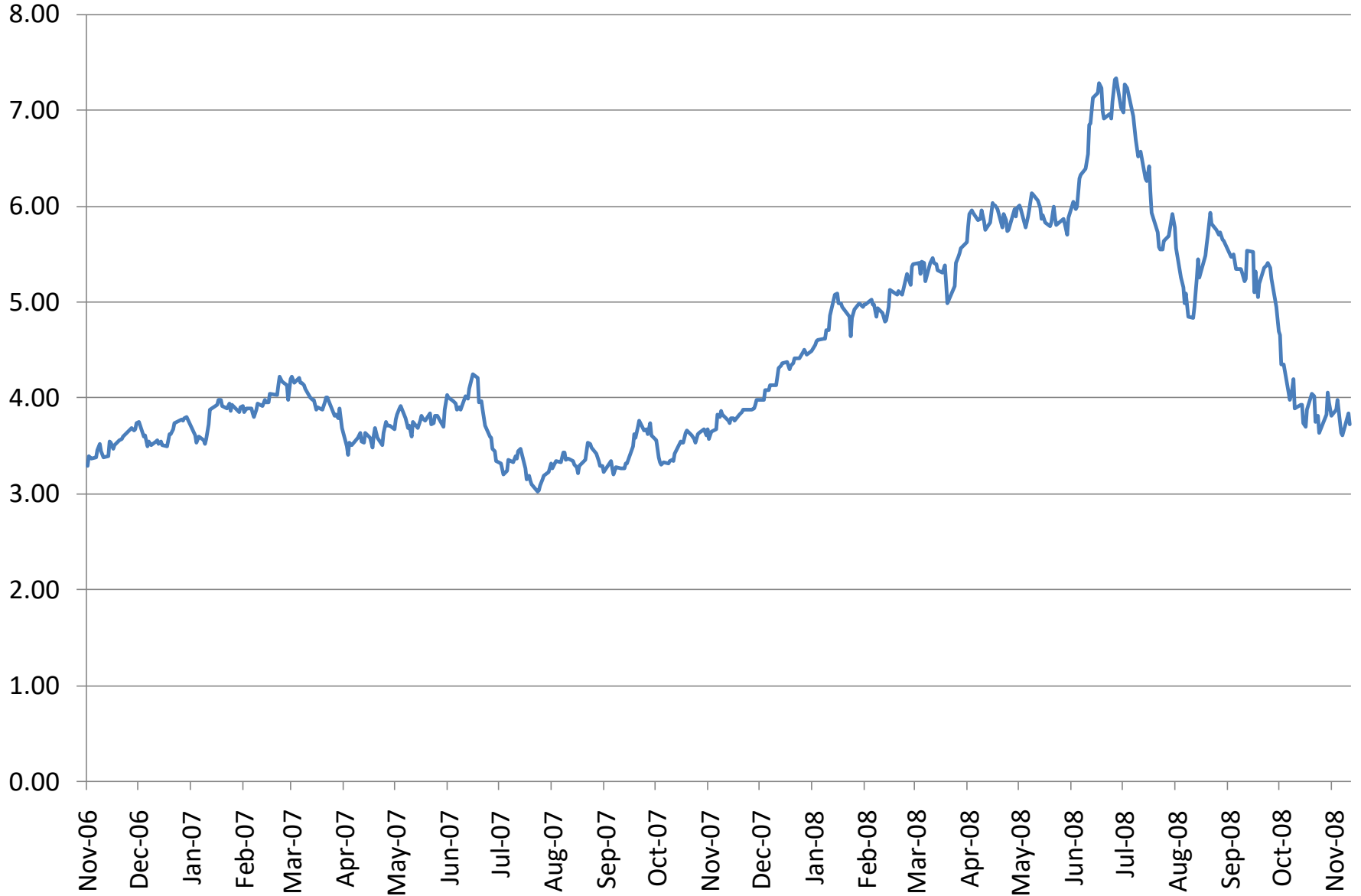


Outlook for Agriculture: Does a Downturn Loom?

