



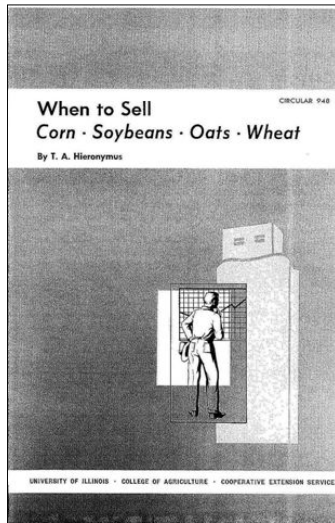
When to Sell Corn and Soybeans in Illinois

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University of Illinois



2010 Illinois Farm Economics Summit
The Profitability of Illinois Agriculture: Managing in a Strong Ag Economy

Harness the Power
of the Internet



*“Choosing the time to market grain is a difficult and important task. Here is the key question in deciding when to sell corn, soybeans, wheat, and oats: **Will the price rise enough from harvest to the time of selling to more than cover the costs of holding grain.**”*

**Tom Hieronymus,
1966**

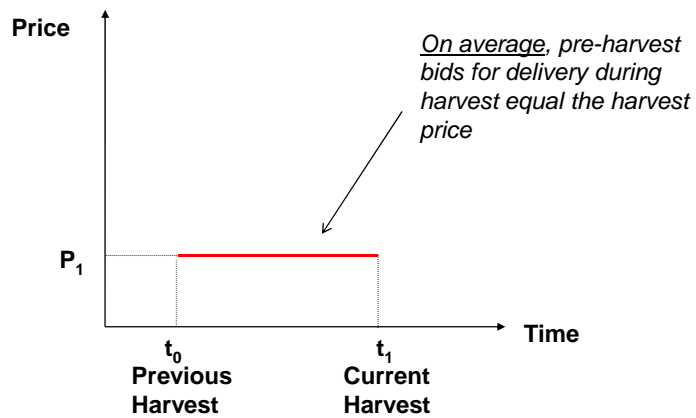


Outline

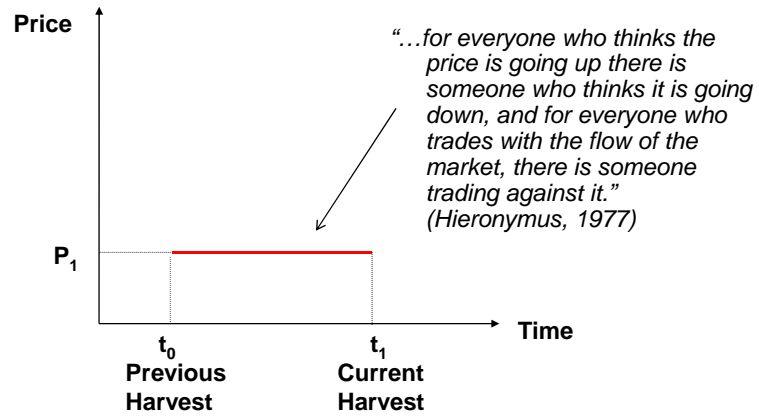
- Estimate long-term seasonal price tendencies for corn and soybeans
 - Pre-harvest
 - Post-harvest
- Examine averages as well as variability
- Role in marketing plan



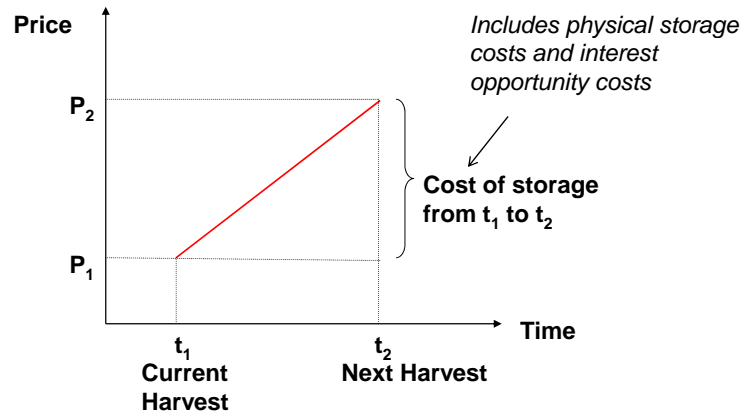
Theoretical Seasonality of Harvest Delivery Forward Contract Prices



