Understanding Current Farmland Values and Risks

March 10, 2011
FDIC Symposium
Don’t Bet the Farm: Assessing the Boom in U.S. Farmland Prices
by
Brent Gloy
Director, Center for Commercial Agriculture
Purdue University
http://www.agecon.purdue.edu/commercialag/
bgloy@purdue.edu
765-494-0468

Setting the Stage

1. Is it possible that land values could be significantly (20-30%-40%) lower 3-5 years than today?
2. Is there a bubble in the land market?

A bubble implies irrationality in the market and/or a short-term structural issue that impacts market transactions

- People buying/selling in a panic because prices only go up/down
- People forced to sell due to sudden liquidity crisis
- People encouraged to buy, take risk with massive amounts of OPM (liquidity glut)
- Asset prices diverge from any reasonable view of economic fundamentals

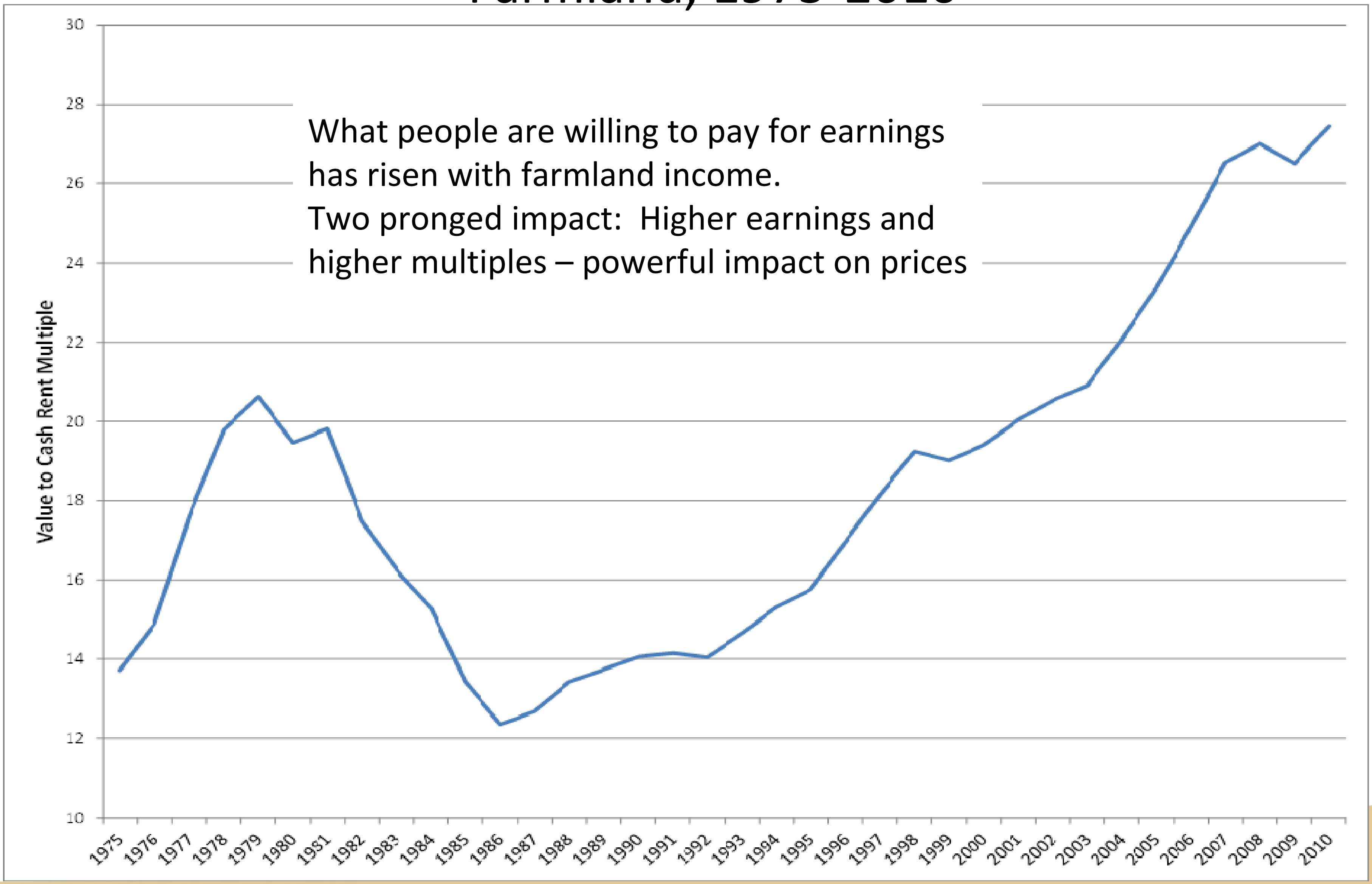
What Drives Value?

