**Benchmarking Your Marketing Performance and New Generation Contracts**

**Scott Irwin, Joao Martines and Darrel Good**

***Executive Summary***


- The starting point for developing a farm marketing track record is to compute a net price received that is comparable across crop years.

- Net price received should be a weighted-average across bushels priced and adjusted for storage costs and government program benefits.

- Benchmarks are needed to assess marketing performance relative to a standard.

- Market benchmarks measure the price offered by the market.

- Peer benchmarks measure the price received by other farmers.

- Professional benchmarks measure the price received by professional market advisory services.

- All benchmarks should be computed using the same basic assumptions applied to a farmer's own marketing track record.

- Three types of new generation marketing contracts have been developed in recent years.

- Automated pricing contracts are the most common and are based on the average price offered over some pre-specified window.

- Modifications to the basic automated pricing contract include: loan-rate provisions, selling only on down days, and minimum prices.

- Managed hedging contracts market a pre-specified number of bushels based on the recommendation of a market advisory service.

- Hybrid contracts are automated pricing rule contracts with that allow a farmer to share in the profits, if any, generated by a market advisory service.

- Over the 1988-2000 crop years, the average pre-harvest forward contract price for corn, $2.35/bu., is higher than the average post-harvest price, $2.14/bu. (harvest equivalent).

- Over the 1988-2000 crop years, the average pre-harvest forward contract price for soybeans, $5.99/bu., is higher than the average post-harvest price, $5.61/bu. (harvest equivalent).

- Longer-run evidence from the last 50 years suggests the recent tendency for higher pre-harvest prices relative to post-harvest prices is <u>not</u> necessarily the norm.

# Benchmarking Your Marketing Performance and New Generation Contracts

Scott Irwin, Joao Martines and Darrel Good

http://www.farmdoc.uiuc.edu/

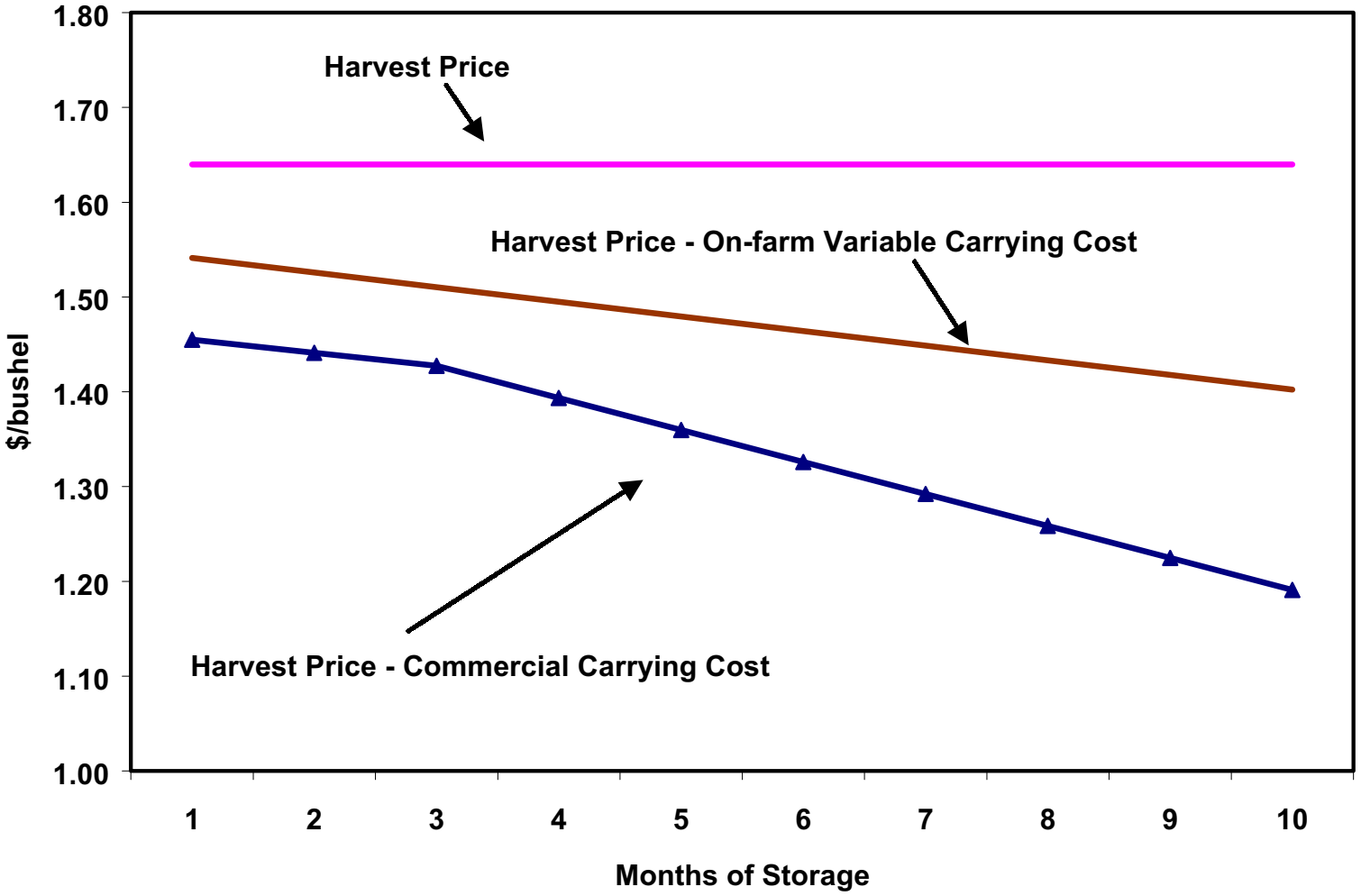
# Overview of Workshop

- Performance Comparisons and Benchmarking
- New Generation Marketing Contracts

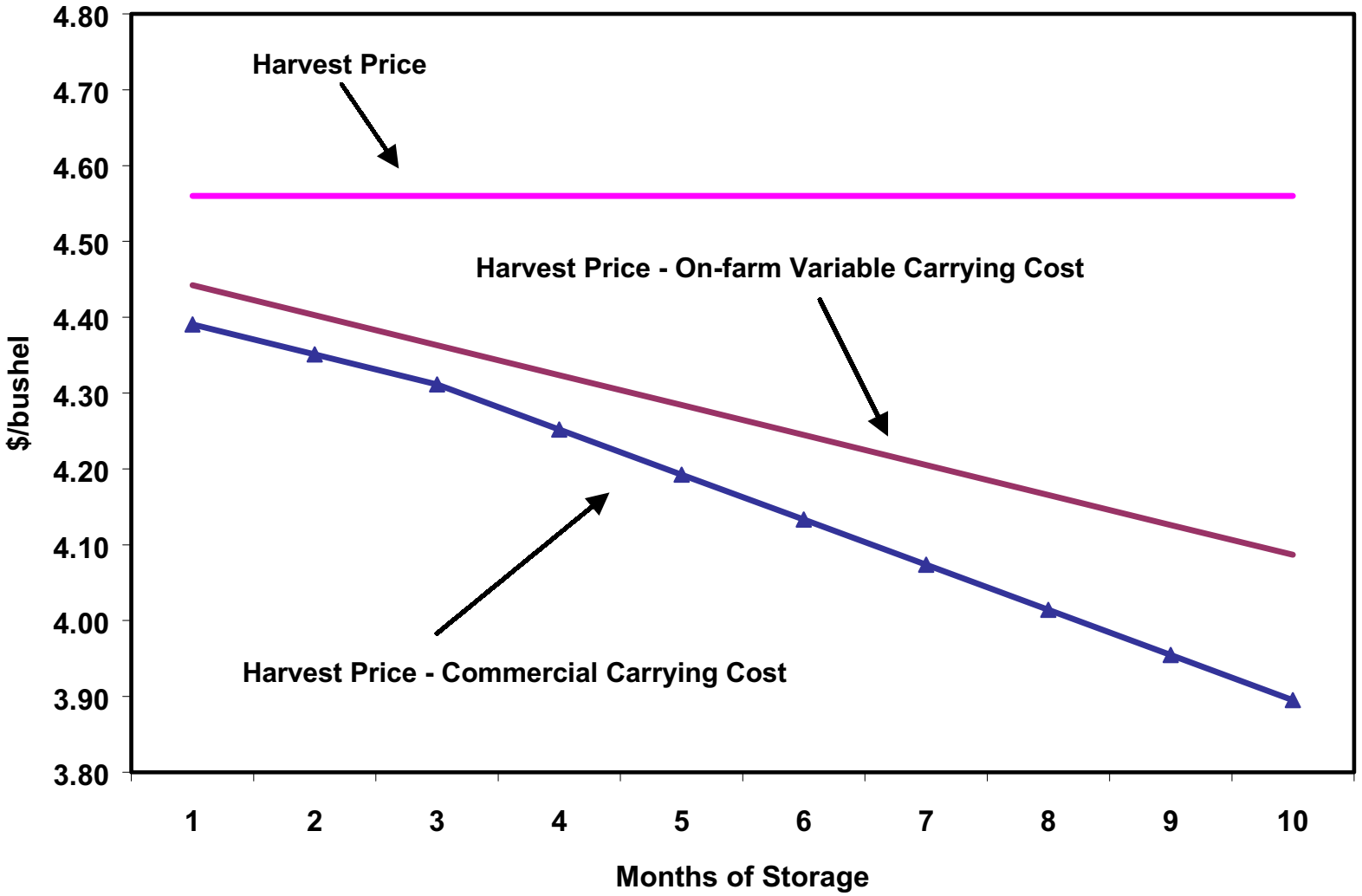
# Key Points in Computing Your Marketing Track Record