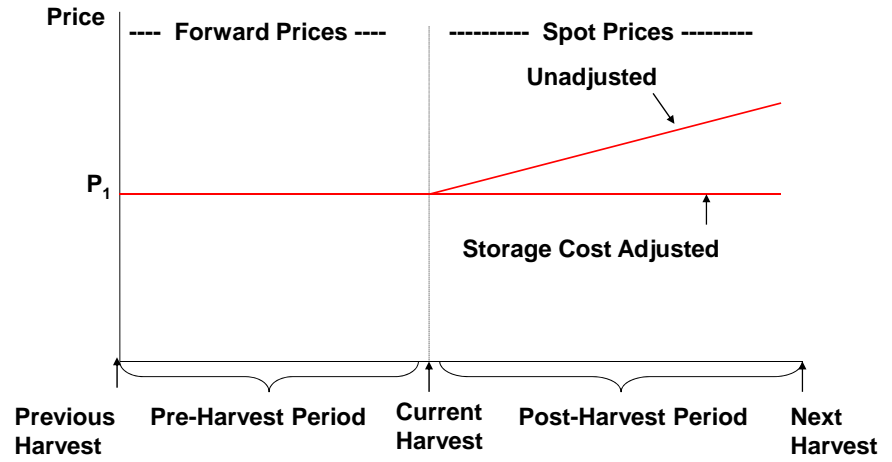
Theoretical Seasonality of Harvest Delivery Forward Contract Prices



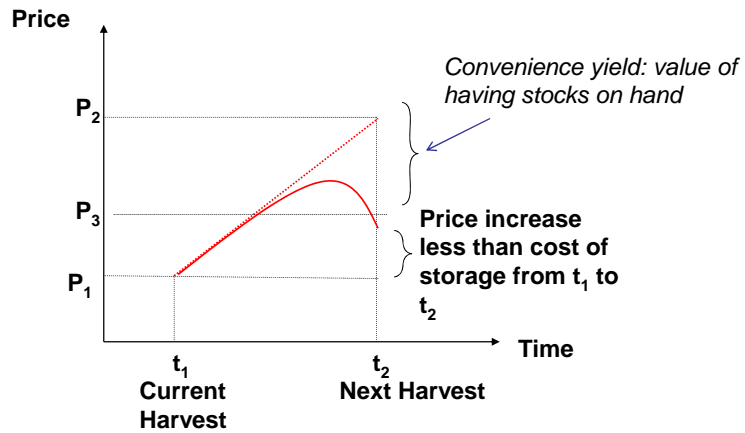
Theoretical Seasonality of Post-Harvest Spot Prices



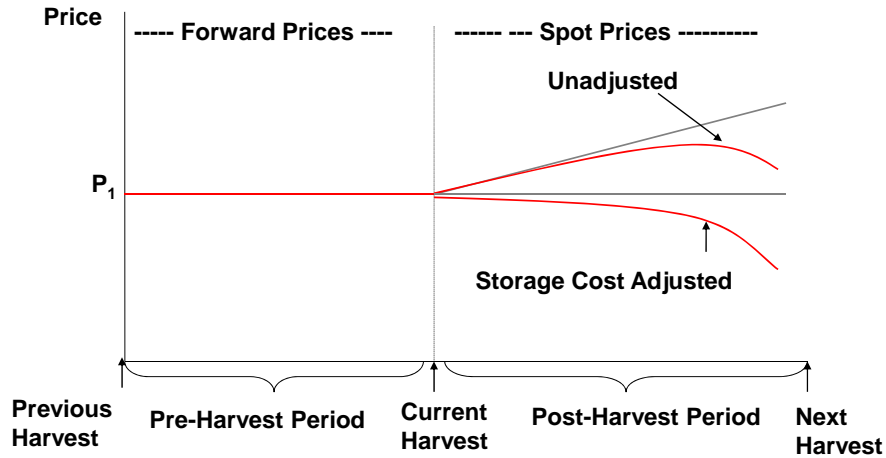
Theoretical Seasonality of Pre- and Post-Harvest Prices



Theoretical Seasonality of Post-Harvest Spot Prices with "Convenience Yield"

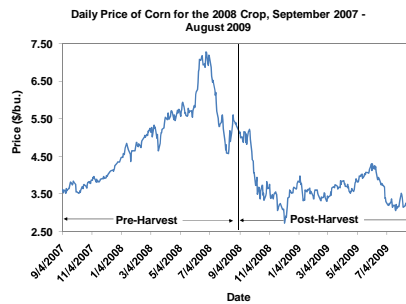
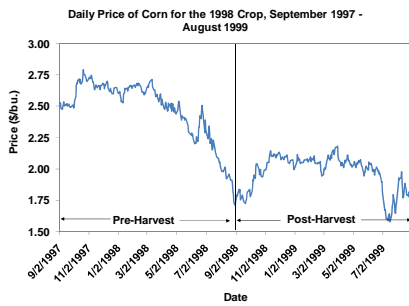