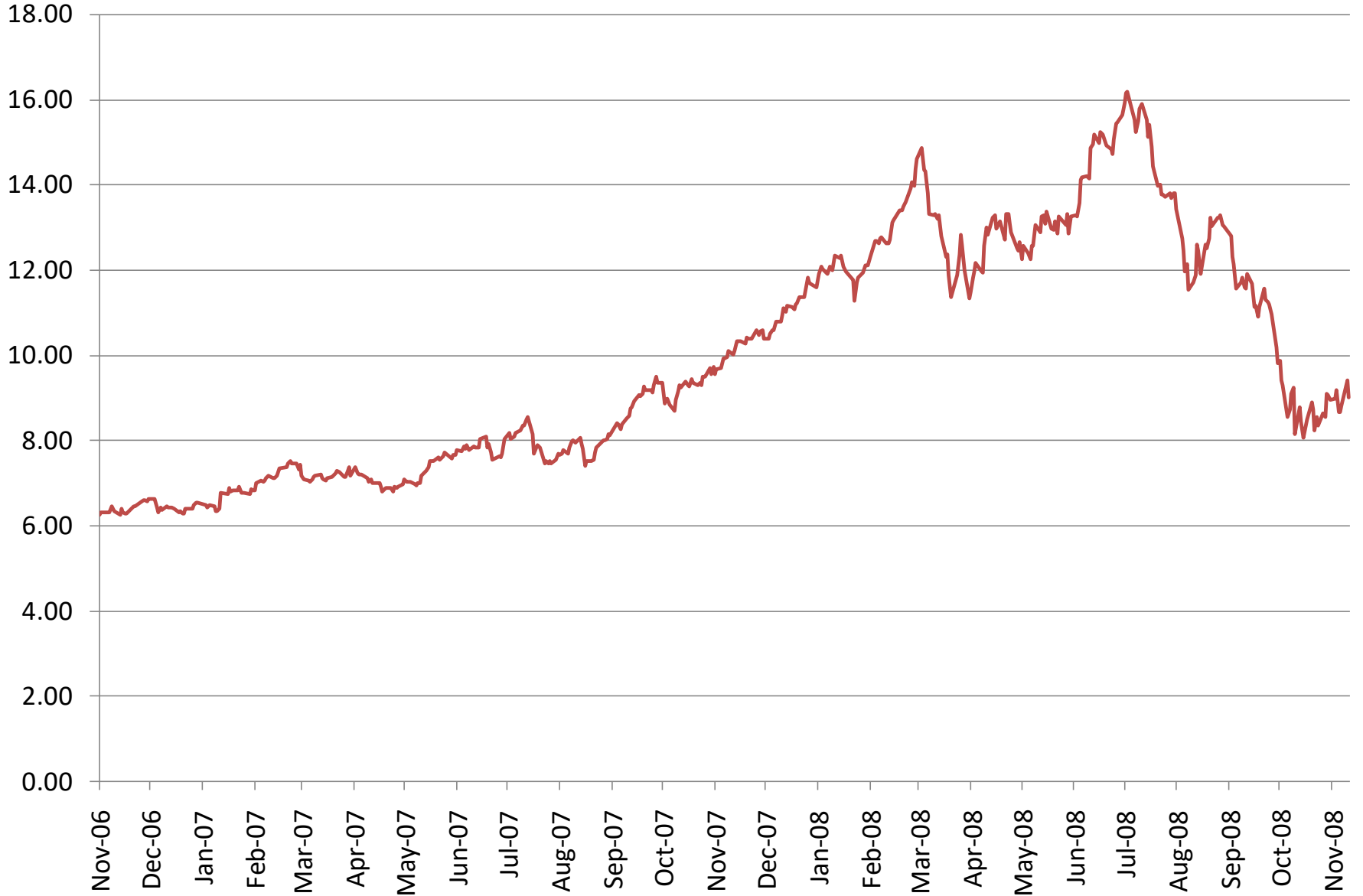
Bruce A. Babcock
Center for Agricultural and Rural Development
Iowa State University

