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# Risk Management in Farm Policy: What Is ACRE's Part?

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Presentation for the  
USDA Economists Group and the Council on Food, Agricultural and Resource Economics

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# Risk Management in Farm Policy: A Brief History

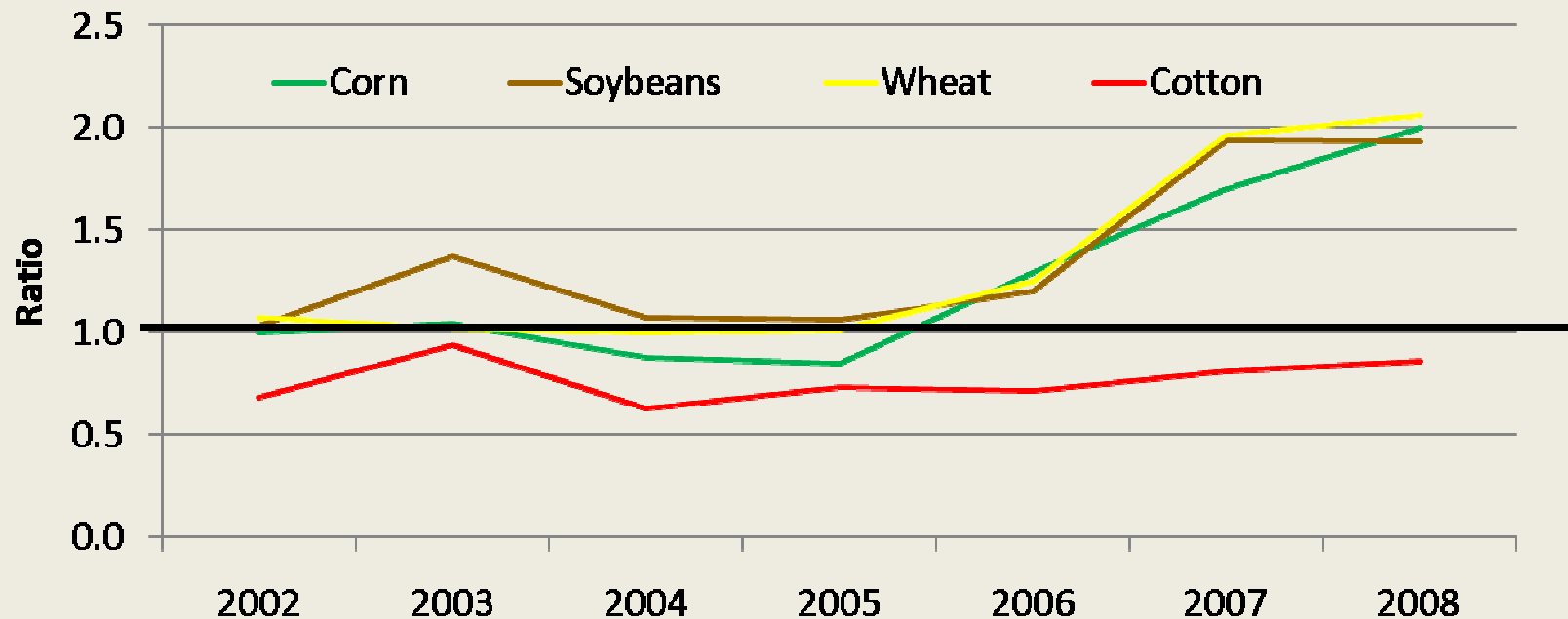
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- Price risk: commodity programs
- Yield risk: crop insurance
  - Disaster assistance
- Revenue = price multiplied by yield
- Iowa proposal (in the 1990s)
- Crop revenue insurance
- 2008 farm bill 



# Market Prices for Corn, Soybean and Wheat Above Target Levels

*Market Price Divided by Effective Target Price*



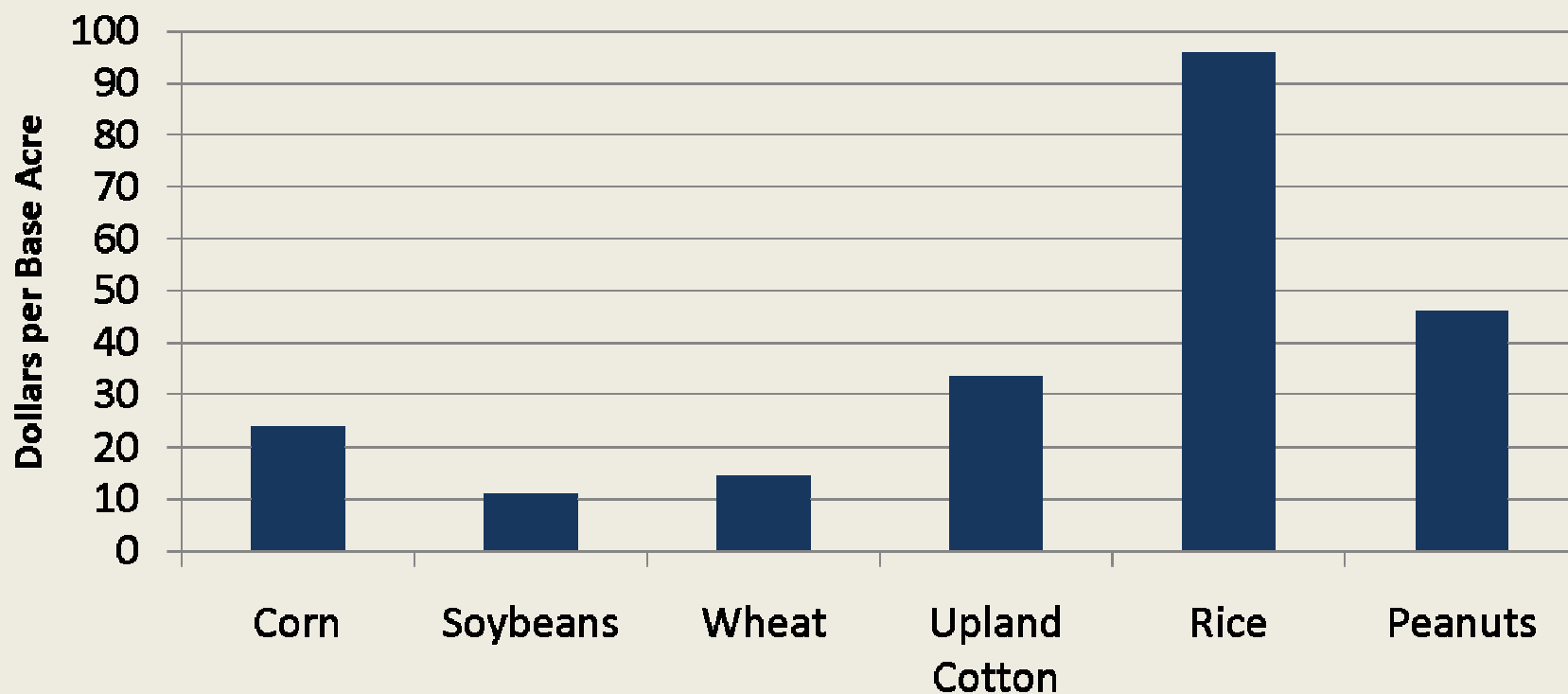
Market price = Marketing-year average price, 2002-07; midpoint of projected price range for 2008. Effective target price = target price – direct payment rate.