- Goal: Compute net price received that is comparable across years
  - Weighted average price for all bushels produced
  - Account for cost of storing bushels after harvest
  - Account for government program benefits that depend on your pricing decisions
    - Loan deficiency payments (LDPs)
    - Marketing loan gains (MLGs)

# Carrying Cost Comparison for Corn, Central Illinois, 2000 Crop Year



# Carrying Cost Comparison for Soybeans, Central Illinois, 2000 Crop Year



# Steps in Computing Net Price Received

1. Assemble records for a given crop: bushels sold, cash and forward sales, futures and options transactions
2. Compute the weighted-average gross cash price received
3. Subtract physical storage charges on all bushels stored post-harvest
4. Subtract interest opportunity cost on all bushels stored post-harvest
5. Compute profit/loss on all futures and options transactions
6. Add LDP and/or marketing loan benefits

# Benchmarking Your Marketing Performance

- Need to compare performance to a "standard" or "yardstick"
- Three basic types of benchmarks
  - Market benchmarks: prices offered by the market
  - Peer benchmarks: prices received by other farmers
  - Professional benchmarks: prices received by agricultural market advisory services

# Market Benchmarks: Comparing Your Performance to the Market

- Basic concept: Measure average price offered by the market
- Critical that the same assumptions used for your track record and the benchmark

# Key Issues in Building a Market Benchmark

- Forward and cash prices should be for the same (or similar) location, grade and quality as your sales
- Commercial bid prices should be used instead of USDA average price received
- Physical storage and interest opportunity costs should be the same as those in your track record
- LDPs and MLGs should be included
- Time window for averaging should be similar to your typical decision horizon for marketing grain

# Peer Benchmarks: Comparing Your Performance to Other Farmers

- In theory, would like to have actual track records of a large sample of farmers, with net prices computed as just shown
- This kind of data is simply not available
- Comparison is not possible or we must resort to an approximation

# USDA Average Price Received as a Peer Benchmark

- Disadvantages
  - Only available as a statewide average
  - Aggregates across the different grades and quality sold in the market
  - Does not include futures and options trading profits/losses
- Advantages
  - Does include forward cash sales (pre- and post-harvest)
  - Incorporates actual marketing pattern of farmers

# USDA Average Price Received as a Peer Benchmark

- An "indicator" of marketing performance of farmers
- Proceed by:
  - Applying the same physical storage and interest opportunity costs as used in your track record and market benchmark
  - Adding state average LDPs and MLGs
  - Making basis adjustment if outside central Illinois

# Professional Benchmarks: Comparing Your Performance to Market Advisory Services

- Compute net prices for market advisory services
  - Comparable basis to your own track record and other benchmarks
  - Not practical for most farmers
- AgMAS Project does compute net prices for a number of advisory services
- AgMAS prices are based on central Illinois data
- If farming outside of this area, AgMAS prices are not directly comparable to your track record
  - Basis and yield differences

# New Generation Marketing Contracts

- What is your marketing goal?
  - Receive the average price?
  - Beat the average price?
  - Beat the harvest price?
  - Average in the upper-third of the price range?
  - Avoid pricing in the bottom-third of the price range ?

# Traditional Approaches to Achieving Marketing Goal

- Active marketing on your own
- Follow a market advisory service

# Three Basic Types of New Generation Contracts

1. Automated pricing rules
   - Motivated by finding that professionals and farmers have a tough time beating the market
   - Consistent with idea of efficient markets (stock index funds)
2. Managed hedging
3. Hybrid of the first two

# Who Are the Major Players?

- Cargill Ag Horizons
  - http://www.cargill.com/aghorizons/performancemarketing/us.htm
- E-markets
  - http://www.e-markets.com/drc_tour/index2.html
- Diversified Services
  - http://www.cgb.com/
- Many local elevators

# Averaging Contract

- Most basic form of automated pricing rule contracts
- Average price over some pre-specified time window
  - Average futures price, you set basis,or
  - Average a local cash price
- With some exceptions, limited to pre-harvest pricing windows

# Averaging Contract Example for the 2000 Corn Crop

- Simple average of cash forward contract prices for harvest delivery over Feb – June 2000
- Commit 10,000 bushels of corn:

| | |
|---|---|
| Average | $2.19 |
| Service Charge | $0.03 |
| Price at delivery | $2.16 |

- Comparison prices:

| | |
|---|---|
| Harvest | $1.64 |
| Marketing year (harvest equiv.) | $1.62 |

# More Complex Forms of Automated Pricing Rule Contracts

- Loan-rate provision
- Only sell on down days
- Establish minimum, maximum price or both
- Vary proportion sold by month
- Sell only when pre-specified targets are reached

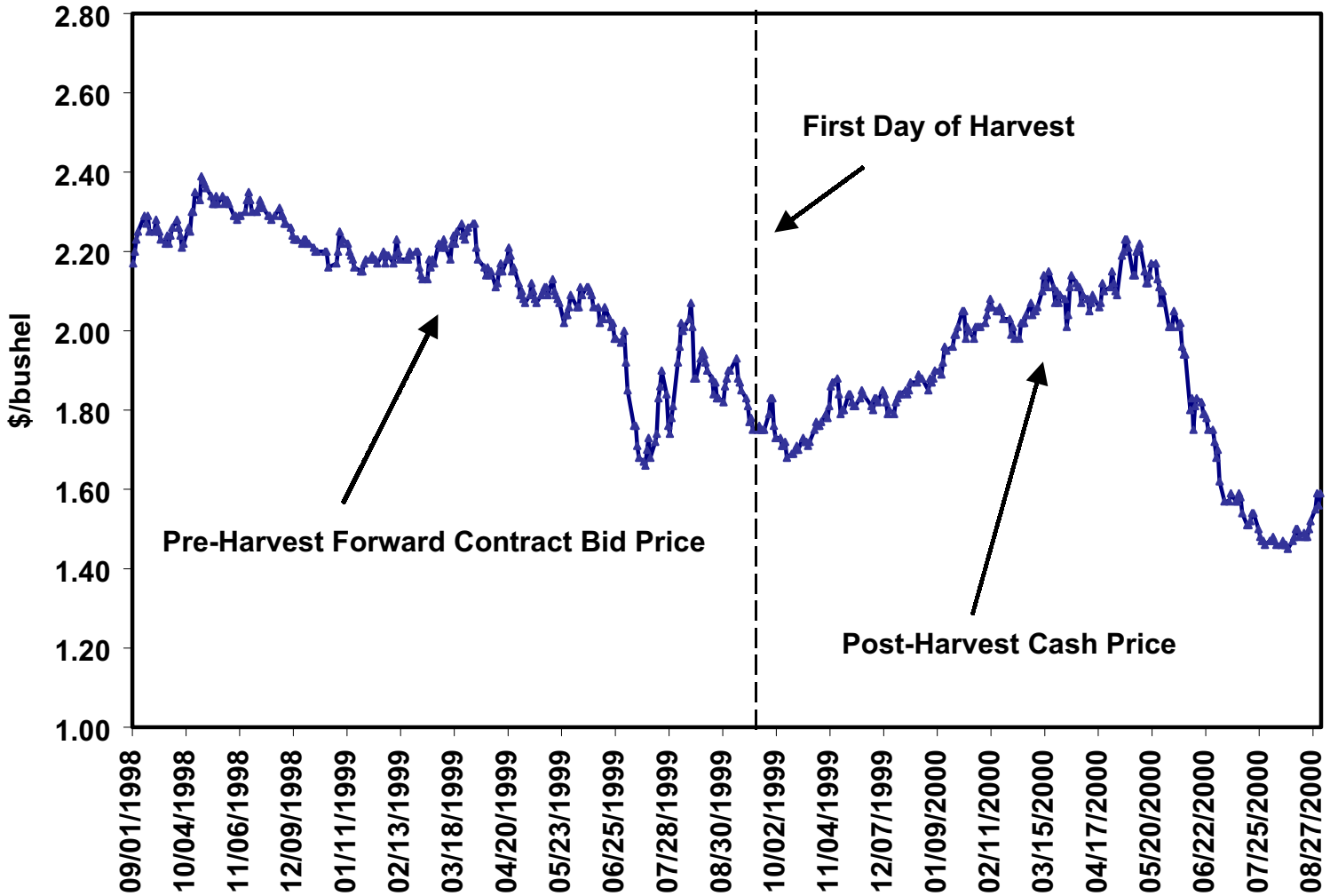
# Managed Hedging Contracts

- Bushels committed to contract are hedged according to the recommendations of a market advisory service
- Advisor may use a variety of instruments, including futures, options or forward contracts
- May include a minimum futures price

