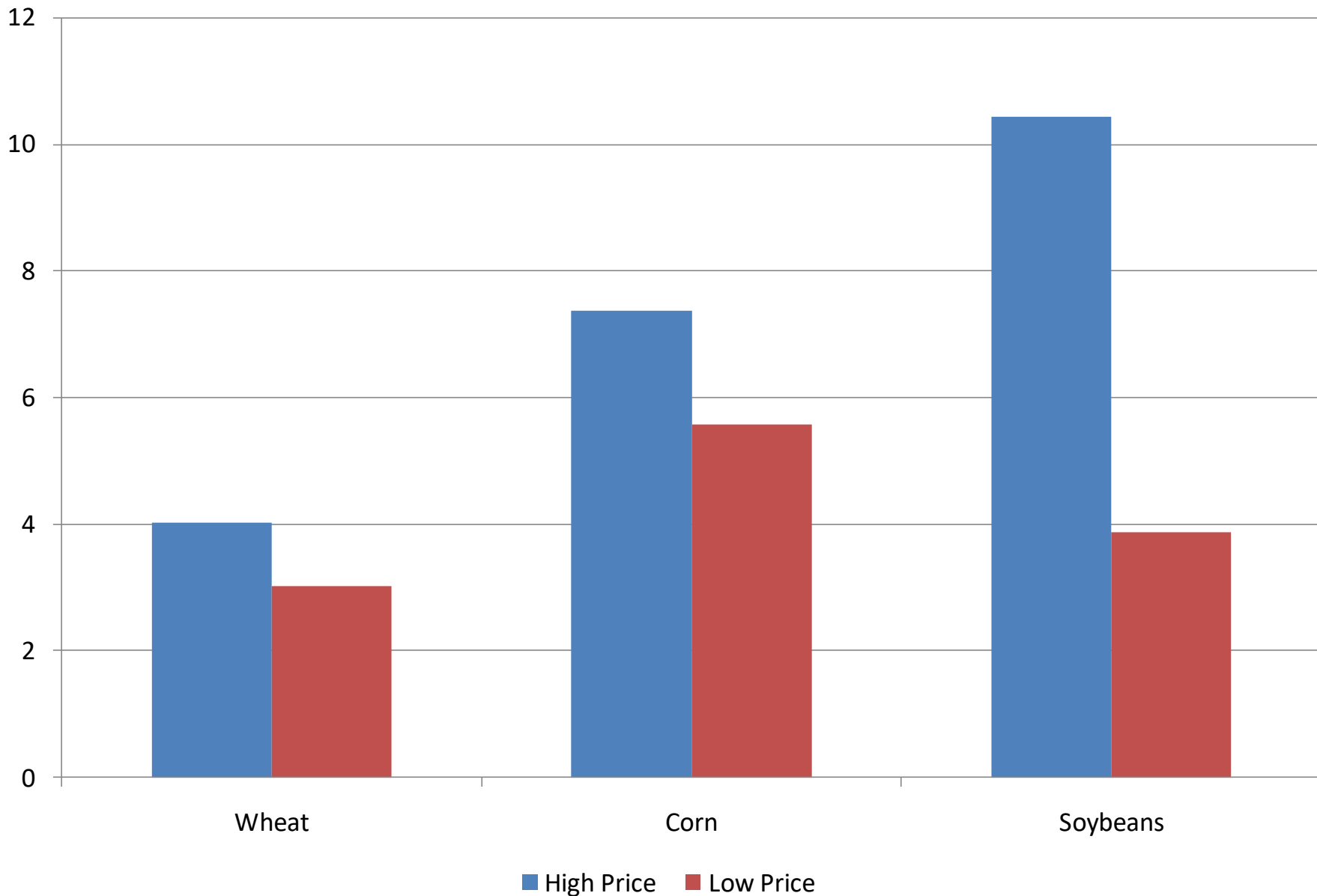
Additional Producer Premium from Buying Up in Crop Insurance for Cass County Wheat Producer



Return per Additional Dollar Paid for Increased Crop Insurance Coverage



Return to ACRE per Dollar Given up in Direct Payments



A Comparison of Return per Additional Dollar Paid for ACRE and Crop Insurance