- General idea of purchasing capital assets
  - Obtain the rights to future earnings for a price less than the real earnings that it will produce
- Capital asset values are determined by *EXPECTATIONS* of the level of future earnings and their present value
  - Earnings are difficult to forecast
  - Interest rates and inflation drive present values and are equally difficult to forecast
- It is very difficult to understand when expectations are misinformed
  - Compounded by the fact that farmland is an infinite life asset with relatively low rates of turnover

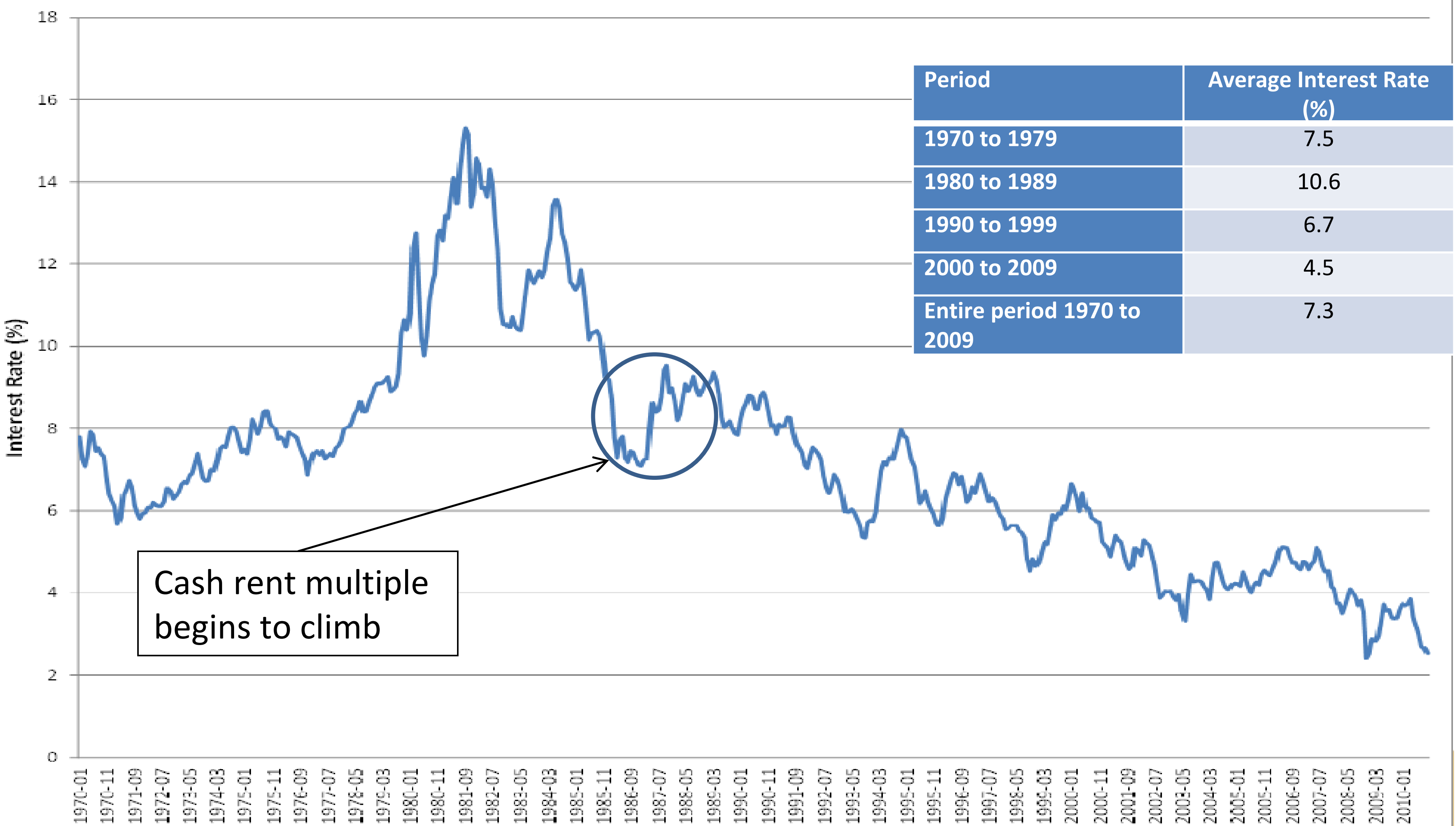
So How Did We Get Here?