# Hybrid Contracts

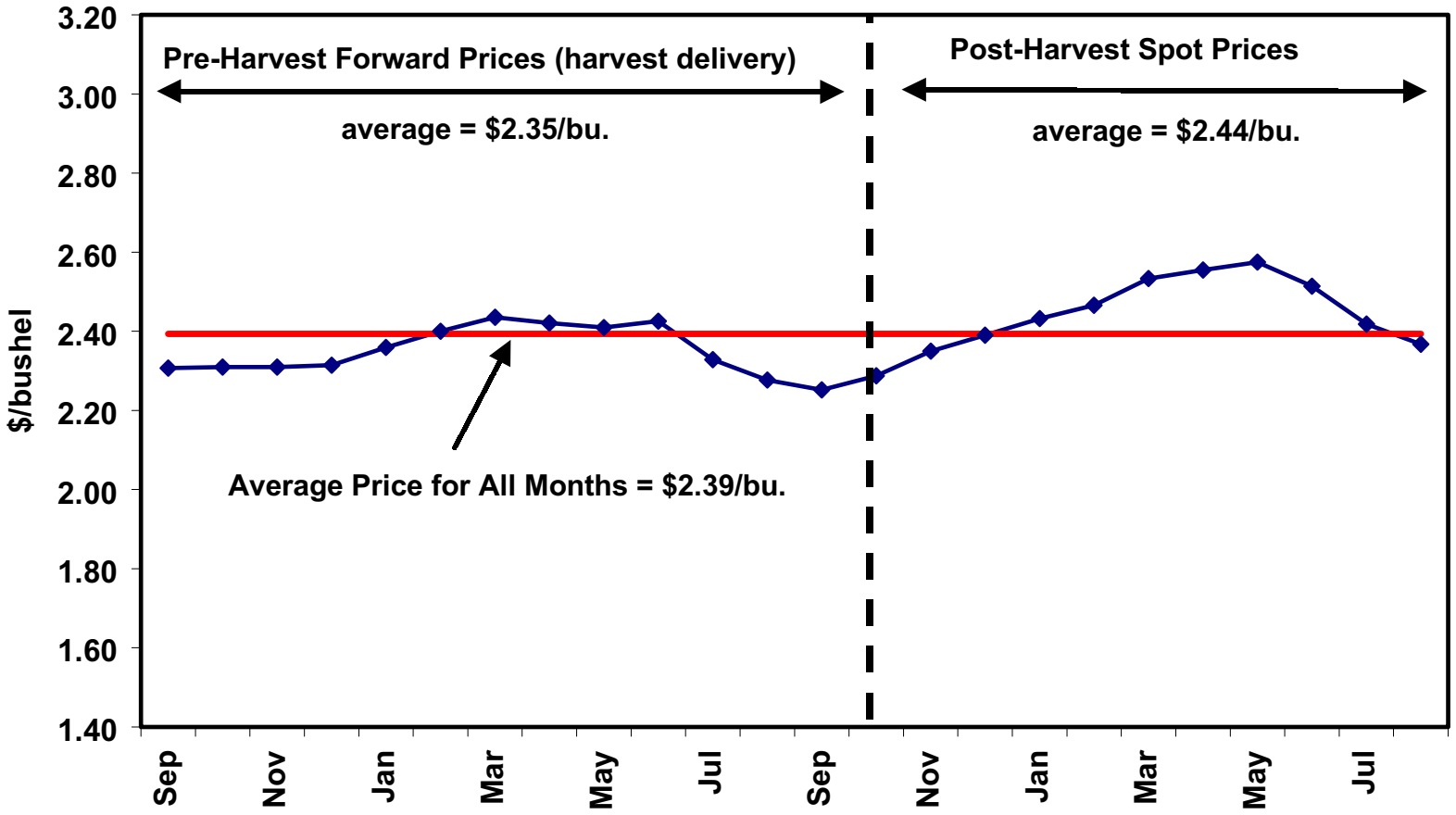
- An automated pricing contract plus share of professional's hedging profits
  - Average price contract most typical
- May include a minimum futures price
- In addition to a service charge, may include additional incentive for professional
  - Example: if hedge in top third of price range, professional earns additional fee

# Daily Prices of Corn, Central Illinois, 1999 Crop Year



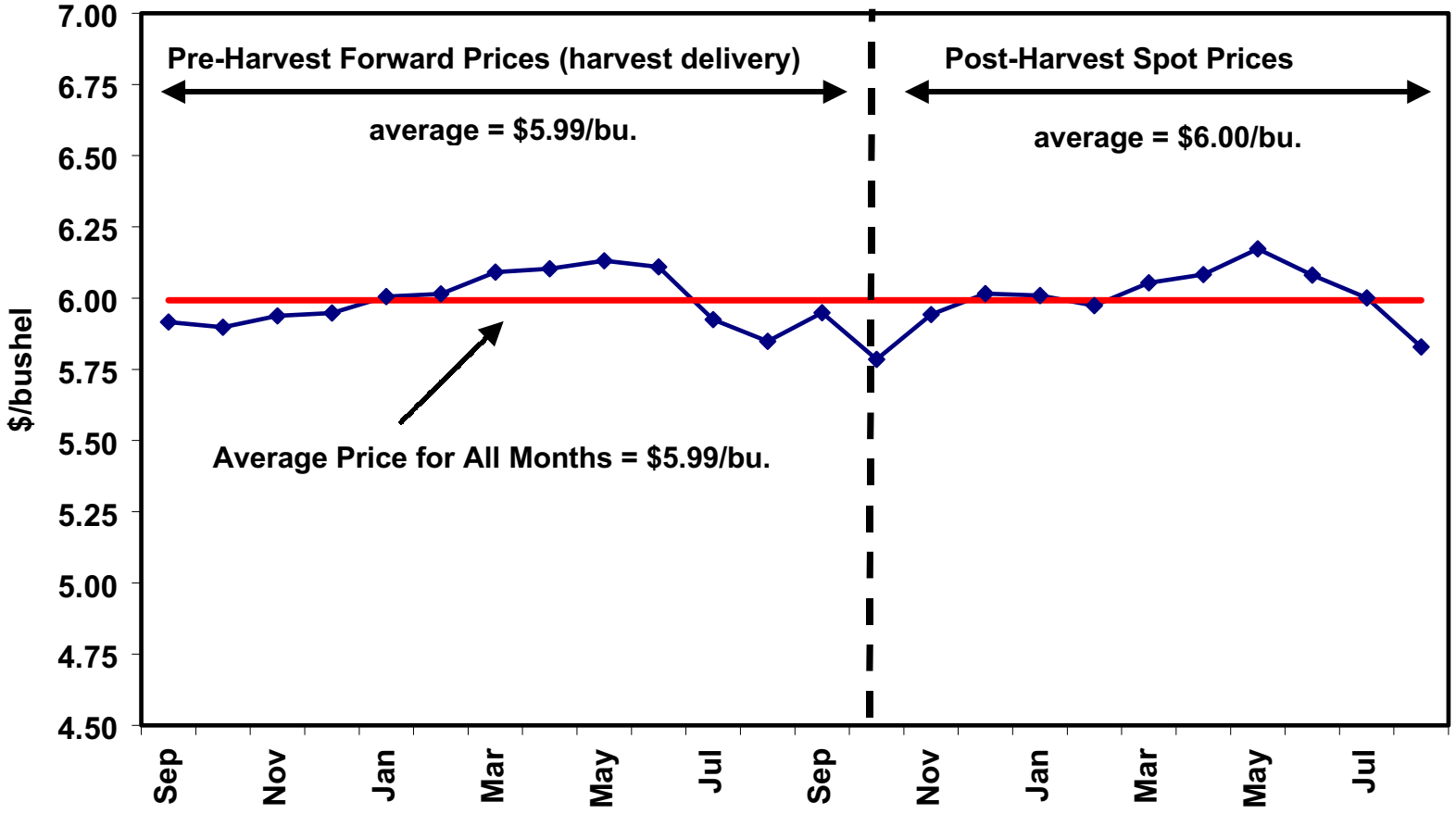
# Average Monthly Price of Corn, Central Illinois, 1988-2000 Crop Years

(no carrying charges or LDP)