Theoretical Seasonality of Pre- and Post-Harvest Prices with "Convenience Yield"



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What We Observe



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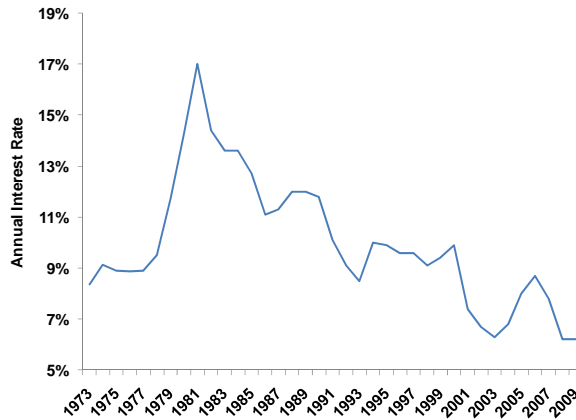
Developing a Seasonal Price Index Harness the Power of the Internet

- **Define marketing window for a crop**
 - 12 months pre-harvest
 - 12 months post-harvest
- **Determine representative sample period**
 - 1973-2009
- **Collect prices**
 - Pre-harvest: daily central IL forward bids for harvest delivery
 - Post-harvest: daily central IL spot (cash) bids
- **Adjust post-harvest prices for storage costs**
 - Commercial physical storage costs
 - Interest opportunity costs

Commercial Storage Cost Schedules for Corn and Soybeans in Central Illinois, 1973-2009

Period	Corn	Soybeans
1973-1979	8 cents fixed thru Jan. 1 cent per mo. after Jan.	8 cents fixed thru Jan. 1 cent per mo. after Jan.
1980-1988	12.9 cents fixed thru Jan. 2.1 cent per mo. after Jan.	14.2 cents fixed thru Jan. 2.4 cent per mo. after Jan.
1989-2006	13 cents fixed thru Dec. 2 cent per mo. after Dec.	13 cents fixed thru Dec. 2 cent per mo. after Dec.
2007	14.5 cents fixed thru Dec. 2.4 cent per mo. after Dec.	16 cents fixed thru Dec. 2.6 cent per mo. after Dec.
2008-2009	17 cents fixed thru Dec. 2.75 cent per mo. after Dec.	18 cents fixed thru Dec. 3 cent per mo. after Dec.

Interest Rate for Short-Term Farm Operating Loans, 1973-2009



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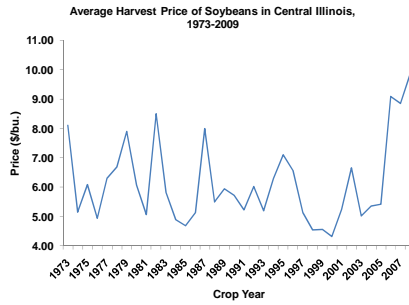
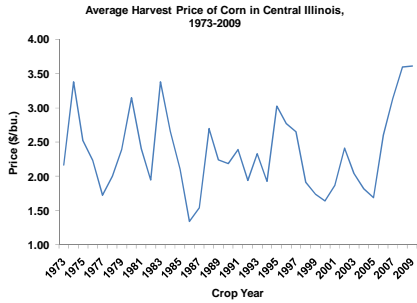
The Basic Idea

Week	1973	1974	1975	1976	1977	2005	2006	2007	2008	2009	Average
p41	1.17	2.18	3.02	2.49	2.37	.....	2.16	2.22	2.89	3.56	4.09	2.41
p42	1.17	2.11	3.16	2.45	2.34	.....	2.17	2.20	3.00	3.71	3.89	2.41
p43	1.17	2.08	3.13	2.44	2.33	.....	2.17	2.21	3.11	3.73	3.85	2.42
p44	1.18	1.98	3.14	2.42	2.32	.....	2.18	2.18	3.13	3.82	3.95	2.41
p45	1.18	2.01	3.08	2.33	2.25	.....	2.15	2.17	3.26	3.92	3.91	2.41
.....
m31	3.14	2.46	2.38	1.44	1.70	.....	1.74	2.42	4.79	2.63	2.89	2.10
m32	3.12	2.56	2.36	1.34	1.64	.....	1.66	2.57	4.10	2.76	3.09	2.08
m33	3.15	2.60	2.27	1.32	1.70	.....	1.53	2.52	4.22	2.58	3.09	2.09
m34	3.10	2.60	2.28	1.24	1.71	1.59	2.66	4.71	2.50	3.22	2.10
m35	2.98	2.54	2.29	1.20	1.64	1.65	2.43	4.73	2.54	3.21	2.05



