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## EC04-833 Hedging and Basis Considerations for Swine Livestock Risk Protection Insurance

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# Hedging and Basis Considerations For Swine Livestock Risk Protection Insurance

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# Hedging and Basis Considerations For Swine Livestock Risk Protection Insurance

## Background

Livestock Risk Protection (LRP) Insurance for swine is a price-risk management tool initially offered in July 2002 to Iowa swine producers. It was expanded to Nebraska, Indiana, Illinois, Kansas, Minnesota, Nevada, Oklahoma, Texas, Utah, and Wyoming in November 2003. LRP indemnifies against declines in hog sale prices, as measured by a national two-day weighted average negotiated and swine/pork market formula hog price (equivalent to the Chicago Mercantile Exchange (CME) lean hog index). Producers can use LRP insurance to protect against declines in their own cash sales price while still benefiting from price increases, similar to using CME put options. When using CME put options or futures contracts to protect against price level changes, hedgers remain exposed to basis risk (a change in the difference between their local cash price and futures price). As a result, livestock producers using futures or options to hedge selling prices often use historical basis data to forecast basis and expected cash selling price for future livestock sales. Although futures or option contracts provide protection against decreases (and, in the case of futures contracts, increases) in price level, changes in basis result in an actual selling price higher or lower than the expected selling price.

Similar to using futures or options, hog producers using LRP insurance to hedge sales prices are also exposed to a type of basis risk. However, the difference between producers' selling price and futures price, or *futures basis*, is not relevant when using LRP. Instead, the difference between the producers' selling price and the two-day weighted average negotiated and swine/pork market formula hog price (carcass weight basis), or *LRP basis*, is used to determine the expected selling price for future sales of hogs. The LRP insurance contract pays an indemnity to the producer if the Actual Ending Value (AEV), mea-

sured by the two-day weighted average negotiated and swine/pork market formula hog price or CME lean hog index, on the ending date of the contract falls below the coverage price established when the producer purchased the coverage endorsement. The amount of the indemnity is the difference between the coverage price and AEV. Therefore, the changes in the relationship between a producer's selling price relative to the AEV (i.e., changes in the LRP basis) will determine whether the actual selling price is equal to the expected selling price. Consequently, forecasting LRP basis is important when hedging with LRP. This paper examines historical LRP basis and demonstrates its use in hedging with LRP.

## Hedging With Futures and Options – A Review

### *Futures Hedging*

Futures hedging is using the futures market as a temporary substitute for a cash market transaction that is expected to occur at a date in the future. Hedging with futures protects producers against the risk of price level changes; however, changes in basis can result in higher or lower net selling prices. Consider, for example, that in January a hog producer who plans to sell 650 head of 185 lb. barrows and gilts (carcass weight basis) in the cash market in April decides to hedge the sale by selling three CME April lean hog futures contracts at \$50.00/cwt, the price of April lean hog futures in January. The producer estimates the futures basis in April for lean hogs to be -\$2.00/cwt (e.g., the April cash market will be \$2.00/cwt lower than the April futures market in April). The producer's expected selling price (ESP) in April can be found by adding the futures basis to the price level established by selling the April futures contracts and subtracting the brokerage commission for trading futures

contracts (here assumed to be \$100/contract, or \$0.25/cwt). The ESP is \$50.00/cwt +(-\$2.00/cwt) - \$0.25/cwt, or \$47.75/cwt. So, the producer expects to receive \$47.75 for the hogs, net of brokerage commission. This price will not change as a result of price level increases or decreases, but will change if basis is stronger or weaker than -\$2.00/cwt.

The actual selling price (ASP) for the producer's hogs will be determined in April when the hogs are sold in the cash market and the April futures contracts are offset by buying the futures contracts that were sold at the outset of the hedge. During the period of the hedge (January to April), the April lean hog futures price could increase or decrease, and the April futures basis could strengthen or weaken relative to the expected -\$2.00/cwt futures basis. Suppose price levels do decrease such that April lean hog futures are \$45.00/cwt in April, but April futures basis is -\$2.00/cwt, as expected. This situation is summarized in the table below.

<i>Date</i>	<i>Cash Market</i>	<i>Futures Market</i>	<i>Basis</i>
January	No action	Sell 3 CME April lean hog futures contracts at \$50/cwt	Expected April basis to be -\$2/cwt
April	Sell 650 head of 185 lb. hogs at \$43/cwt	Buy 3 CME April lean hog futures contracts at \$45/cwt	Actual April basis is -\$2/cwt
	Cash price received = \$43/cwt	Net on futures = \$5/cwt	No change

The ASP, after accounting for the futures transactions, is determined by adding gains on the futures trade to the cash selling price and subtracting brokerage commission. In this case, the ASP is \$47.75/cwt (cash price received of \$43.00/cwt plus the gain on futures trade of \$5.00/cwt less \$0.25/cwt brokerage commission). Here, the futures hedge protected the producer against a decline in price level. Moreover, the producer's ASP is equal to the ESP because the actual April futures basis of -\$2.00/cwt was exactly as forecasted in January.

The ASP will not equal the ESP if the actual April futures basis is not -\$2.00/cwt. To see this, suppose again that April lean hog futures prices in April are \$45.00/cwt but that basis is -\$4.00/cwt (\$2/cwt weaker than forecasted). In

this case, the cash market selling price is lower relative to the futures market, as shown in the following table.