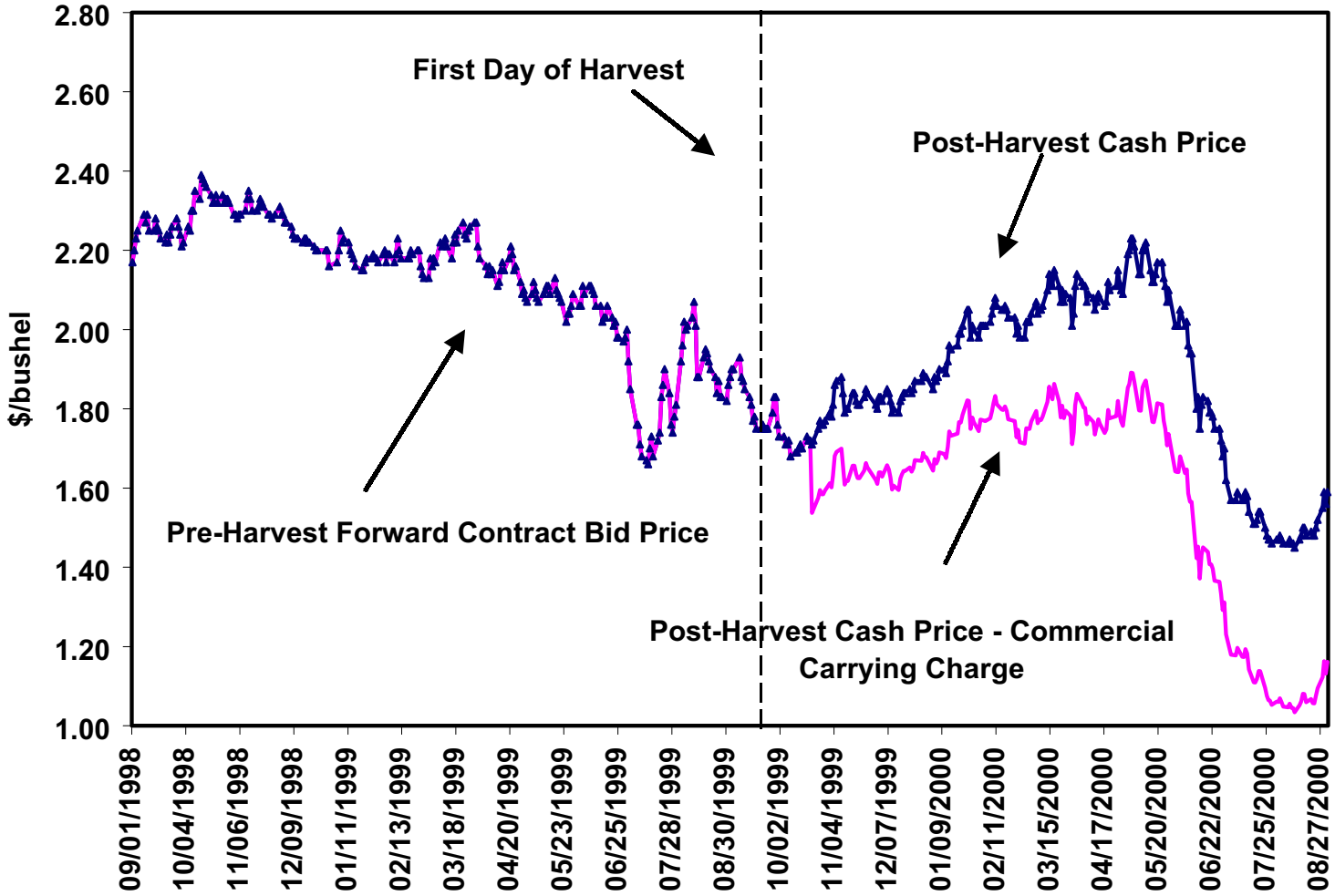


# Average Monthly Price of Soybeans, Central Illinois, 1988-2000 Crop Years

(no carrying charges or LDP)

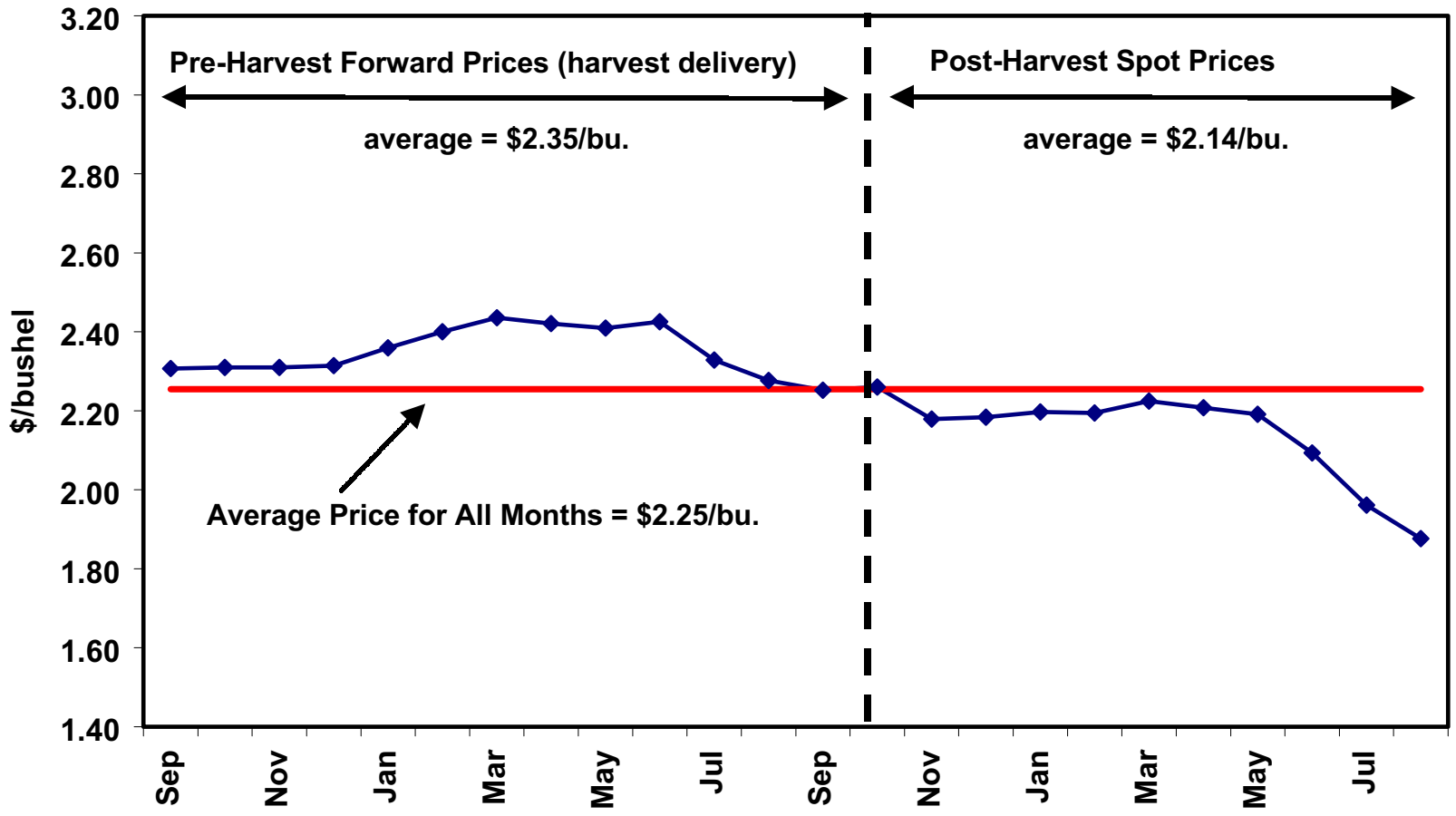


# Daily Prices of Corn, Central Illinois, 1999 Crop Year



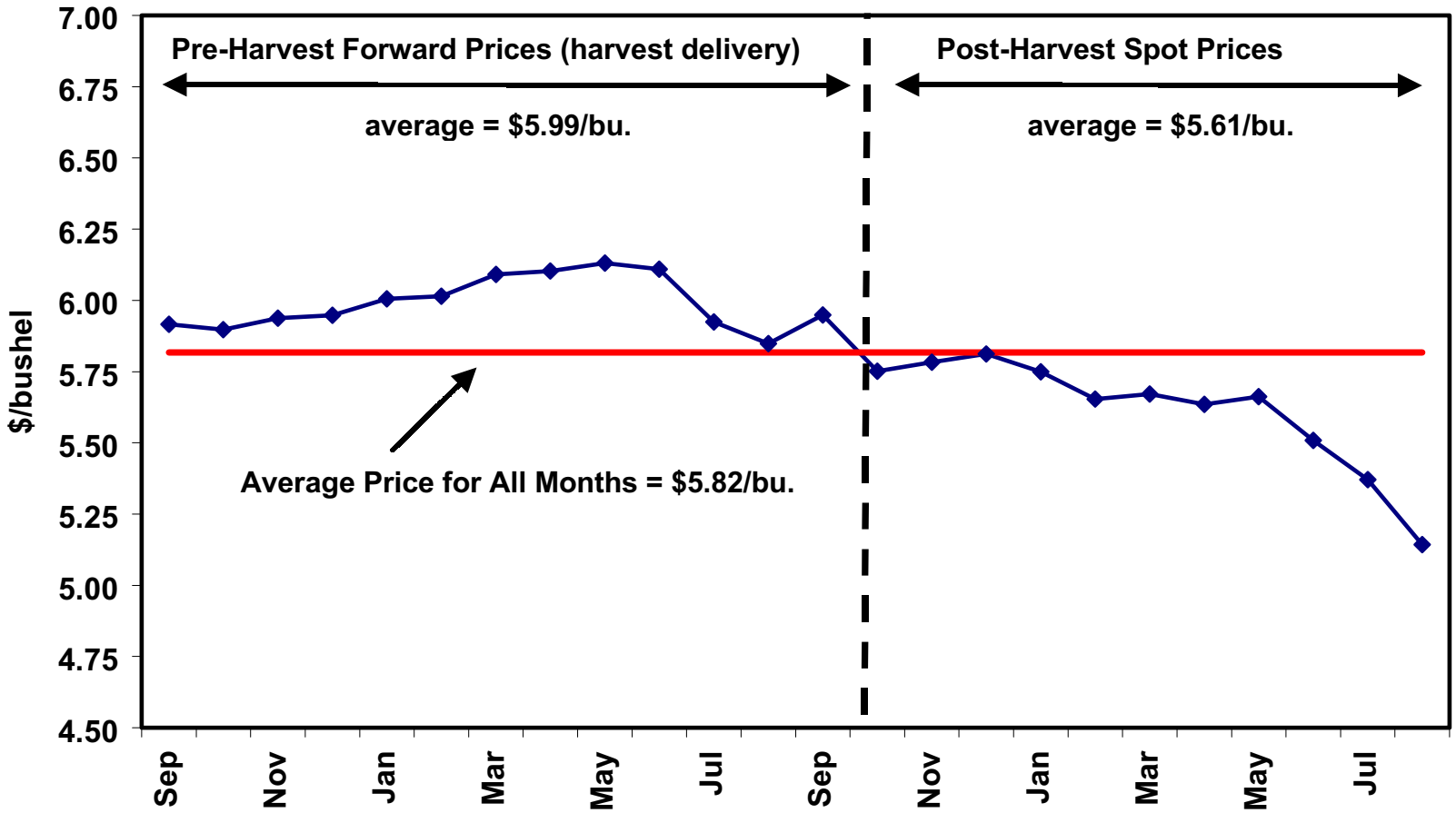
# Average Monthly Price of Corn, Central Illinois, 1988-2000 Crop Years