Presented at the Pro-Ag Meeting in Fort Dodge, Iowa
November 12, 2008

Nearby CBOT Corn Prices



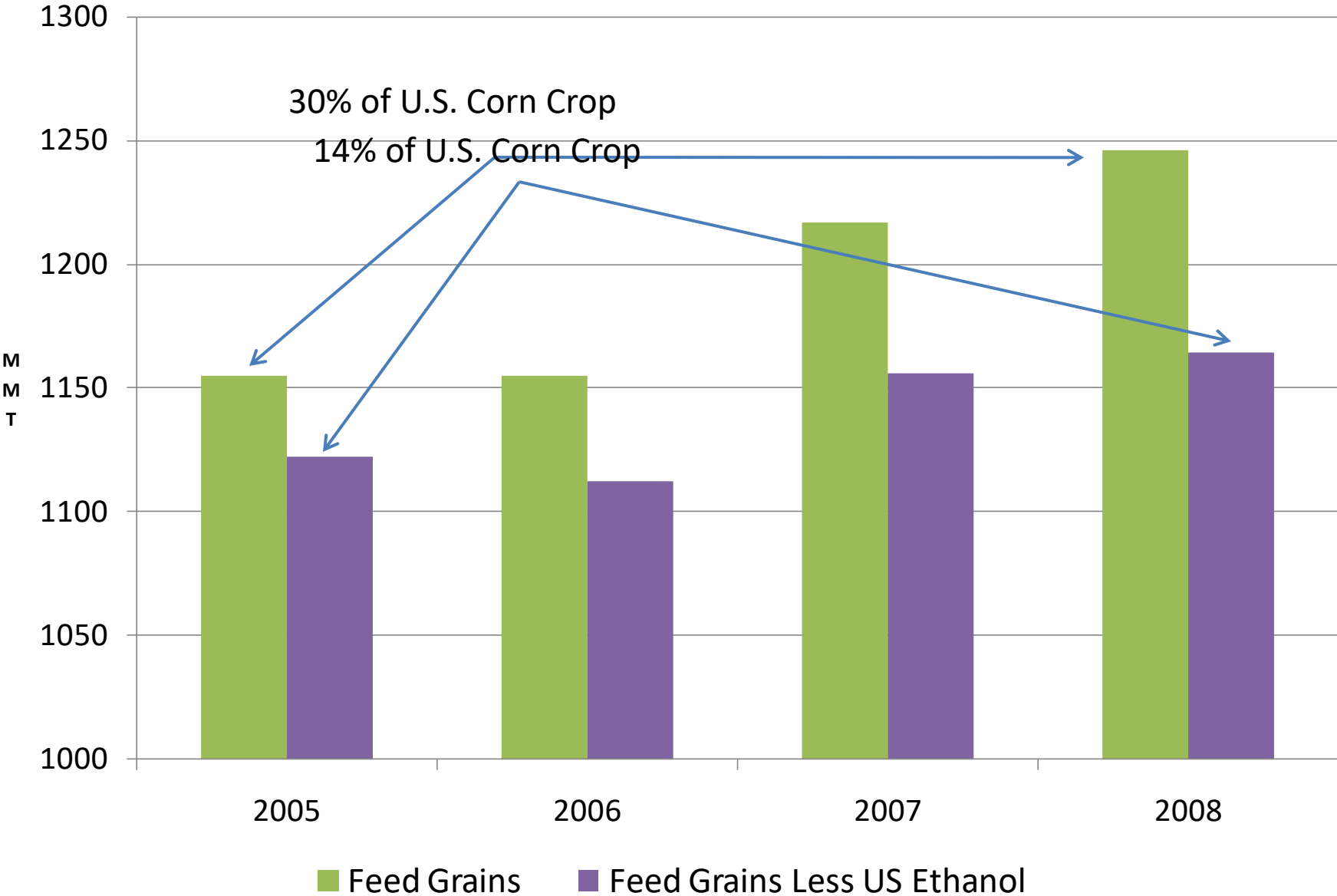
Nearby CBOT Soybean Prices



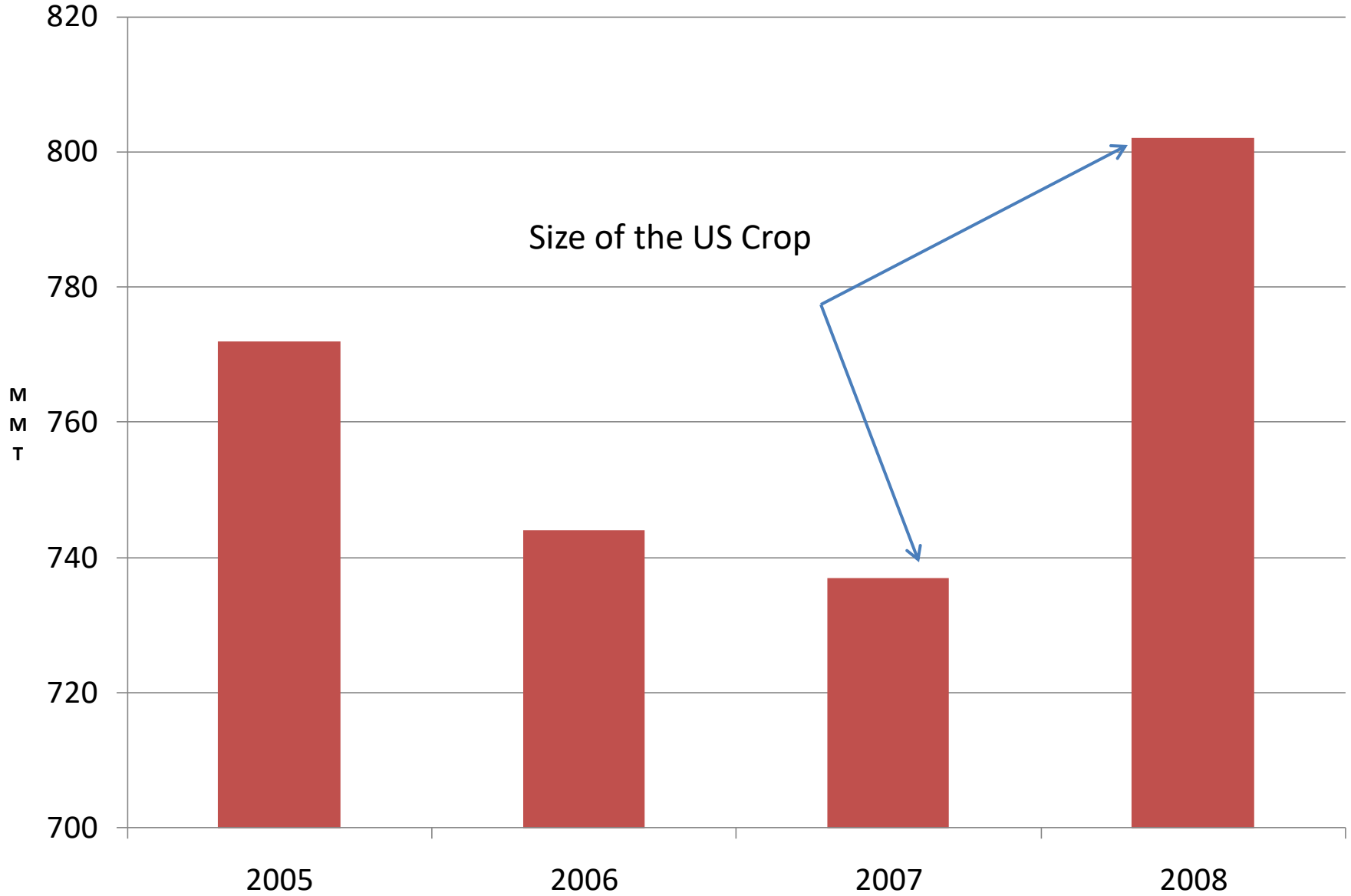
World Demand

- Likely a severe downturn in income growth
 - U.S., EU, China, India, Japan, S. Asia
- Drop in income growth will hold down growth in demand for meat, wheat and feed grains