- Returns
  - Biofuel demand
  - Strong demand from emerging markets
  - Weather shocks/poor yields
- Generally decreasing interest rate environment
  - Rates at 30 year lows

Value-to-Rent Multiple for Average Quality IN Farmland, 1975-2010

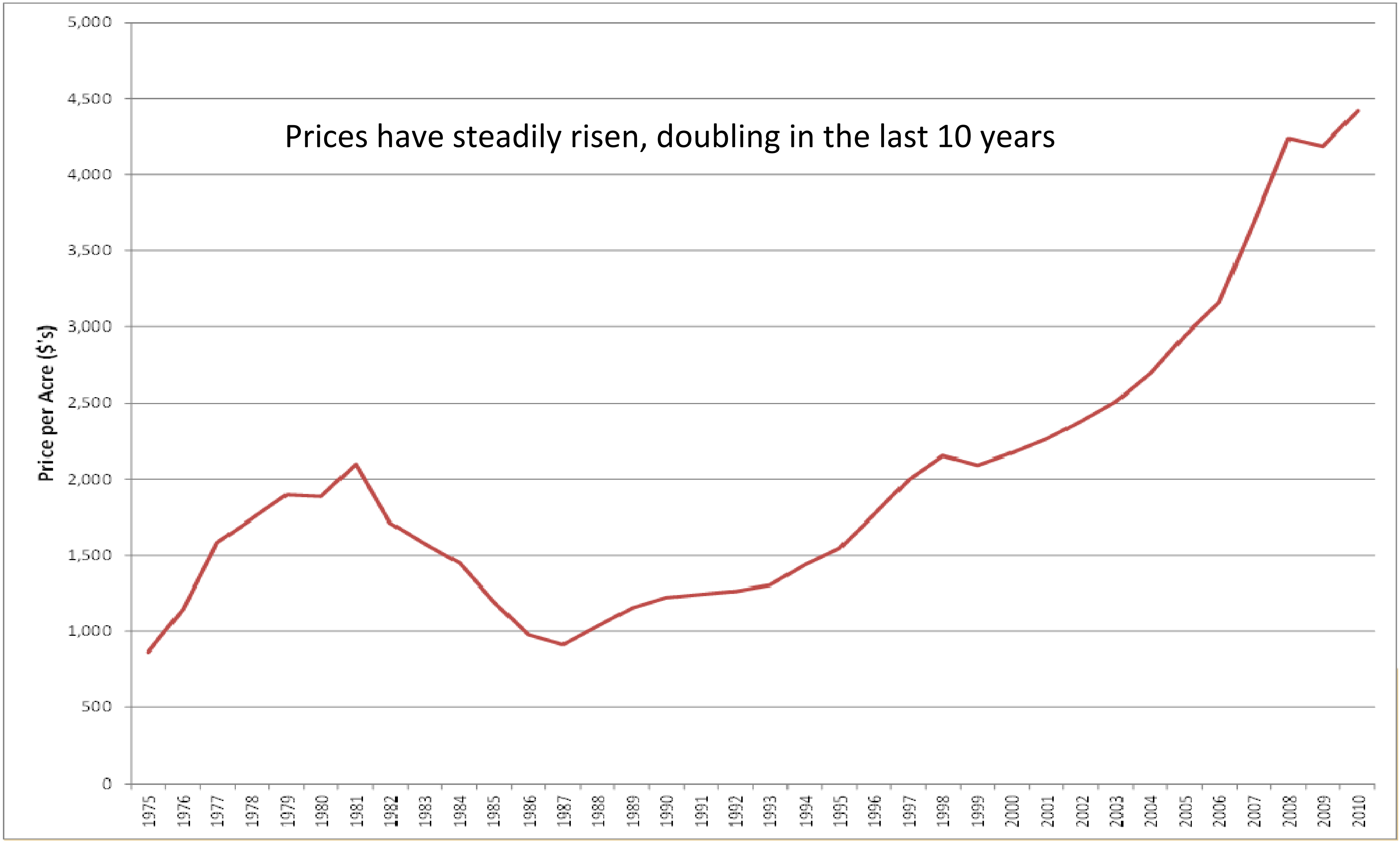


Interest Rate on 10-Year Treasury Bonds, 1970 to 2010



Period	Average Interest Rate (%)
1970 to 1979	7.5
1980 to 1989	10.6
1990 to 1999	6.7
2000 to 2009	4.5
Entire period 1970 to 2009	7.3

Price per Acre for Average Quality Indiana Farmland, 1975-2010



Current Land Values

- Land values appear to reflect current high returns in agriculture
  - Not obviously overvalued, do not appear to have diverged from reality
  - This DOES NOT mean that a downward movement is impossible
- Values are dependent upon interest rates remaining low and/or sustained growth in agricultural incomes
- It is possible that a bubble is in early stages of formation
- Substantial increases from here would be based upon optimistic scenarios for future growth and/or reduced real rates

Things That Tend to Fuel Bubbles

- Easy access to credit for the purchase of the capital asset with someone willing to accept lots of risk (liquidity glut)
- **Widespread uncertainty about the level of economic fundamentals and their future outlook and the magnitude of the risk misunderstood by market participants**
- Markets that allow participants to easily capture capital gains along the way and/or roll capital gains into ever bigger bets