(commercial carrying charges and no LDP)



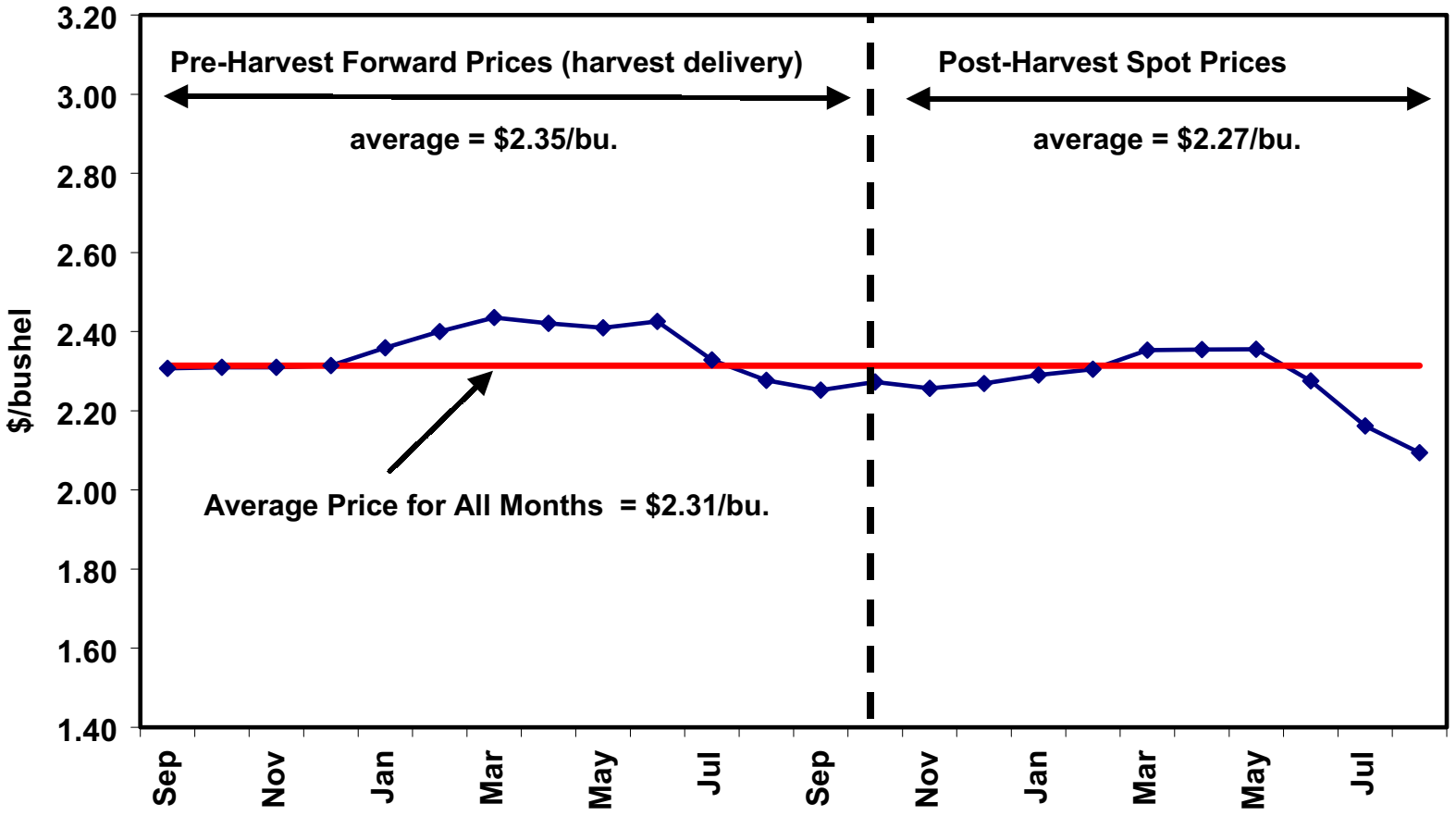
# Average Monthly Price of Soybeans, Central Illinois, 1988-2000 Crop Years

(commercial carrying charges and no LDP)



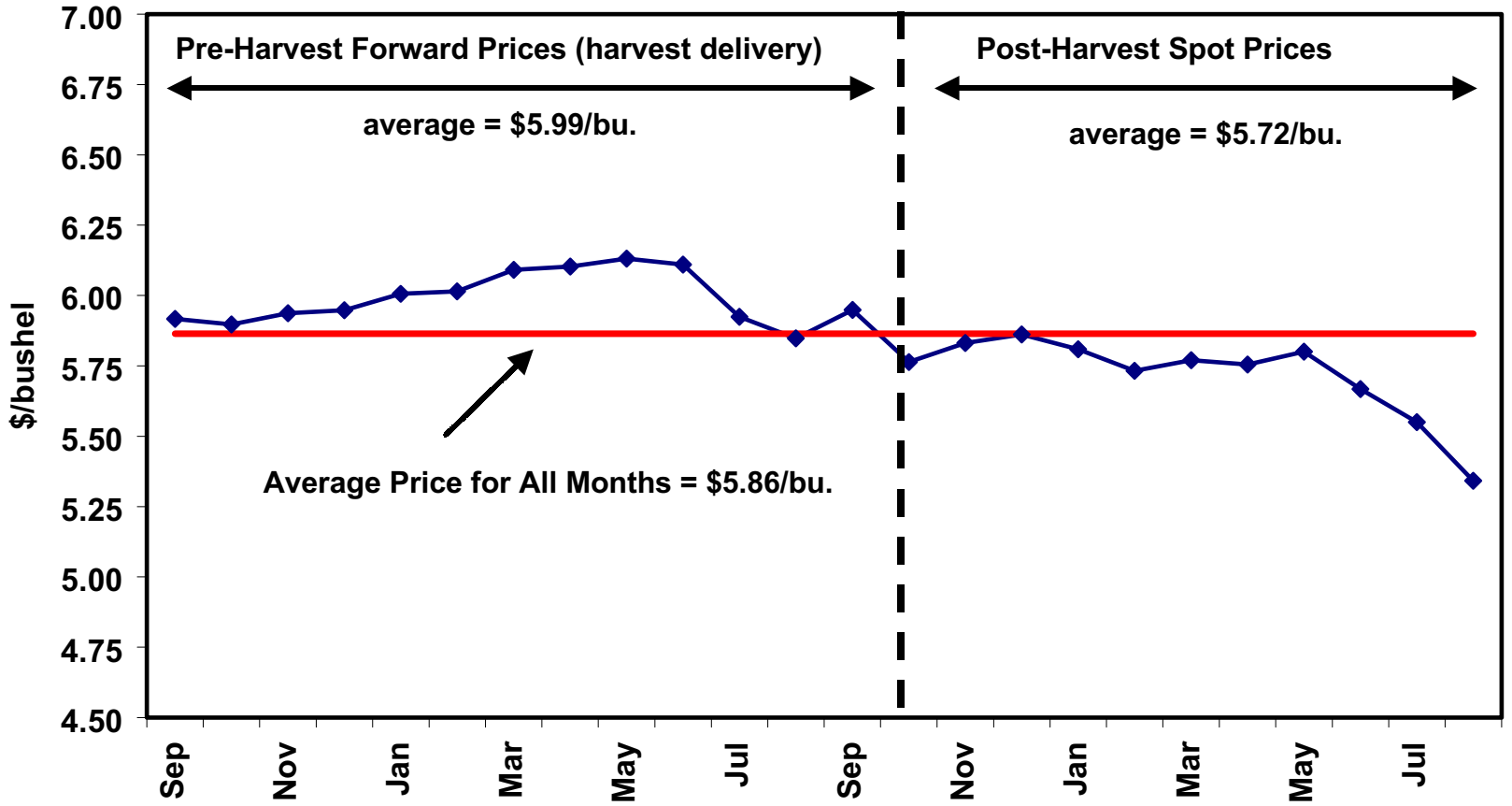
# Average Monthly Price of Corn, Central Illinois, 1988-2000 Crop Years

(on-farm variable carrying charges and no LDP)