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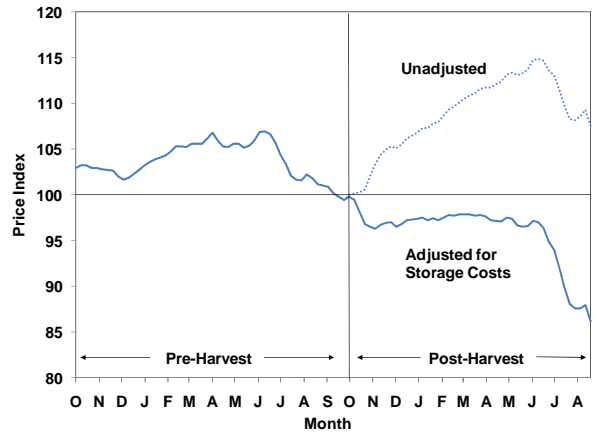
A Problem



Normalized Seasonal Price Index

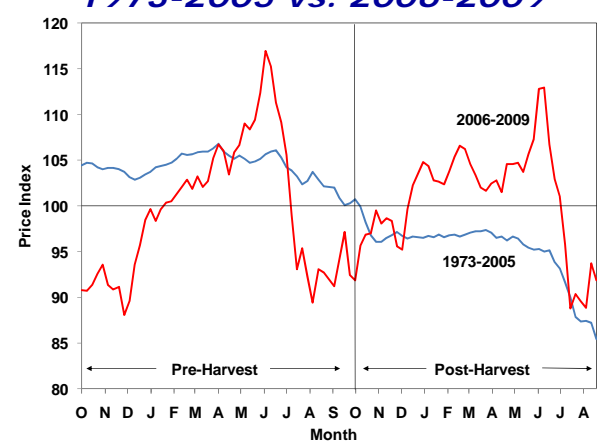
- Average prices across the 24 month marketing window for each crop
 - 12 months pre-harvest forward bids
 - 12 months post-harvest spot bids net of storage costs
- Divide all prices in a marketing window by the 24 month average for that window
 - Prices in a marketing window then expressed as a percent of 24 month average
 - Average price for each crop = 100
- Finally, average the normalized prices for the same week in the marketing window across all years over 1973-2009