Sources: Compiled by USDA, Economic Research Service from marketing-year average prices, USDA, National Agricultural Statistics Service, and from projected prices, USDA, World Agricultural Supply and Demand Estimates, October 10, 2008.



# Direct Payments: Greatest for Rice, Peanuts and Cotton

*Direct Payments for Crop Year 2009/10*

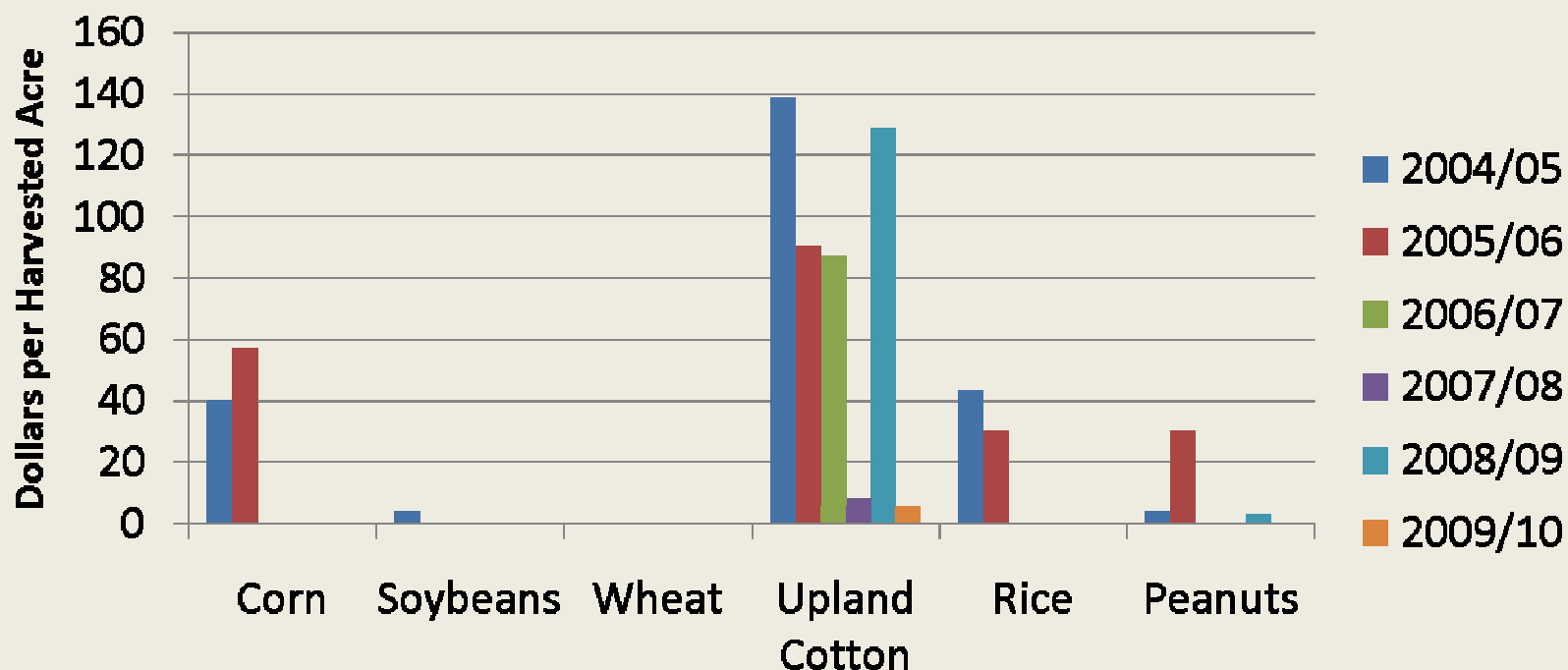


Sources: Compiled by USDA, Economic Research Service from USDA, Farm Service Agency and USDA, National Agricultural Statistics Service data.



# Marketing Loan Benefits Have Been Large for Cotton

*Marketing Loan Benefits by Crop Year*



Includes marketing loan gains, certificate gains, and loan deficiency payments.  
2009/10 values are forecasts.

Sources: Compiled by USDA, Economic Research Service from USDA, Farm Service Agency and USDA, National Agricultural Statistics Service data.



# ACRE Included in 2008 Farm Act, First Available in 2009

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- Average Crop Revenue
  - Revenue benchmarks based on recent market prices and yields
  - Double trigger: Both State and farm revenue must fall below benchmark levels
- Election
  - Forgo target-price-based Counter-Cyclical Payments
  - Direct Payments reduced by 20 percent
  - Marketing Loan Rates reduced by 30 percent