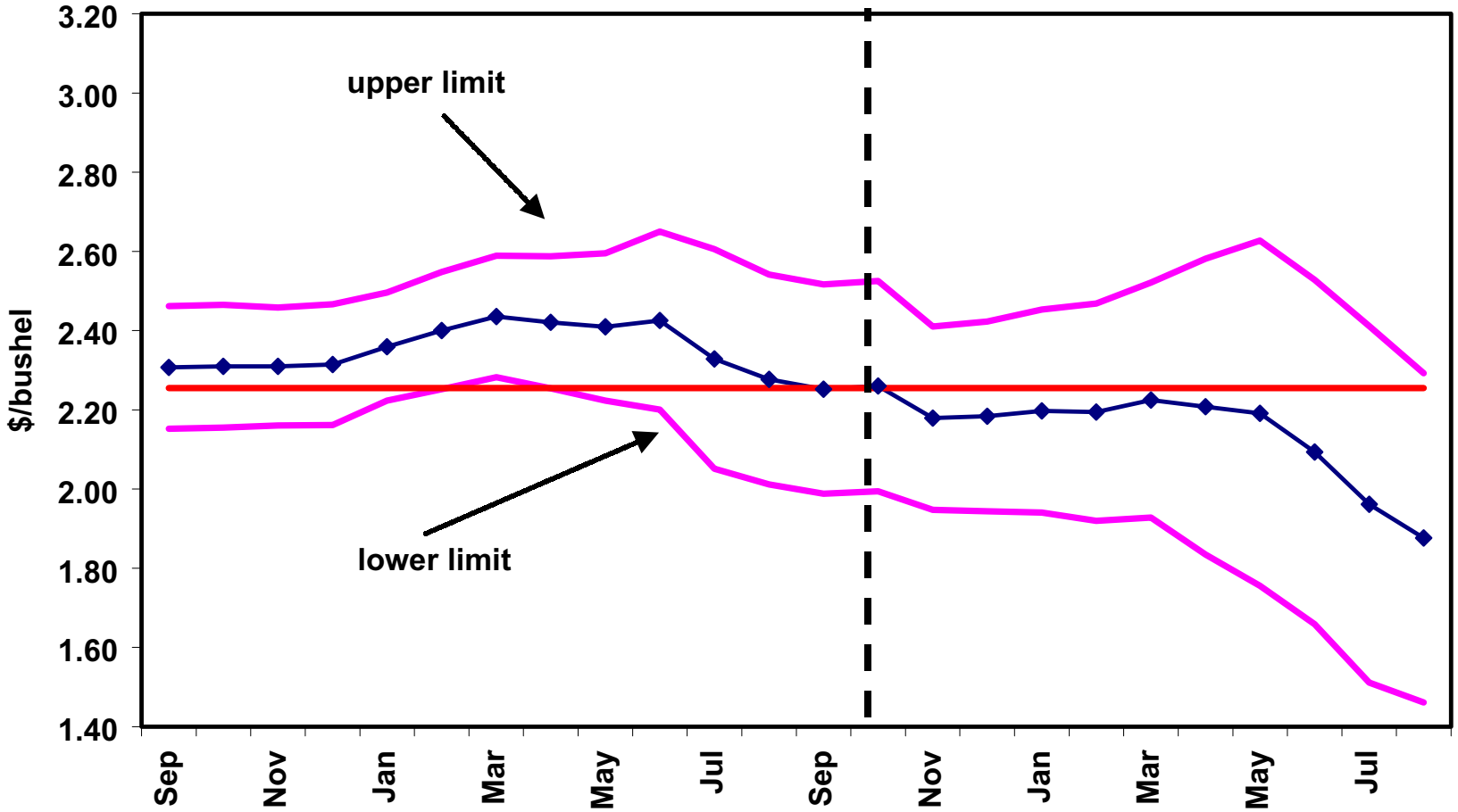
# Average Monthly Price of Soybeans, Central Illinois, 1988-2000 Crop Years

(on-farm variable carrying charges and no LDP)



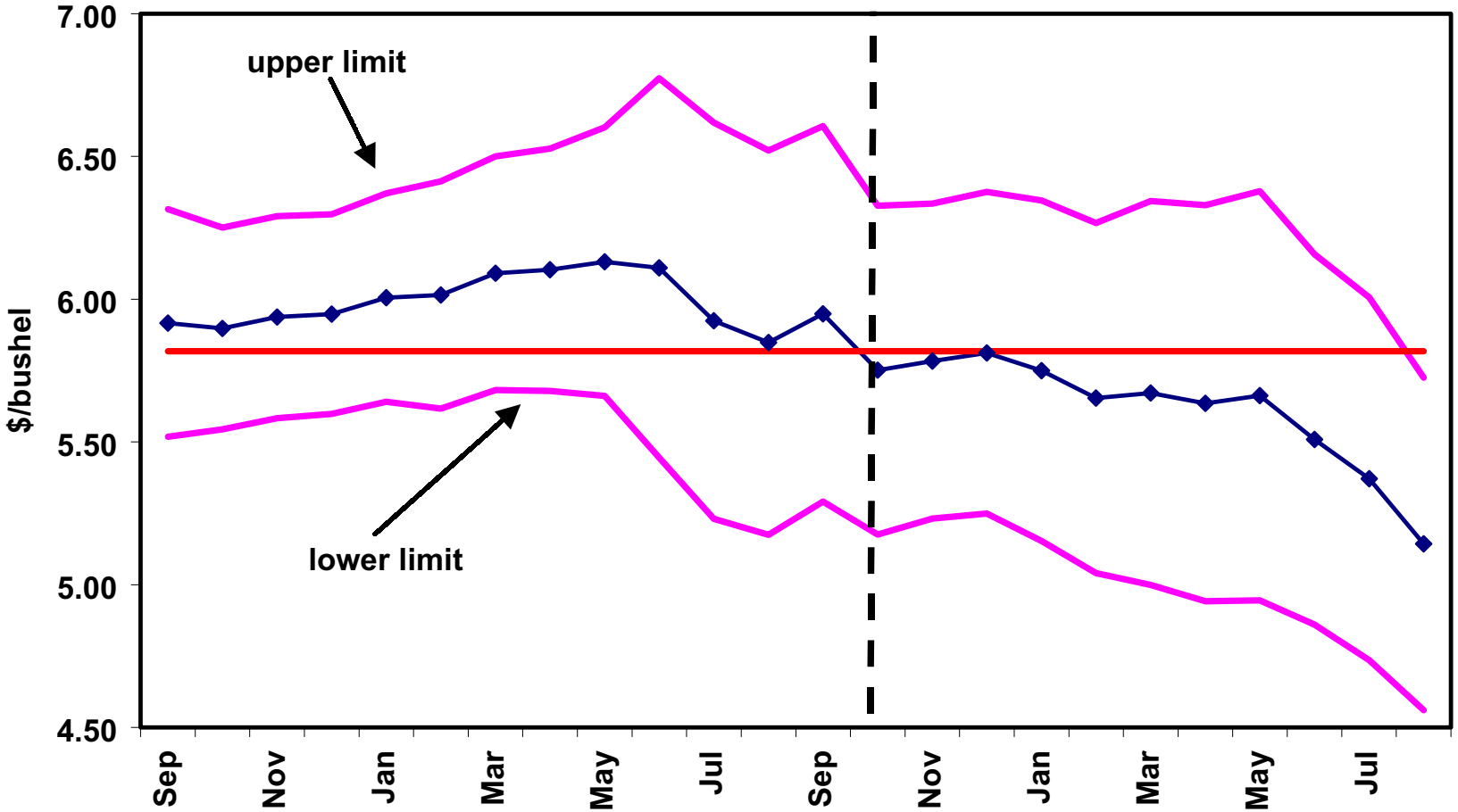
# 95% Confidence Interval for Average Monthly Price of Corn, Central Illinois, 1988-2000 Crop Years

(commercial carrying charges and no LDP)