- Food demand is income inelastic, but demand for meat and dairy products income elastic in many areas of the world

Net Feed Grains Supplies



Wheat Production Has Rebounded



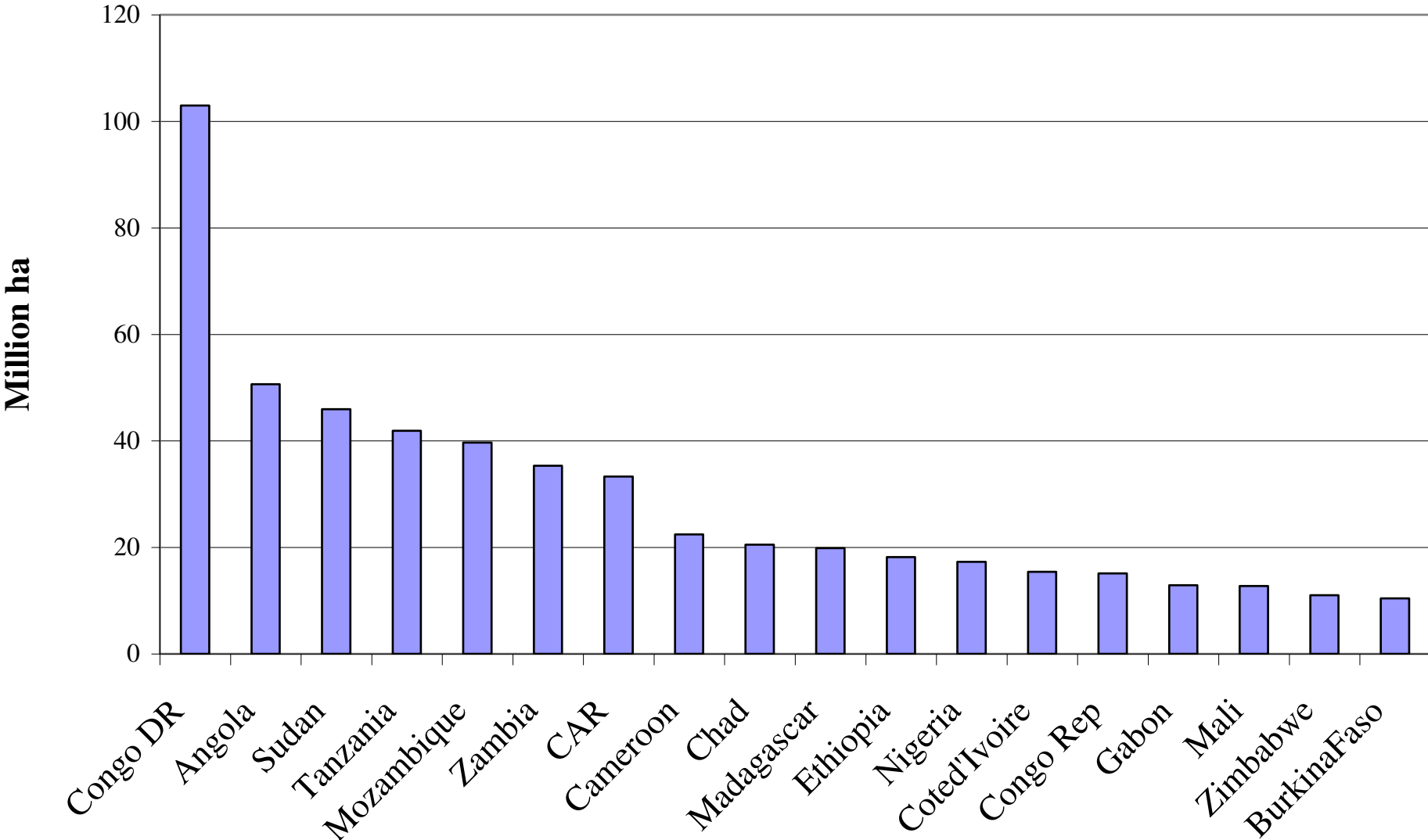
Wheat Production Increases

- Ukraine up by more than 50%
- Australia up by more than 70%
- EU up by 23%
- Canada up by 20%
- US up by 12%