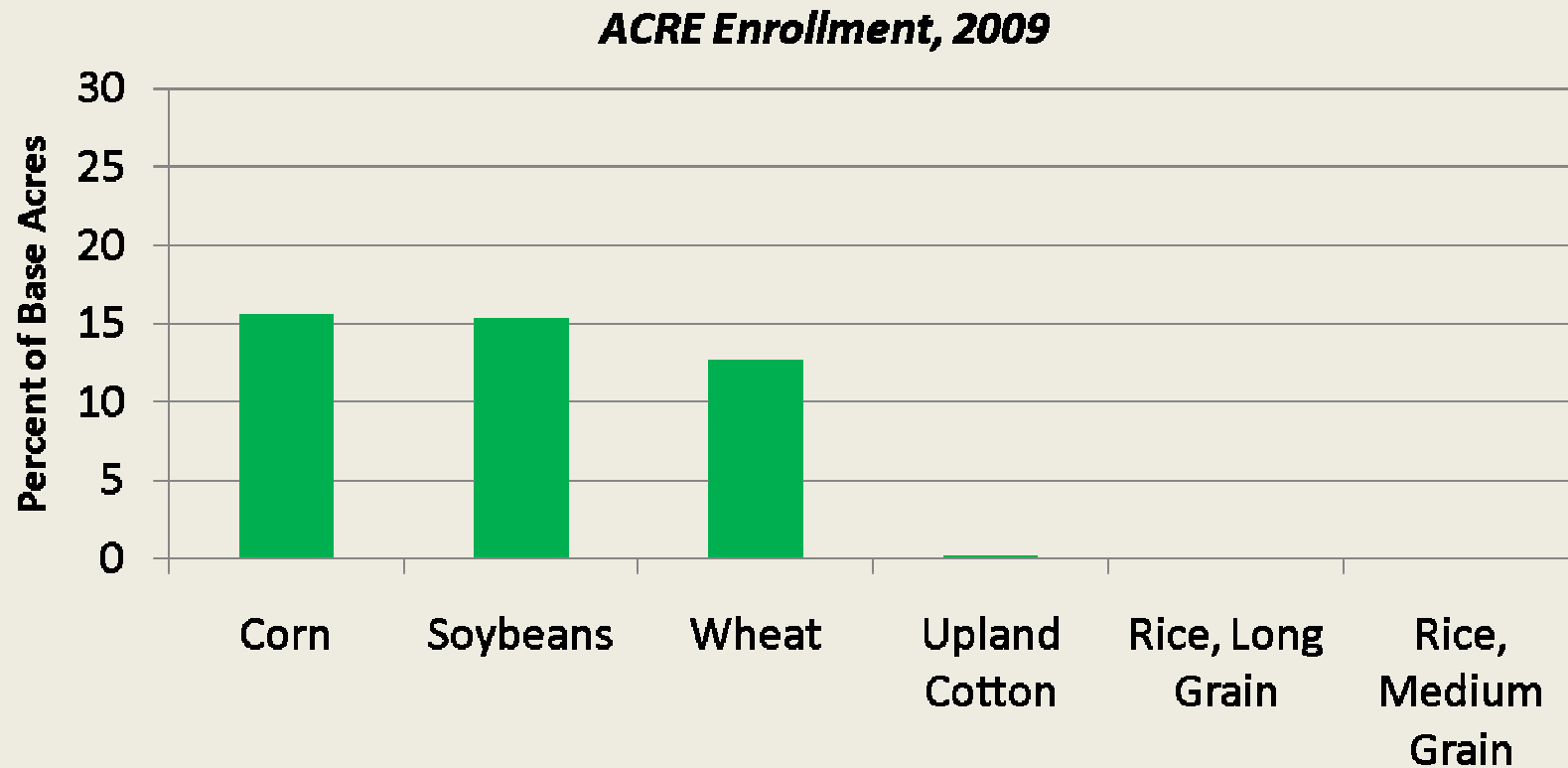
# Additional ACRE Considerations

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- Information/knowledge/expectations at sign-up deadline
- Annual enrollment, but once enrolled, in through life of farm act
  - Crop-by-crop coverage, but all crops with ACRE are enrolled
  - Landlords and tenants have to agree
- Year-to-year change in benchmark cannot exceed 10 percent
- Maximum payment cannot exceed 25 percent of State benchmark revenue



# ACRE Participation, So Far



Source: Compiled by USDA, Economic Research Service from USDA, Farm Service Agency data.



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# Simulation Analysis

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# Our Model

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- Simulates crop revenue variability for corn, soybeans, wheat and cotton
  - County-crop representative farm acres
  - Built with National Agricultural Statistics Service yield and price series and Risk Management Agency base county yield insurance rates
  - Empirical price-yield correlations
  - Empirical farm-State revenue correlations
  - Represents 80 – 90 percent of planted acres of corn, soybeans, wheat and cotton
- ACRE results presented are based on multiple draws, simulated “first-year” outcomes



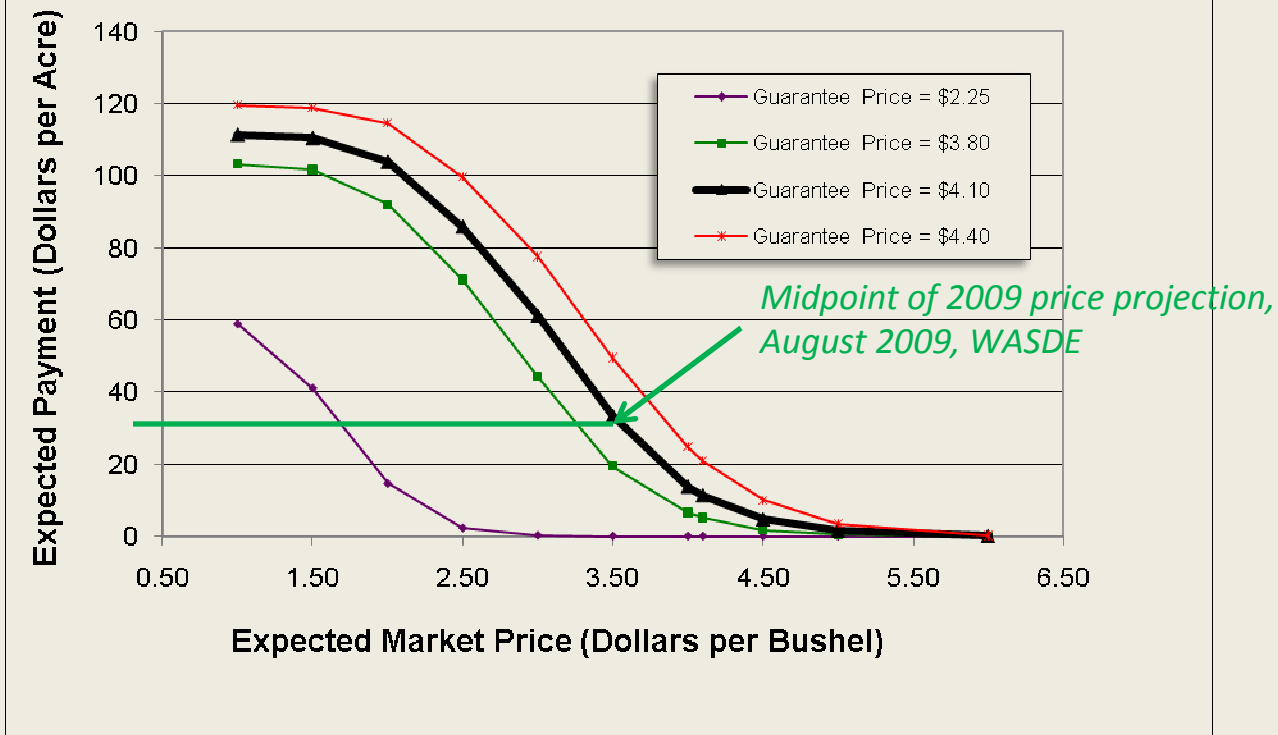
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# Relationship between ACRE Guarantee Price and Market Price