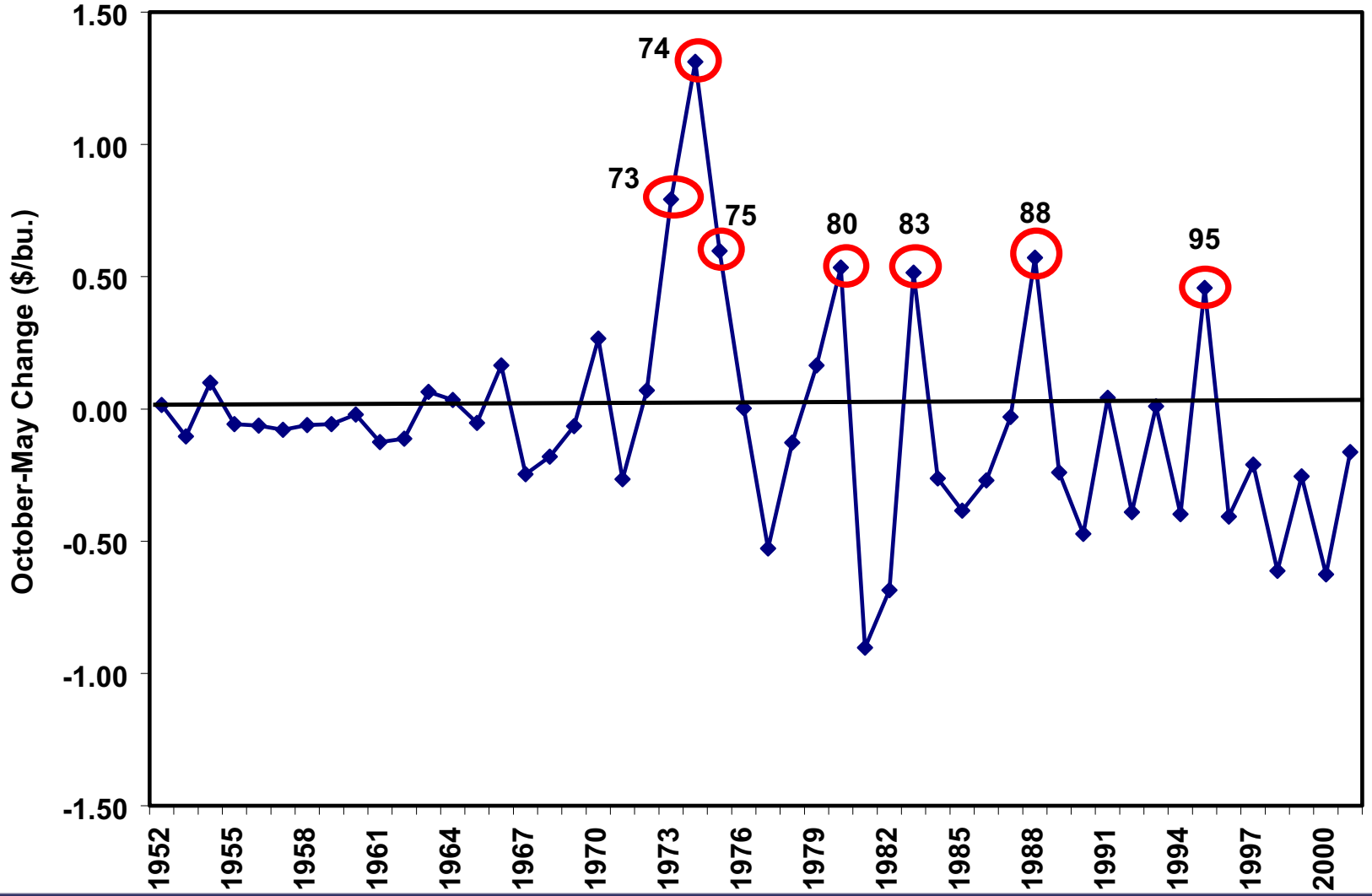


# 95% Confidence Interval for Average Monthly Price of Soybeans, Central Illinois, 1988-2000 Crop Years

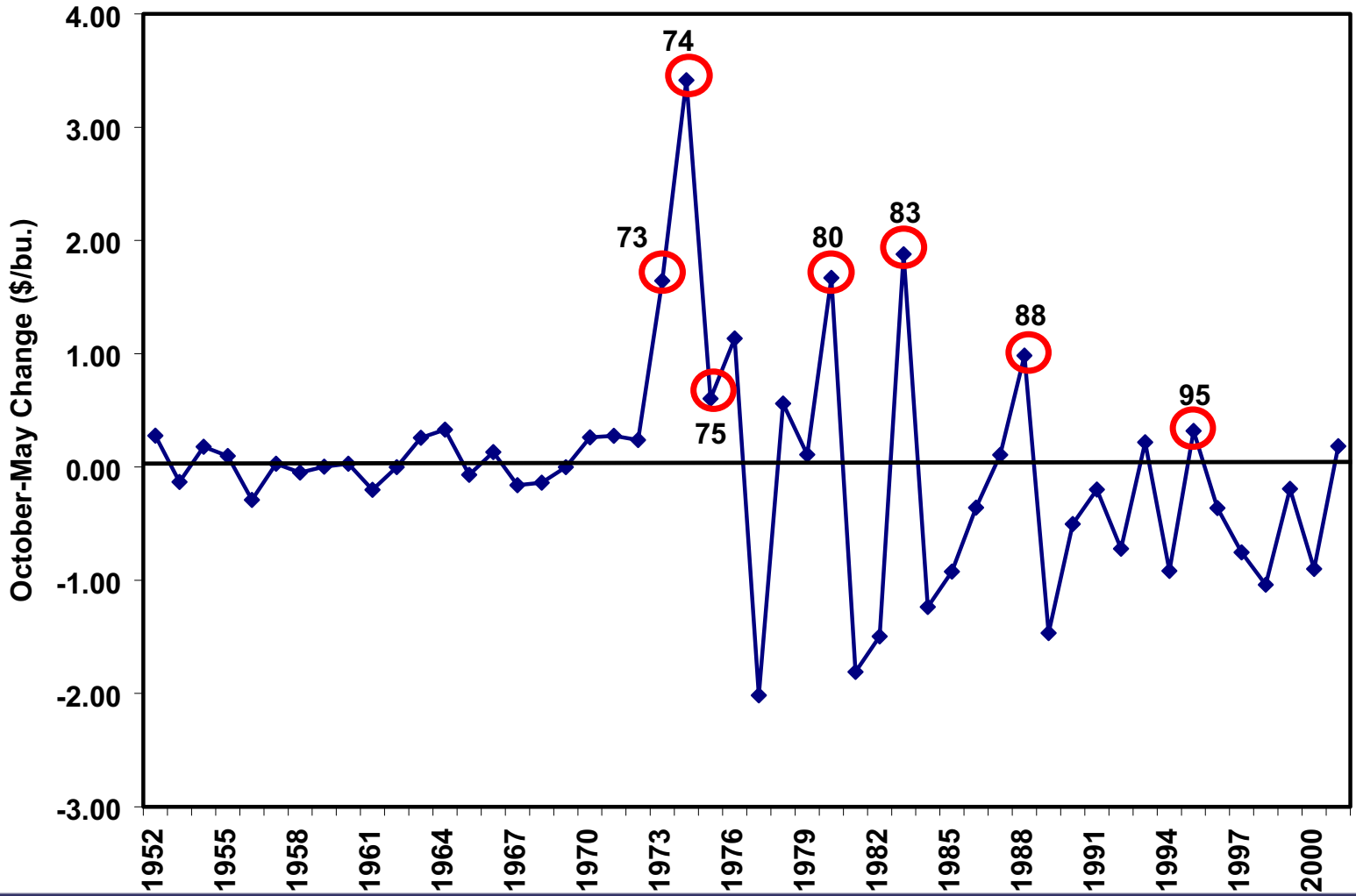
(commercial carrying charges and no LDP)



# Change in December Corn Futures Price, Planting to Harvest, 1952 - 2001



# Change in November Soybeans Futures Price, Planting to Harvest, 1952 - 2001



# Some Potential Cautions

- Transparency of transactions
- Ability to monitor transactions
- Creditworthiness and trustworthiness of counter-party
- Want to avoid “rogue trader” problems


# Farm Income 2002

**A Workshop Addressing Decision-Making Challenges in a Risky Environment**

# Benchmarking Your Marketing Performance and New Generation Contracts

***Handouts Prepared***

**By**

**Scott Irwin**
**Joao Martines**
**Darrel Good**

**December 10, 2001: Rochelle, IL**
**December 11, 2001: Decatur, IL**
**December 12, 2001: Mt. Vermon, IL**

# List of Transactions for Marketing Track Record Worksheet

Crop Year: 2000
Crop: Corn
Location: Central Illinois
Area: 500 acres
Yield: 150 bu./acre
Total Production: 75,000 bu.
Harvest Period: 9/8/00 - 10/12/00
Brokerage Fee on Futures: $0.01/bu. per round turn

No On-Farm Storage

| Date | Contract | Sell or Buy | Amount (bu.) | Price ($/bu.) |
|---|---|---|---|---|
| 04/03/2000 | Forward Cash | Sell | 25,000 | 2.29 |
| 05/01/2000 | December/00 Futures | Sell | 25,000 | 2.6175 |
| 10/12/2000 | Cash | Sell | 25,000 | 1.83 |
| 10/12/2000 | LDP | | 75,000 | 0.37 |
| 12/01/2000 | December/00 Futures | Buy | 25,000 | 2.10 |
| 12/01/2000 | July/01 220 Calls | Buy | 50,000 | 0.225 |
| 03/12/2001 | Cash | Sell | 15,000 | 1.99 |
| 06/22/2001 | July/01 220 Calls | Sell | 50,000 | 0.00 |
| 07/12/2001 | Cash | Sell | 10,000 | 2.08 |

**Commercial and On-farm Storage Costs, 2000 Crop Year**

| | Corn | | | | | | Soybeans | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commercial Cost | | | On-Farm Variable Cost | | | Commercial Cost | | | On-Farm Variable Cost | | |
| Months Stored | Storage | Interest | Total | Storage | Interest | Total | Storage | Interest | Total | Storage | Interest | Total |
| | | | ---cents/bushel--- | | | | | | ---cents/bushel--- | | | |
| **1** | 17.1 | 1.4 | 18.5 | 8.5 | 1.4 | 9.9 | 13.0 | 3.9 | 16.9 | 7.8 | 3.9 | 11.8 |
| **2** | 17.1 | 2.8 | 19.9 | 8.7 | 2.8 | 11.4 | 13.0 | 7.9 | 20.9 | 7.8 | 7.9 | 15.7 |
| **3** | 17.1 | 4.1 | 21.3 | 8.8 | 4.1 | 13.0 | 13.0 | 11.8 | 24.8 | 7.8 | 11.8 | 19.7 |
| **4** | 19.1 | 5.5 | 24.6 | 9.0 | 5.5 | 14.5 | 15.0 | 15.8 | 30.8 | 7.8 | 15.8 | 23.6 |
| **5** | 21.1 | 6.9 | 28.0 | 9.2 | 6.9 | 16.0 | 17.0 | 19.7 | 36.7 | 7.8 | 19.7 | 27.6 |
| **6** | 23.1 | 8.3 | 31.4 | 9.3 | 8.3 | 17.6 | 19.0 | 23.7 | 42.7 | 7.8 | 23.7 | 31.5 |
| **7** | 25.1 | 9.6 | 34.8 | 9.5 | 9.6 | 19.1 | 21.0 | 27.6 | 48.6 | 7.8 | 27.6 | 35.5 |
| **8** | 27.1 | 11.0 | 38.2 | 9.7 | 11.0 | 20.7 | 23.0 | 31.6 | 54.6 | 7.8 | 31.6 | 39.4 |
| **9** | 29.1 | 12.4 | 41.5 | 9.8 | 12.4 | 22.2 | 25.0 | 35.5 | 60.5 | 7.8 | 35.5 | 43.4 |
| **10** | 31.1 | 13.8 | 44.9 | 10.0 | 13.8 | 23.8 | 27.0 | 39.5 | 66.5 | 7.8 | 39.5 | 47.3 |

Note: Commercial storage costs are drawn from an inforr
metal bin and are drawn from the following publication: Dhuyvetter, K.C., G.L. Hamman, and J.P. Harner, III. *The Economics of On-Farm Farm Storage* , MF-2474, Kansas State University Agricultural Ex
0.25 percent shrink factor is used. This estimate is based on consulations with agricultural engineei
and soybeans is based on the harvest price. Interest opportunity costs are computed using the harvest cash price and an annual interest rate of ten percent.