- New demand (uninformed market participants wanting to enter the market)

Key Questions

- What factors would potentially stimulate bubble formation?
- What factors would reduce land values from current levels?
  - How likely are these factors?

Risk Matrix for Land Value 1-5 Years

Large Increase

Impact

Large Reduction

U.S. Inflation Takes Off

U.S. Drought

Export Controls Spike Commodity Prices

U.S. Double Dips

Significant Outside Inv. Surfaces

China Buys U.S. Corn

China Growth Story Continues

Low — Probability — High

M.E. Turmoil Spreads

Risk Premium Returns to Land Mkt

Ag Input Costs Rise Rapidly – Margins return to "normal"

Oil Price Spike Causes Global Recession

USDA CRP Release

200+ bp increase in interest rates

Forced Sales Due to CF Crisis

U.S. Relaxes Bio-fuel Mandate

China Meltdown

Summary

- The risks to farmland values are highly non-linear
  - We are operating in the tails of the distribution
  - Do not get there with just one or two trends
  - These confluence of events make projecting income difficult
  - Set the stage for bubble formation and potential correction
- There is great uncertainty about the level at which farmland will trade in 5 years
- It is not clear to me that on balance land is dramatically overvalued at present
  - That can change rapidly

Questions?

Brent Gloy
bgloy@purdue.edu
765-494-0468

For more information on land values visit our website at:
http://www.agecon.purdue.edu/commercialag/