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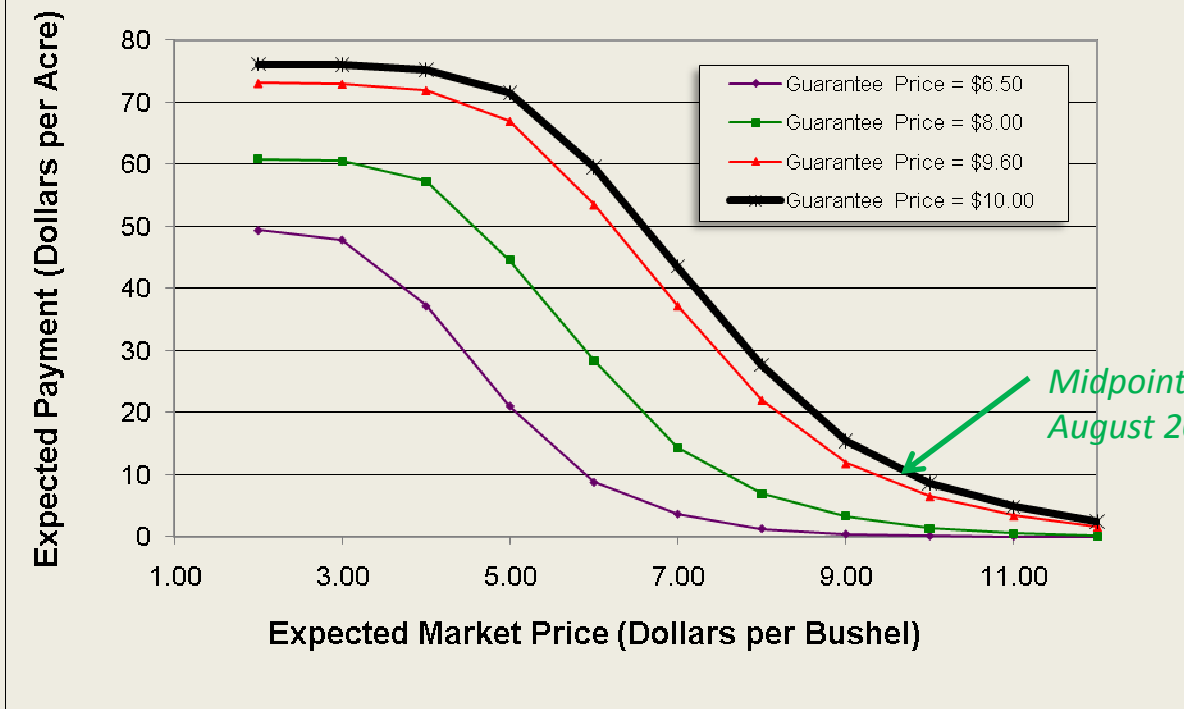
## US Average Expected ACRE Payment: Corn



Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



## US Average Expected ACRE Payment: Soybeans

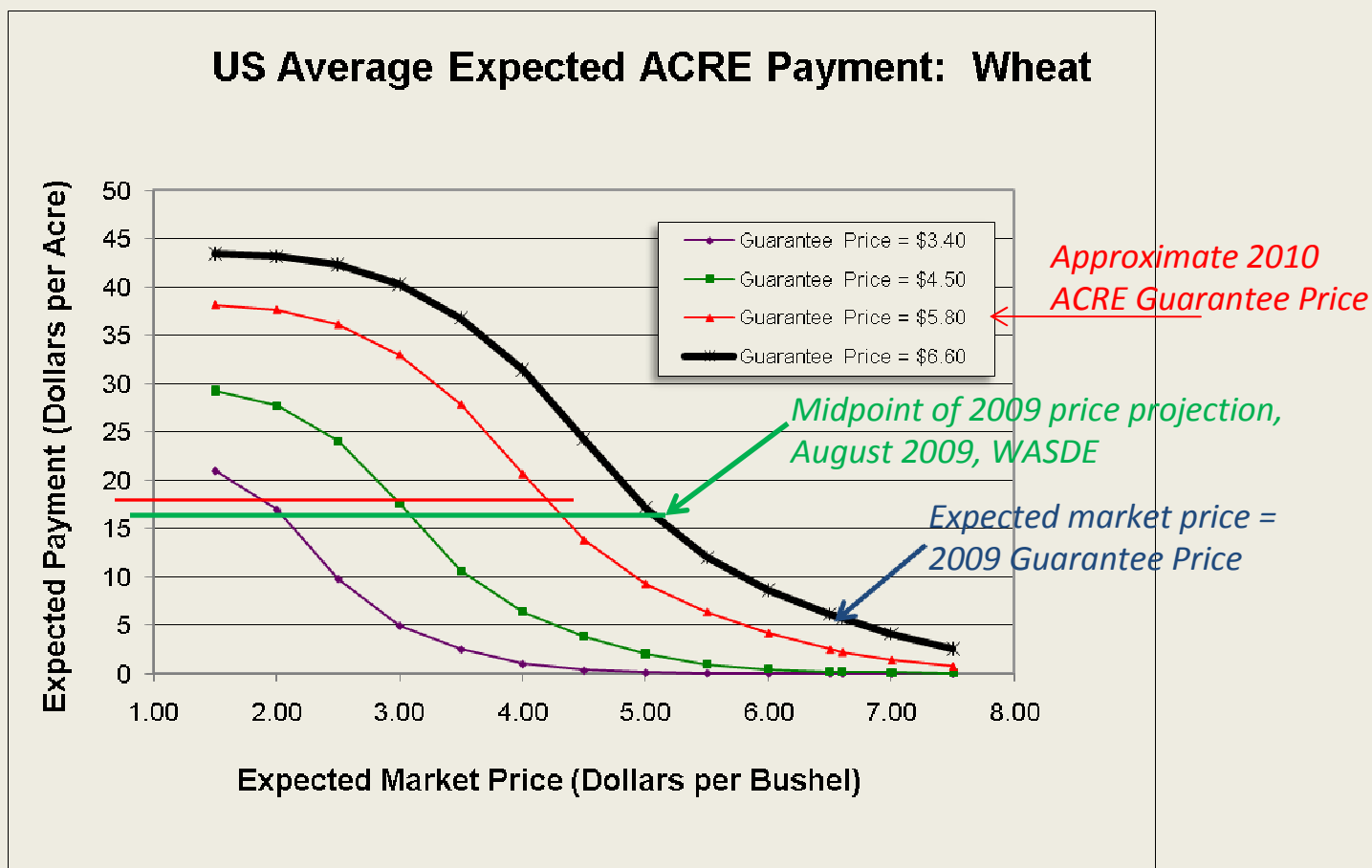


Midpoint of 2009 price projection, August 2009, WASDE

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



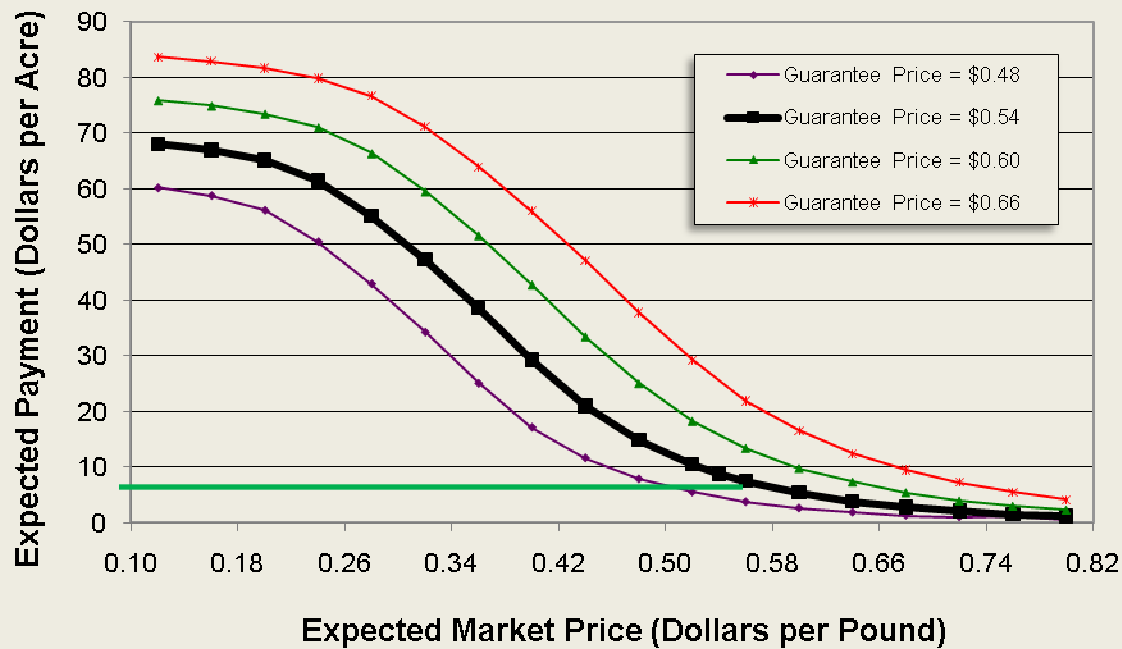
## US Average Expected ACRE Payment: Wheat



Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



## US Average Expected ACRE Payment: Cotton



Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



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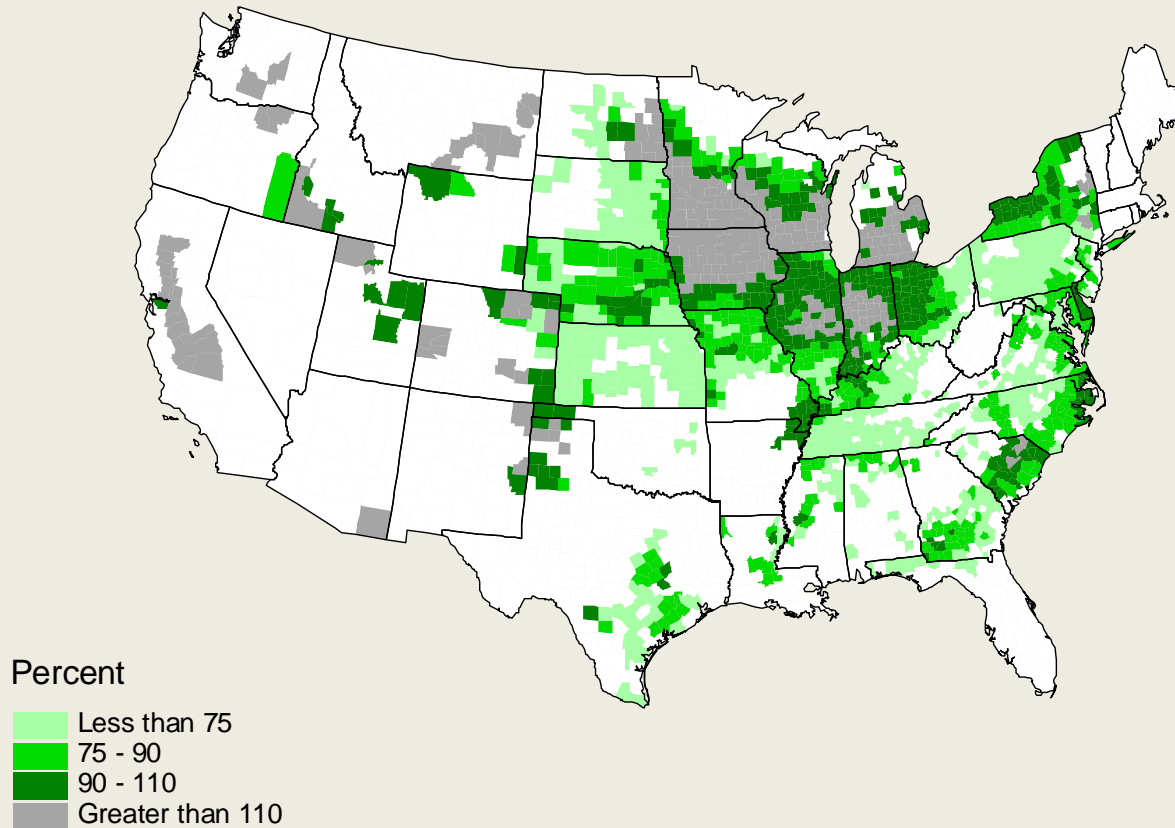
# Geographic Distribution of Expected ACRE Payments