Commodity Economics

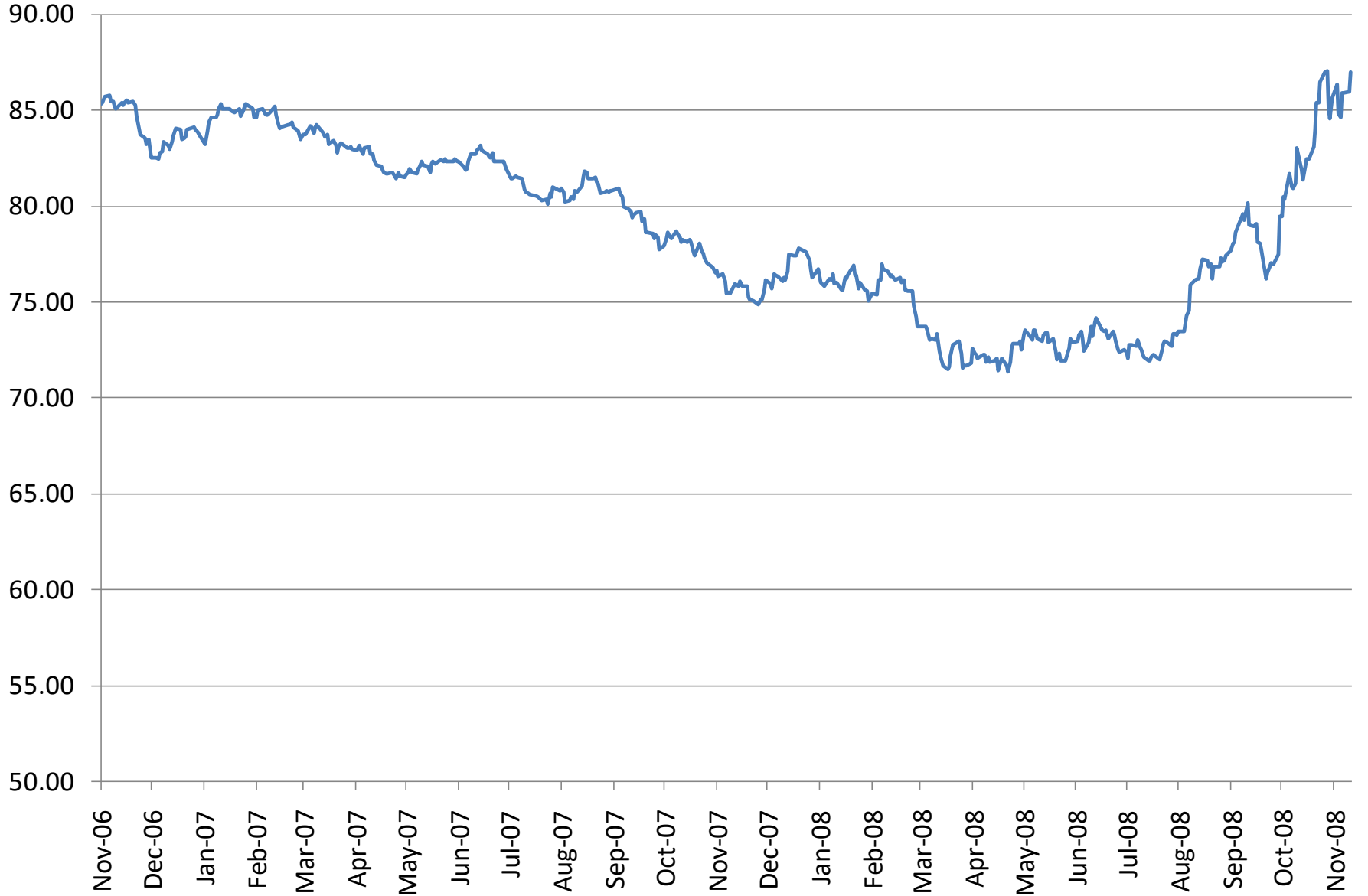
- High prices encourage investment in production capacity
- Increased capacity is semi-irreversible
- No real limits on production capacity if investment occurs

Potentially Arable Land by Country in Sub Saharan Africa





The Value of the Dollar



Why is the Dollar Stronger?