# Marketing Track Record Worksheet for Corn, 2000 Crop Year

| Description | Price or Cost ($/bushel) | | Quantity (bushel) | Total Revenue or Cost ($) | |
|---|---|---|---|---|---|
| **Panel 1. Cash Sales** | | | | | |
| Forward Cash (4/3/00) | _____ | X | _____ | _____ | A |
| Cash (10/12/00) | _____ | X | _____ | _____ | B |
| Cash (3/12/01) | _____ | X | _____ | _____ | C |
| Cash (7/12/01) | _____ | X | _____ | _____ | D |
| TOTAL CASH SALES | | | (A + B + C + D) → | _____ | E |
| **Panel 2. Carrying Cost** | | | | | |
| Forward Cash (4/3/00) = 0 month | _____ | X | _____ | _____ | F |
| Cash (10/12/00) = 0 month | _____ | X | _____ | _____ | G |
| Cash (3/12/01) = 5 months | _____ | X | _____ | _____ | H |
| Cash (7/12/01) = 9 months | _____ | X | _____ | _____ | I |
| TOTAL CARRYING COST | | | (F + G + H + I) → | _____ | J |
| **Panel 3. Futures & Options Gains/Losses** | | | | | |
| Sell Dec/00 Futures (5/1/00) | _____ | X | _____ | _____ | K |
| Buy Dec/00 Futures (12/1/00) | _____ | X | _____ | _____ | L |
| Buy July/01 220 Call (12/1/00) | _____ | X | _____ | _____ | M |
| Sell July/01 220 Calls (6/22/01) | _____ | X | _____ | _____ | N |
| TOTAL FUTURES/OPTIONS | | | (K - L - M + N) → | _____ | O |
| **Panel 4. Futures & Options Brokerage Cost** | | | | | |
| December/00 Futures | _____ | X | _____ | _____ | P |
| July/01 220 Call | _____ | X | _____ | _____ | Q |
| TOTAL FUTURES/OPTIONS FEES | | | (P + Q) → | _____ | R |
| **Panel 5. LDP / MLG** | | | | | |
| LDP (10/12/00) | _____ | X | _____ | _____ | S |
| **Panel 6. Farm Net Revenue (harvest equivalent)** | | | | | |
| | | | (E - J + O - R + S) → | _____ | T |
| **Panel 7. Farm Net Price (harvest equivalent)** | | | | | |
| | | | (T / 75,000) → | _____ | U |

**Comparison of Corn Marketing Performance to Benchmarks, 1995-2000 Crop Years**

| | | Peer Benchmark | Market Benchmarks | | Professional Benchmark |
|---|---|---|---|---|---|
| Crop Year | Your Marketing Track Record | USDA Average Price Received for Illinois | Central Illinois 24-month Benchmark | Central Illinois 20-month Benchmark | AgMAS Advisory Services |
| | | | ---$/bushel (harvest equivalent)--- | | |
| **1995** | | 3.06 | 2.90 | 3.07 | 3.04 |
| **1996** | | 2.50 | 2.65 | 2.67 | 2.63 |
| **1997** | | 2.23 | 2.33 | 2.27 | 2.32 |
| **1998** | | 1.97 | 2.24 | 2.12 | 2.17 |
| **1999** | | 1.93 | 2.05 | 1.97 | 2.02 |
| **2000** | | 1.97 | 2.09 | 2.01 | 2.12 |
| **Average** | | 2.28 | 2.38 | 2.35 | 2.38 |

Notes: The peer benchmark adjusts post-harvest sales by commercial storage costs and interest opportunity costs. The state average LDP and marketing loan gain are included in the peer benchmark for 1998, 1999 and 2000. The peer benchmark does not include futures and options profits or losses. The market and professional benchmarks also adjust post-harvest sales by commercial storage costs and interest opportunity costs. LDP and marketing loan gains are included in the market and professional benchmarks for 1998, 1999 and 2000. For the market benchmarks, LDP and marketing loan gains are assumed to occur as corn is priced routinely each day. For the professional benchmarks, LDP and marketing loan gains follow advisory service recommendations.

**Comparison of Soybean Marketing Performance to Benchmarks, 1995-2000 Crop Years**

| Crop Year | Your Marketing Track Record | Peer Benchmark | Market Benchmarks | | Professional Benchmark |
|---|---|---|---|---|---|
| | | USDA Average Price Received for Illinois | Central Illinois 24-month Benchmark | Central Illinois 20-month Benchmark | AgMAS Advisory Services |
| | | | ---$/bushel (harvest equivalent)--- | | |
| **1995** | _____ | 6.59 | 6.26 | 6.39 | 6.59 |
| **1996** | _____ | 7.17 | 7.08 | 7.21 | 7.27 |
| **1997** | _____ | 6.17 | 6.30 | 6.23 | 6.40 |
| **1998** | _____ | 5.19 | 5.86 | 5.64 | 5.82 |
| **1999** | _____ | 5.41 | 5.50 | 5.30 | 5.67 |
| **2000** | _____ | 5.29 | 5.42 | 5.38 | 5.44 |
| **Average** | _____ | 5.97 | 6.07 | 6.02 | 6.20 |

Notes: The peer benchmark adjusts post-harvest sales by commercial storage costs and interest opportunity costs. The state average LDP and marketing loan gain are included in the peer benchmark for 1998, 1999 and 2000. The peer benchmark does not include futures and options profits or losses. The market and professional benchmarks also adjust post-harvest sales by commercial storage costs and interest opportunity costs. LDP and marketing loan gains are included in the market and professional benchmarks for 1998, 1999 and 2000. For the market benchmarks, LDP and marketing loan gains are assumed to occur as soybeans is priced routinely each day. For the professional benchmarks, LDP and marketing loan gains follow advisory service recommendations.

# SUPER PRO

**The best track record in the Industry!**

Over the last three years, we have outperformed the market in soybeans by an average of $1.50/bu.

| Year | Super Pro Cash Sales Prices | Futures & Options Profits | Super Pro Net Price | USDA National Average Cash Price | Super Pro Versus National Average Cash Price |
|---|---|---|---|---|---|
| | | | ---$/bushel--- | | |
| 1998/99 | 5.58 | -0.05 | 5.53 | 4.93 | +0.60 |
| 1999/00 | 5.82 | 0.61 | 6.43 | 4.63 | +1.80 |
| 2000/01 | 5.89 | 0.76 | 6.65 | 4.55 | +2.10 |
| **Average** | | | **6.20** | **4.70** | **+1.50** |

Note: The Super Pro cash sales price is based on central Illinois prices. Cash sales prices are adjusted for carrying charges to January 1 and include LDPs as follows: 98/99 -- $0.65; 99/00 -- $0.80; 00/01 -- $1.10. The Super Pro net price does not include subscription costs or management fees.

**Behavior of December Corn Futures Prices During the Pre-Harvest Period, 1952-2001**

| | Average December Futures Price | | | | Change in December Futures Price | | |
|---|---|---|---|---|---|---|---|
| Years | March 1 | May 1 | July 1 | Oct 1 | Oct 1 - March 1 | Oct 1 - May 1 | Oct 1 - July 1 |
| | ---$/bushel--- | | | | ---$/bushel--- | | |
| **1952-1972** | 1.29 | 1.29 | 1.29 | 1.25 | -0.04 | -0.04 | -0.05 |
| **1973-1974** | 2.29 | 2.07 | 2.43 | 3.13 | 0.84 | 1.05 | 0.69 |
| **1975-1995** | 2.62 | 2.64 | 2.68 | 2.55 | -0.07 | -0.09 | -0.12 |
| **1996-2001** | 2.70 | 2.67 | 2.49 | 2.29 | -0.41 | -0.38 | -0.20 |
| **1952-2001** | 2.06 | 2.05 | 2.06 | 2.00 | -0.06 | -0.05 | -0.07 |

Note: The futures price data set for 1952-1997
Enhance Income of Crop Producers." *Review of Agricultural Economics*. 20(1998):308-331. October 1st, which is approximately the mid-point of the corn harvest in Illinois in most years, is used to represent the harvest-time price of the December corn futu
defined as December 1, as is done in the previously referenced article.

**Behavior of November Soybean Futures Prices During the Pre-Harvest Period, 1952-2001**

| Years | Average November Futures Price | | | | Change in November Futures Price | | |
|---|---|---|---|---|---|---|---|
| | March 1 | May 1 | July 1 | Oct 1 | Oct 1 - March 1 | Oct 1 - May 1 | Oct 1 - July 1 |
| | ---$/bushel--- | | | | ---$/bushel--- | | |
| **1952-1972** | 2.56 | 2.53 | 2.63 | 2.58 | 0.03 | 0.05 | -0.05 |
| **1973-1974** | 5.31 | 5.02 | 6.06 | 7.55 | 2.24 | 2.53 | 1.49 |
| **1975-1995** | 6.29 | 6.39 | 6.46 | 6.19 | -0.10 | -0.19 | -0.26 |
| **1996-2001** | 5.95 | 6.02 | 5.59 | 5.51 | -0.44 | -0.51 | -0.08 |
| **1952-2001** | 4.64 | 4.67 | 4.73 | 4.65 | 0.01 | -0.02 | -0.08 |

Note: The futures price data set for 1952-1997 is defined as November 1, as is done in the previously referenced article. October 1st, which is approximately the mid-point of the soybean harvest in Illinois in most years, is used to represent the harvest-time price of the November soybean

Enhance Income of Crop Producers." *Review of Agricultural Economics*. 20(1998):308-331.