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## ACRE Payment as Percent of US Average ACRE Payment: Corn

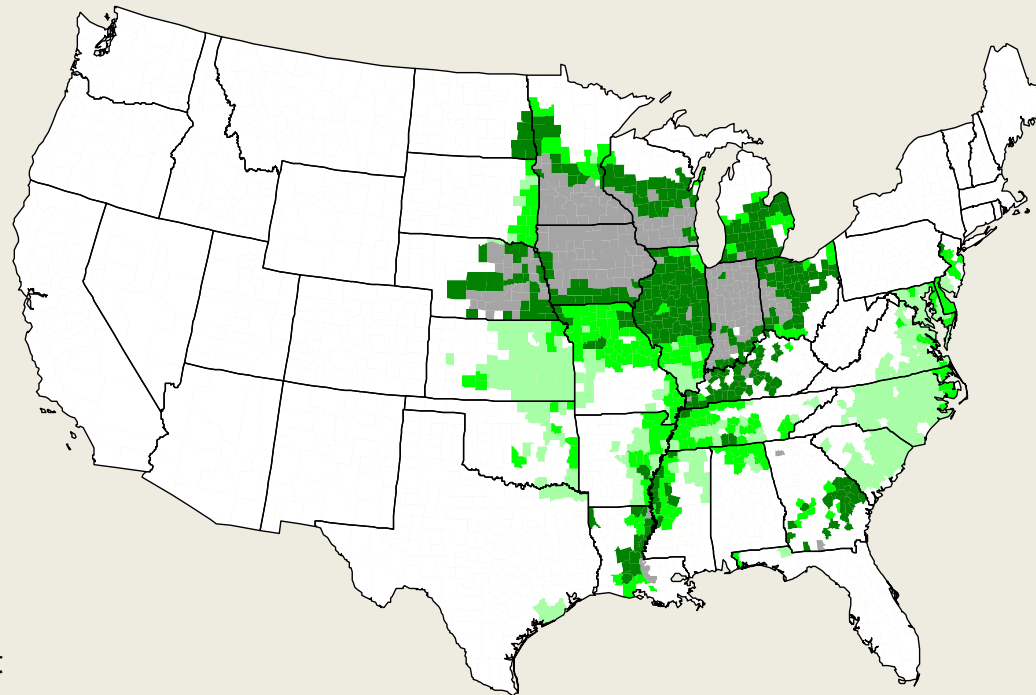


Simulations based on ACRE guarantee price and expected marketing-year average price of \$4.10 per bushel. Expected U.S. average payment = \$11.38 per acre.  
Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



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## ACRE Payment as Percent of US Average ACRE Payment: Soybeans



### Percent

- Less than 75
- 75 - 90
- 90 - 110
- Greater than 110

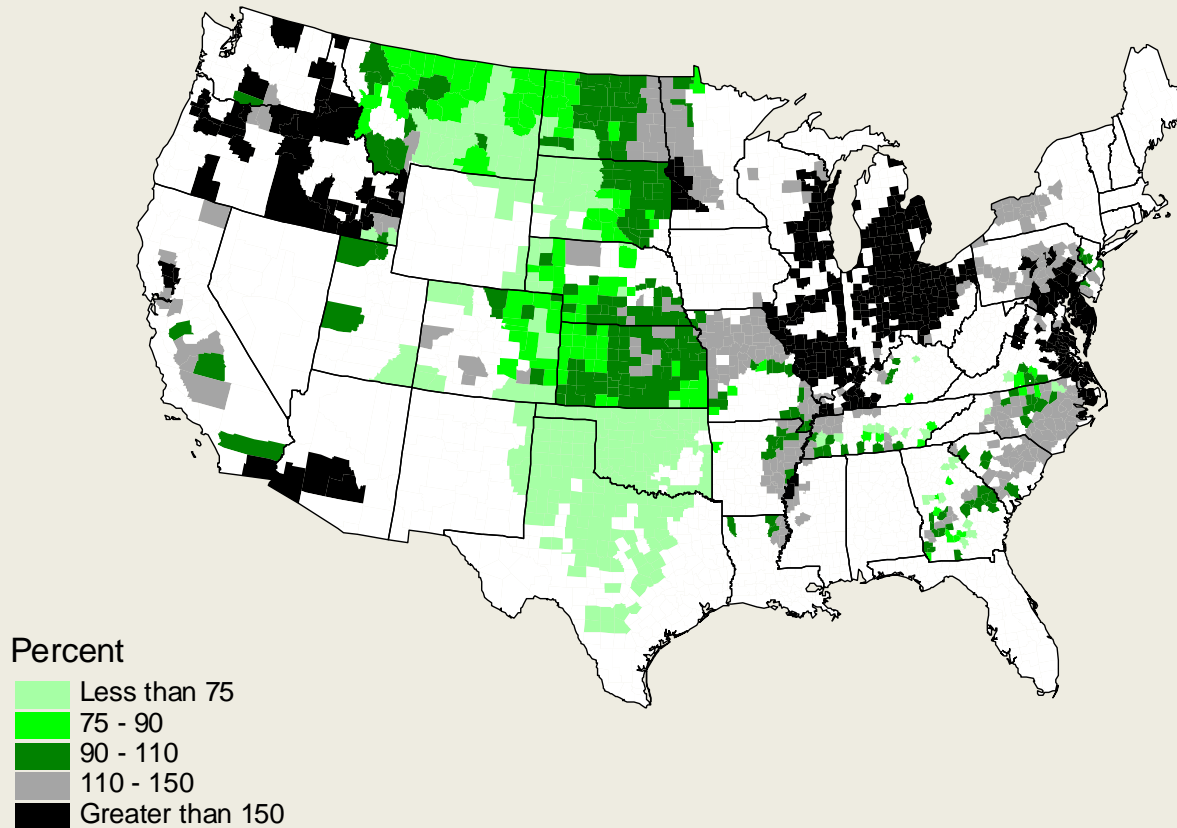
Simulations based on ACRE guarantee price and expected marketing-year average price of \$10.00 per bushel. Expected U.S. average payment = \$8.56 per acre.