- Relative safety against turbulent times
- Reduction in demand for commodities

Impact of a Stronger Dollar

- Lower crude oil prices
- Lower ethanol prices
- Reduced demand for corn from ethanol
- Reduced export demand for U.S. agricultural commodities

Supply and Demand Outlook

- Commodity bust bad news for U.S. agriculture
 - Lower overall food demand growth will lead to lower agricultural prices
- Bright side of the bust
 - Credit constraints and lower prices will reduce capacity-increasing investment
 - Lower input costs will partly cushion blow
 - Ethanol RFS

Impact of the RFS

- Renewable Fuels Standard requires 9 billion gallons of biofuels in 2008, 10.5 billion gallons in 2009
- Gasoline producers must either blend their share of ethanol or buy a RIN (Renewable Identification Number) from another producer
- If ethanol becomes scarce, RIN price will increase, thereby increasing the price of ethanol
- Ethanol producers have to be induced through a high price to produce required ethanol
- Increases in ethanol price will keep corn prices high

Break-Even Corn Price

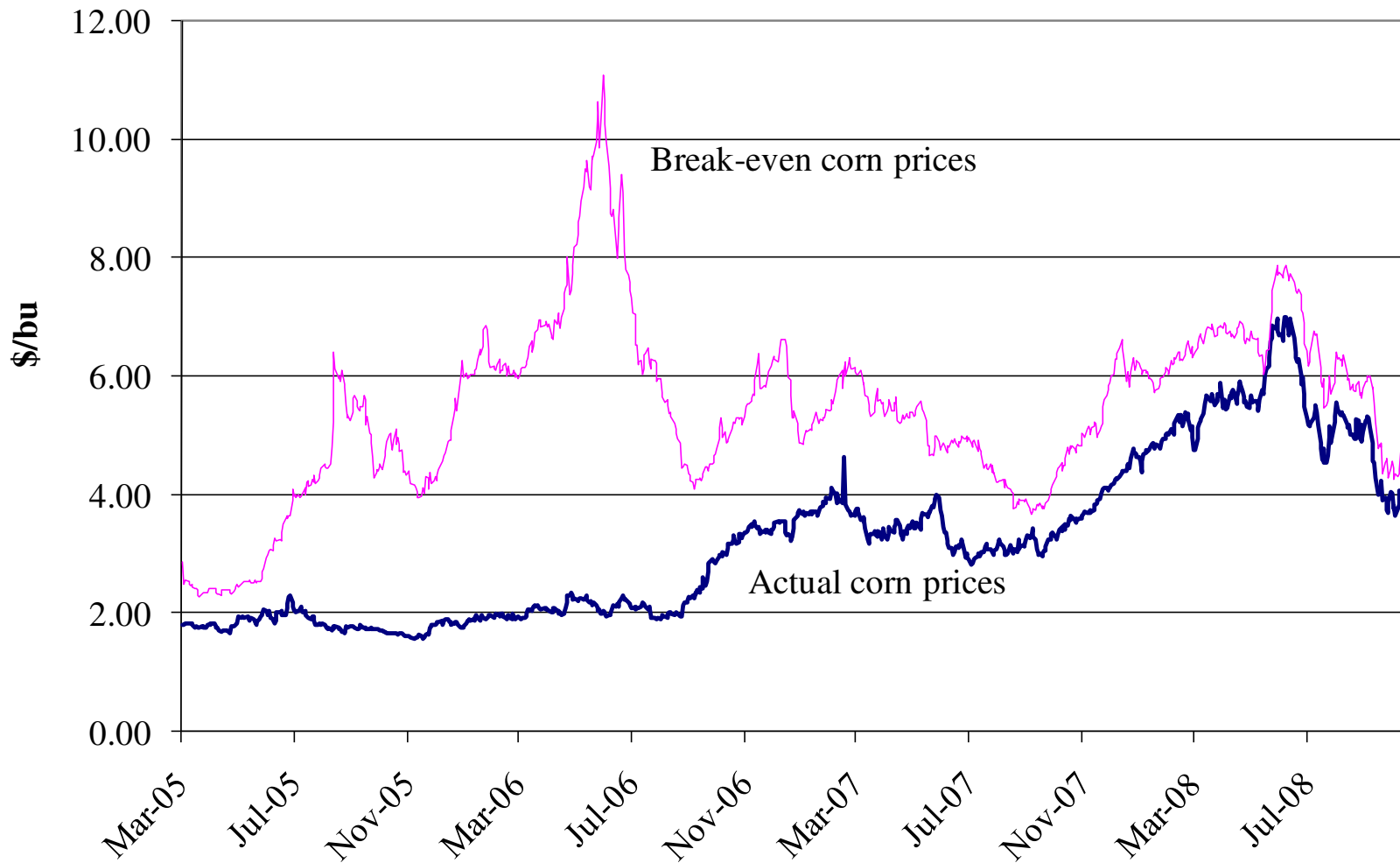
- **Ability to pay for one bushel of corn:**
Price of ethanol * 2.8 gals/bu *minus*
per bushel processing and capital costs *plus*
per bushel value of byproducts