Seasonal Price Index for Corn in Central Illinois, 1973-2009



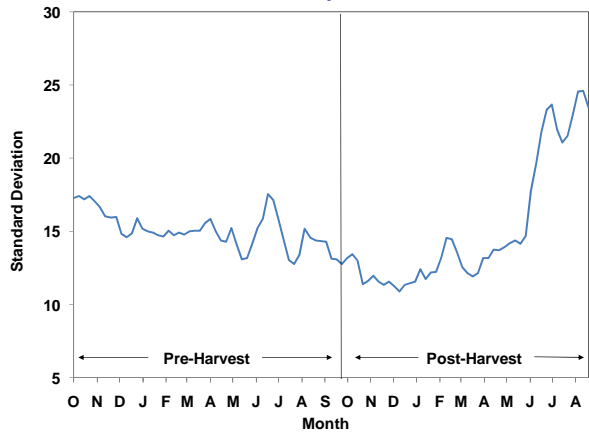
Average price for each crop = 100

Seasonal Price Index for Corn in Central Illinois, 1973-2005 vs. 2006-2009



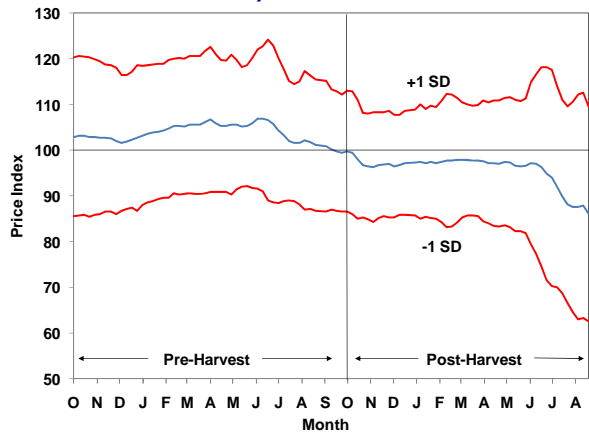
Average price for each crop = 100

Variability of Seasonal Price Index for Corn in Central Illinois, 1973-2009



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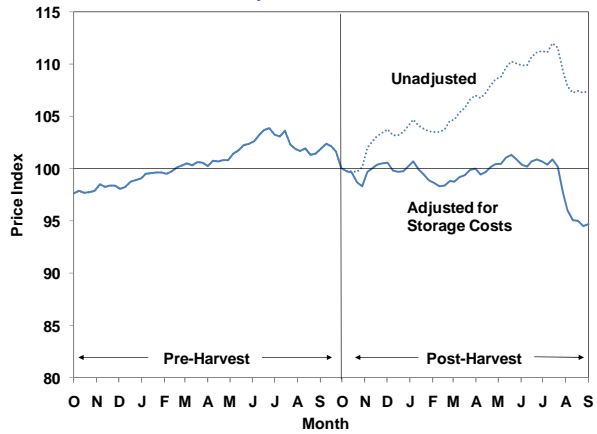
Seasonal Price Index Range for Corn in Central Illinois, 1973-2009



Average price for each crop = 100

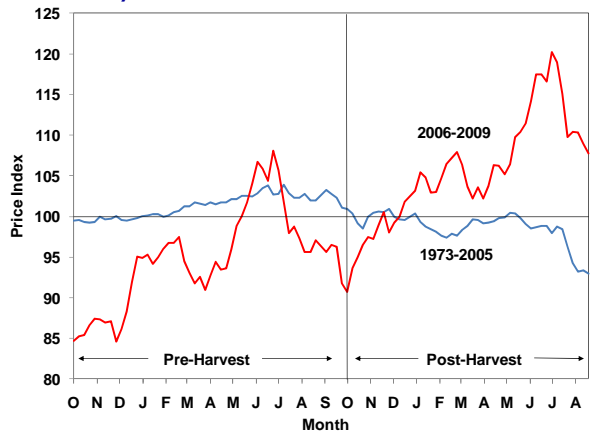
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Seasonal Price Index for Soybeans in Central Illinois, 1973-2009



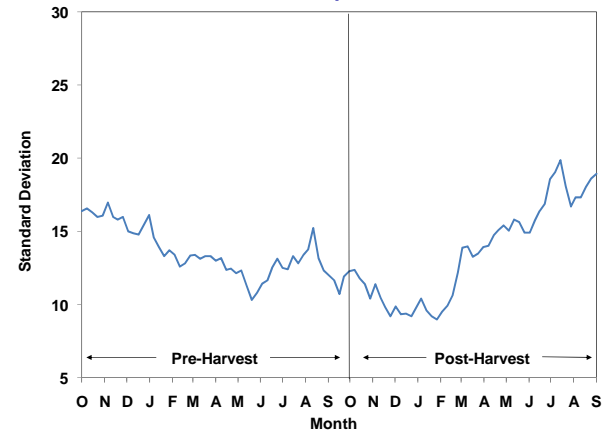
Average price for each crop = 100

Seasonal Price Index for Soybeans in Central Illinois, 1973-2005 vs. 2006-2009



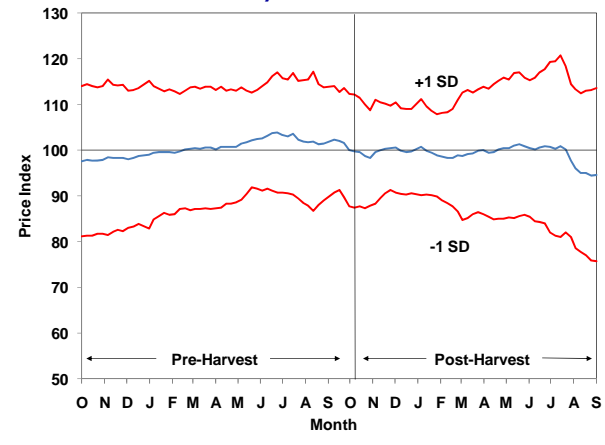
Average price for each crop = 100

Variability of Seasonal Price Index for Soybeans in Central Illinois, 1973-2009



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Seasonal Price Index Range for Soybeans in Central Illinois, 1973-2009



Average price for each crop = 100

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Summary of Seasonal Price Index Results for Central Illinois, 1973-2009

Period	Corn	Soybeans
Pre-Harvest	104	101
Post-Harvest	96	99
Best	106	103
Worst	92	96

Best period for corn: April-May pre-harvest
 Best period for soybeans: June-July pre-harvest
 Worst period for corn: June-August post-harvest
 Worst period for soybeans: August post-harvest

Emerging Rules *

- Modest pre-harvest premium for corn but not soybeans
- Storage pays in soybeans but not corn
- Avoid holding grain into the next summer
- Seasonal component of prices is highly variable
- Be skeptical of "seasonal" trading systems



*with apologies to Tom Hieronymus