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



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## ACRE Payment as Percent of US Average ACRE Payment: Wheat



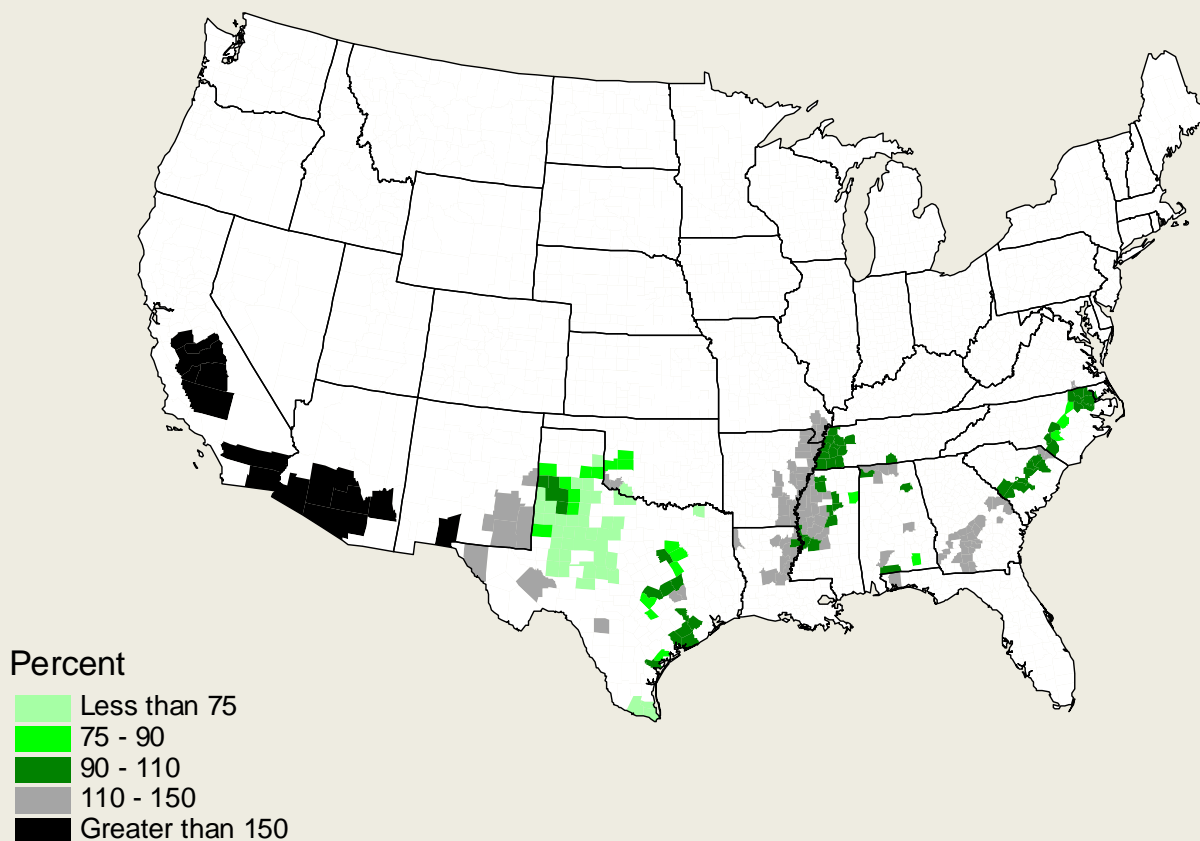
Simulations based on ACRE guarantee price and expected marketing-year average price of \$6.60 per bushel. Expected U.S. average payment = \$5.69 per acre.

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



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## ACRE Payment as Percent of US Average ACRE Payment: Cotton



Simulations based on ACRE guarantee price and expected marketing-year average price of \$0.54 per pound. Expected U.S. average payment = \$8.90 per acre.

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



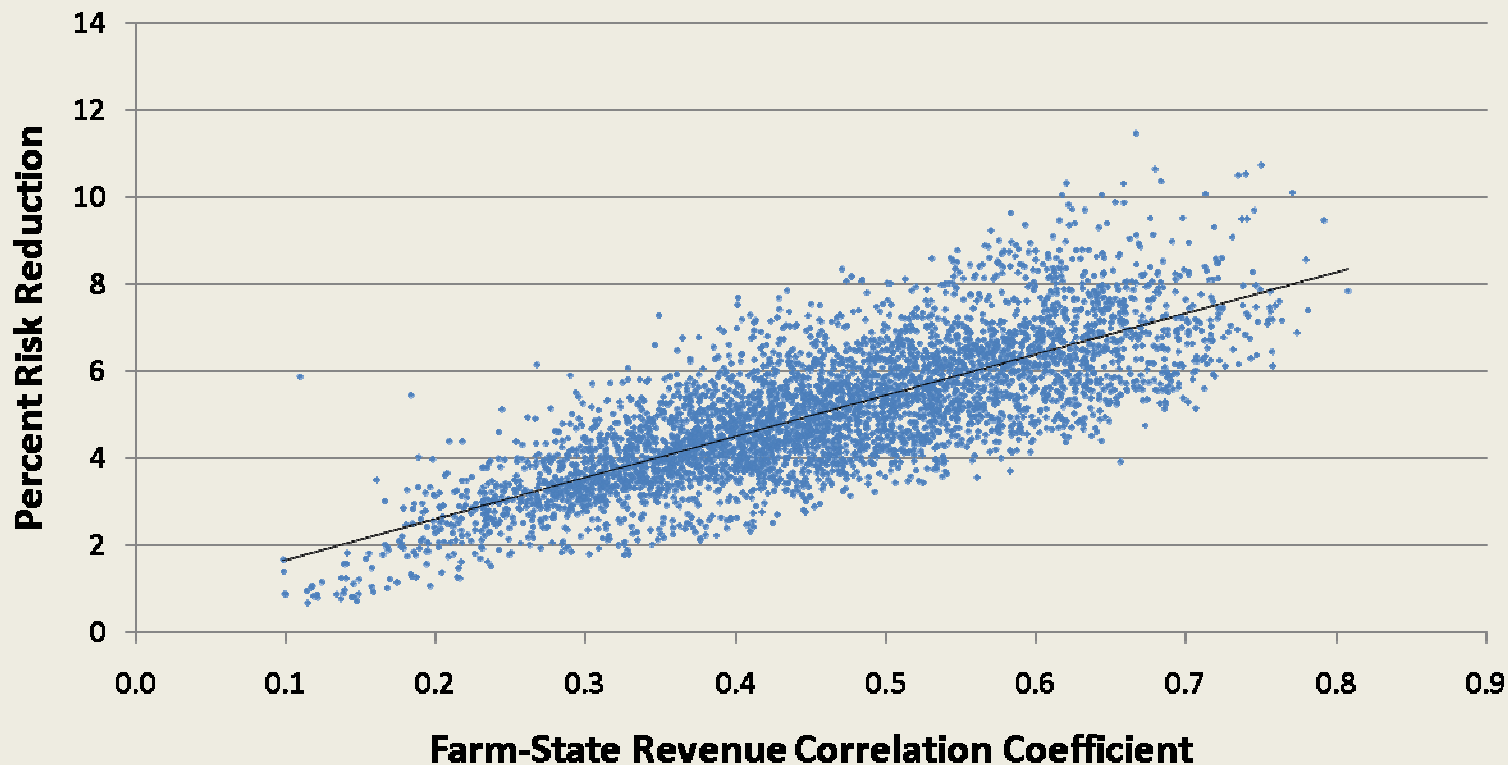
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# Risk Reduction from ACRE

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# ACRE Risk Reduction Strongly Related to Correlation between Farm and State Revenue



Representative farm acre observations: corn, soybeans, wheat and cotton.