Table 2. Predictions of corn prices for alternative crude oil prices

Price of:

| Crude \$/barrel | Gasoline \$/gallon | Ethanol \$/gallon | Corn \$/bu |
|--------------------|-----------------------|----------------------|---------------|
| 50 | 1.26 | 1.20 | 2.18 |
| 60 | 1.52 | 1.36 | 2.71 |
| 70 | 1.77 | 1.52 | 3.24 |
| 80 | 2.02 | 1.67 | 3.77 |
| 90 | 2.27 | 1.83 | 4.30 |
| 100 | 2.53 | 1.99 | 4.82 |
| 110 | 2.78 | 2.15 | 5.35 |
| 120 | 3.03 | 2.30 | 5.88 |

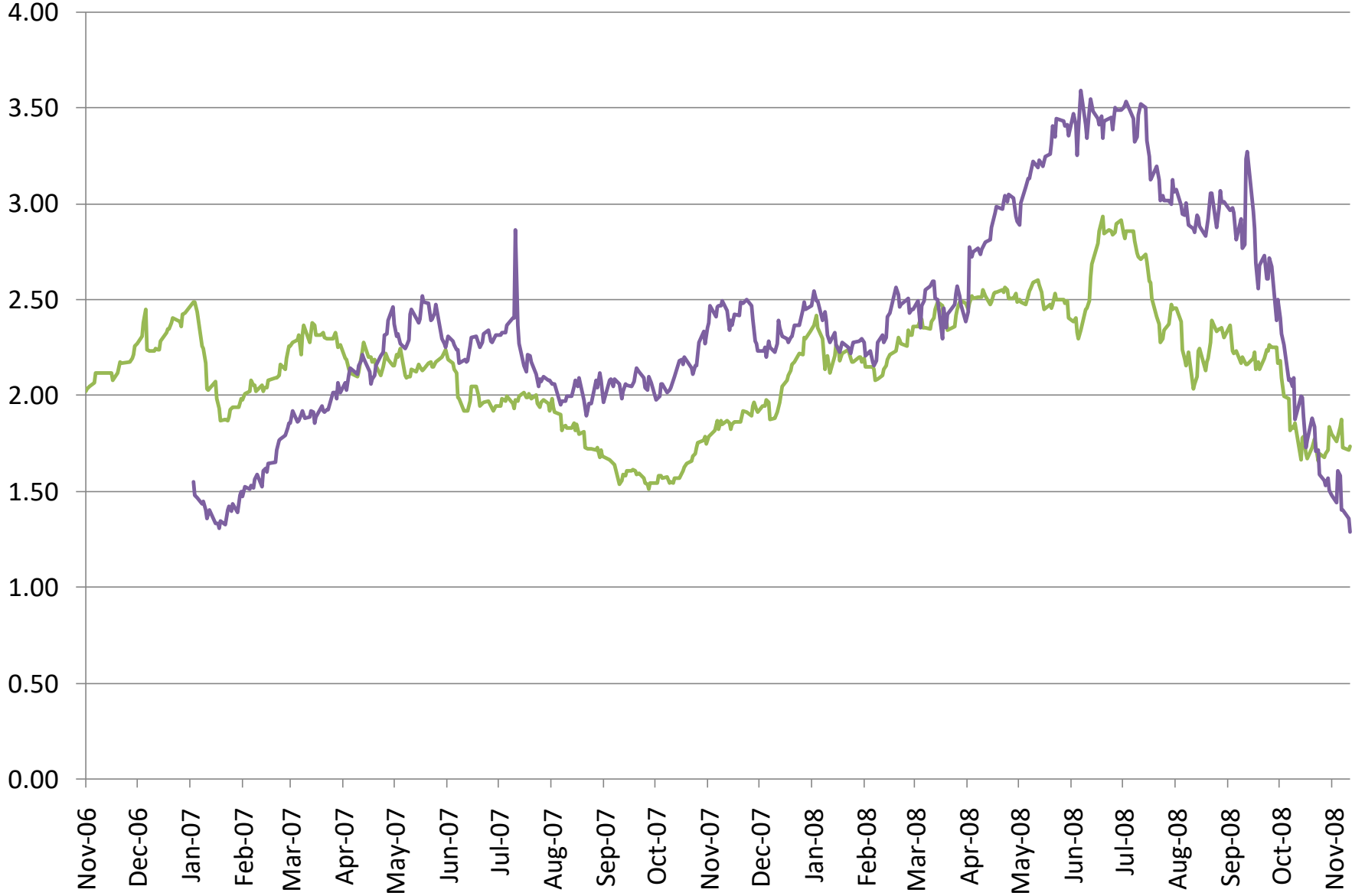
Relationship Between Ethanol's Ability to Pay for Corn and the Price of Corn