Risk reduction = percent decrease in coefficient of variation of revenue when ACRE payments are included.

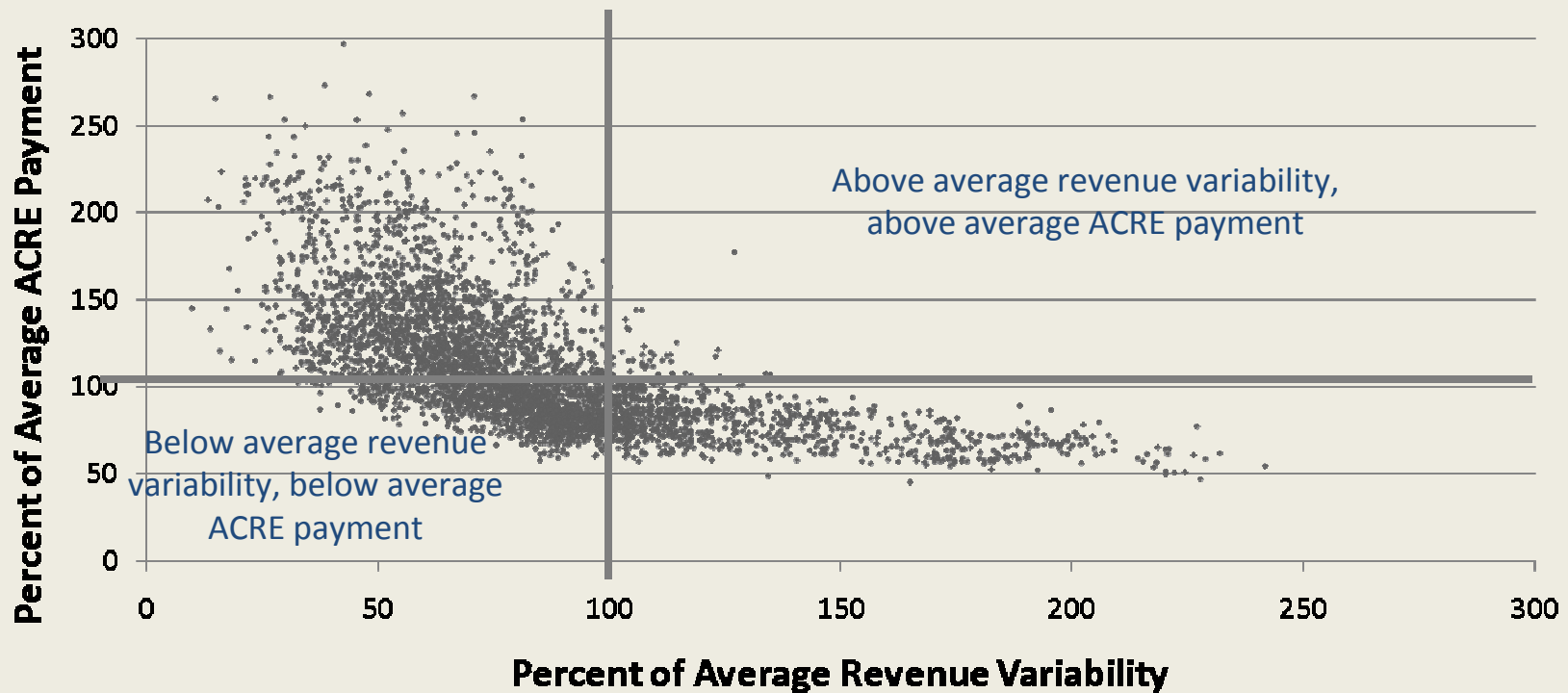
Price scenario: expected market price = guarantee price.

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



# Relative ACRE Payments and Relative Revenue Variability

**Revenue Variability and ACRE Payments**



Representative farm acre observations: corn, soybeans, wheat and cotton.

Price scenario: Expected market price = guarantee price.

Source: USDA, Economic Research Service simulations based on data from USDA, National Agricultural Statistics Service and USDA, Risk Management Agency.



# Characteristics of ACRE Payments

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- Expected ACRE payments increase as revenue guarantee levels, based on recent history, increase and as expected market prices decline relative to guarantees
- ACRE payments and risk reduction tend to be large in areas where yield levels are high
  - Even though yield and revenue variability are relatively low in many of these areas
- Correlation between farm and State revenue is critical to risk reduction
- Results would shift with relative strength of price and yield in revenue
  - Affects regional distribution
  - Affects risk reduction



# Where Does ACRE Fit?

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- Multiple programs to stabilize/support farm income:
  - “Traditional programs” based on commodity prices
  - Yield insurance and disaster assistance
  - Revenue-based programs
- Different revenue programs measure revenue differently
  - Crop revenue insurance:
    - Farm (insured unit) yield and national level futures price
  - SURE (Supplemental Revenue Program):
    - Whole-farm revenue (combines crop enterprises), supplements crop insurance and commodity programs
  - ACRE:
    - State and farm revenue linked through double trigger
    - State and farm yield and national marketing-year average price



# Sources, More Information

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Available at [www.ers.usda.gov](http://www.ers.usda.gov)

Dismukes, Robert and Edwin Young. "New Market Realities Affect Crop Program Choices." *Amber Waves*, November 2008.

Dismukes, Robert, Christine Arriola and Keith H. Coble. *ACRE Program Payments and Risk Reduction: An Analysis Based on Simulations of Crop Revenue Variability*. Economic Research Report 101. September 2010.

Farm and Commodity Policy Briefing Room

Woolverton, Andrea and Edwin Young. *Factors Influencing ACRE Program Enrollment*. Economic Research Report 84. December 2009.

Available at [www.fsa.usda.gov](http://www.fsa.usda.gov)

FSA Fact Sheet on ACRE  
ACRE participation data