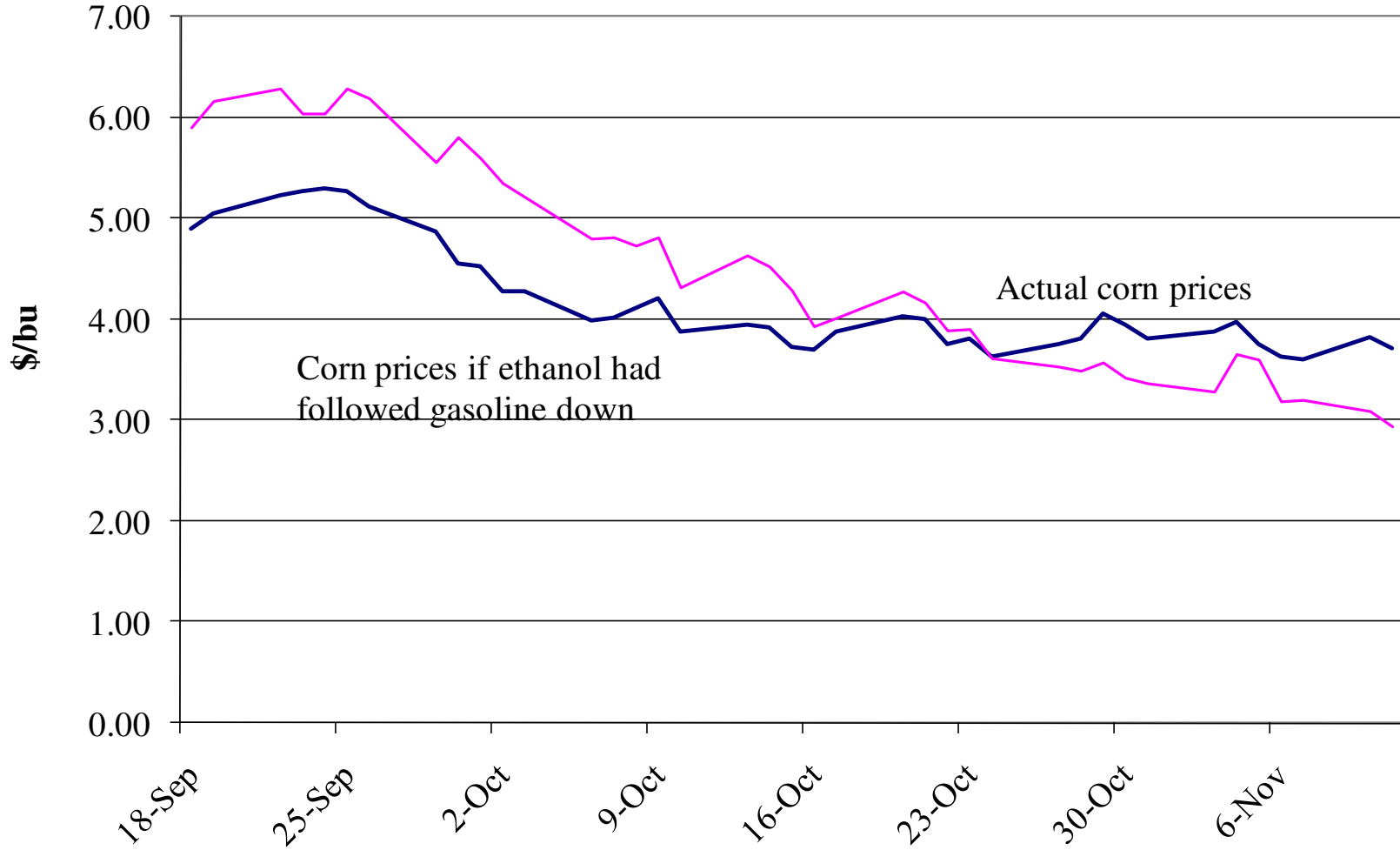
Ethanol Plants are Setting the Price of Corn

- Changes in the ability to pay for corn very closely related to the actual price of corn
- Relationship should continue to hold so long as there are idle ethanol plants

Nearby Gasoline and Ethanol Prices



Recent Price History



Why Hasn't Ethanol Followed Gasoline Lower?

- RFS is binding
- Resolution of transportation bottlenecks
 - Should be willing to pay \$0.51 above the price of gasoline for ethanol if one for one substitute
 - Right now, ethanol is \$0.40 above gasoline

Longer-Run Outlook

- Corn will follow crude higher, but not lower if ethanol plants do not produce enough ethanol
- For 2009, we need about 87 million acres of corn to produce the mandate
- Corn prices relative to soybean prices will need to be high enough to buy the acres
 - If not, then corn prices will increase significantly next year

Outlook continued

- Credit constraints should work to hold world supplies down
- Need to produce corn should help keep corn margins at a decent level
 - Key importance is to keep the RFS and import tariff in place if corn margins are to be maintained for a year or two