<i>Date</i>	<i>Cash Market</i>	<i>Futures Market</i>	<i>Basis</i>
January	No action	Sell 3 CME April lean hog futures contracts at \$50/cwt	Expected April basis to be -\$2/cwt
April	Sell 650 head of 185 lb. hogs at \$41/cwt	Buy 3 CME lean hog futures contracts at \$45/cwt	Actual April basis is -\$4/cwt
	Cash price received = \$41/cwt	Net on futures = \$5/cwt	Actual basis \$2/cwt weaker than expected

In this case where the April futures basis was weaker than expected, the ASP was \$45.75/cwt (cash selling price of \$41.00/cwt plus the gain on futures contract of \$5.00/cwt less \$0.25/cwt brokerage commission). The same decline in price level resulted in the same gain on the futures trade (\$5.00/cwt); however, because the April futures basis was \$2.00/cwt weaker than expected, the cash price received was \$2.00/cwt less than in the previous example. Thus, the ASP was \$2/cwt less than before, and \$2/cwt less than the ESP. The ESP, as an expectation of gross revenue, is often used for budgeting purposes. In cases where the ASP is lower than the ESP, actual revenues are less than expected. Developing an ESP at the outset of a hedge that closely approximates the ASP is important when making budget decisions. Because the only difference between ESP and ASP in a futures hedge is determined by differences in actual futures basis relative to the expected futures basis, forecasting what the futures basis will be at the conclusion of the hedge is critical to minimizing the risk of receiving an actual sales price less than expected when the hedge was initiated.

It is also possible for the ASP to be higher than the ESP. This occurs when actual futures basis is stronger than the expected futures basis forecast. For example, suppose that in the example above, the actual April futures basis was -\$1.00/cwt (\$1.00/cwt stronger than expected). In this case, the ASP would be \$48.75/cwt (cash selling price of \$44.00/cwt plus the gain on futures contract of \$5.00/cwt less \$0.25/cwt brokerage commission), \$1.00/cwt higher than

the ESP of \$47.75/cwt. Another possibility in the examples above is that the price level increased between January and April. If this were to occur, the hedger would realize a loss on the futures transaction but would realize a higher selling price in the cash market. This would not cause a difference between the ASP and ESP. However, a decrease (increase) in the actual April futures basis relative to the expected April futures basis would still result in an ASP that was lower (higher) than the ESP.

### Options Hedging

Livestock producers can use options contracts to create a minimum expected selling price and, unlike hedging with futures, not be prevented from realizing higher selling prices in the event price level increases at the conclusion of the hedge. To do so, producers purchase put options, which give them the right but not obligation to sell the underlying futures contract at a specified strike price at any time during the life of the option. The minimum price established with the put option is determined by subtracting the option's premium (or purchase price) from the specified strike price. To translate the minimum price into an expected minimum selling price for the livestock, the appropriate futures basis must be added and the brokerage commission deducted, as in the futures hedge. Suppose, for example, that a hog producer purchases three April CME lean hog put options with a \$48/cwt strike price for \$1.50/cwt to create a minimum selling price for the sale of 650 head of 185 lb. hogs (carcass weight basis) in April. As before, the producer's estimated futures basis in April is -\$2.00/cwt and brokerage fees are \$0.25/cwt. The minimum expected sale price (MESP) is \$44.25/cwt ( $\$48.00/\text{cwt} - \$1.50/\text{cwt} + \text{\$-}2.00/\text{cwt} - \$0.25/\text{cwt}$ ). The ASP for the hogs in April will depend upon the price level (i.e., whether the put option is used) and the actual April futures basis. Suppose, as in the example above, that the April lean hog futures decline to \$45/cwt in April and that futures basis is -\$2.00/cwt (as forecasted). In this case, the put option with the strike price of \$48/cwt has \$3.00/cwt of intrinsic value and could be sold for \$3.00/cwt. The outcome of this option hedge is shown in the following table.

Date	Cash Market	Futures Market	Basis
January	No action	Buy 3 \$48/cwt CME April lean hog put options for \$1.50/cwt	Expected April basis to be -\$2/cwt
April	Sell 650 head of 185 lb. hogs at \$43/cwt	Sell 3 \$48/cwt CME April lean hog put options for \$3.00/cwt	Actual April basis is -\$2/cwt
	Cash price received = \$43/cwt	Net on options = \$1.50/cwt	No change

The ASP is computed as before (cash price received plus net on options less brokerage fees). Here, the ASP is \$44.25/cwt ( $= \$43.00/\text{cwt} + \$1.50/\text{cwt} - \$0.25/\text{cwt}$ ). The MESP was realized in this case when price levels decreased and the put options had value in April. Even with this price level decrease from \$50/cwt in January to \$45/cwt in April, the ASP could be lower than the MESP if actual April futures basis is weaker than the forecasted -\$2.00/cwt. Suppose, for example, that the actual April futures basis is -\$4.00/cwt. This effectively lowers the cash price received to \$41/cwt, but the net on options and brokerage fees remains the same so that the ASP is \$42.25/cwt, \$2.00/cwt less than the MESP. This \$2.00/cwt difference is a result of the actual April futures basis being \$2.00/cwt less than forecasted.

In the case of futures price level being higher than the strike price (\$48/cwt), the hedger would not offset the put option (i.e., let it expire worthless). The hogs would be sold at a higher cash market price, and only half the brokerage commission (from initially purchasing the put option) would be deducted. This would (assuming constant futures basis) result in ASP exceeding the MESP. Futures basis risk is still present, however, in that a futures basis weaker (stronger) than forecasted will decrease (increase) the ASP even when futures price level is higher than the option strike price.

Like futures hedging, hedging with put options leaves producers exposed to futures basis risk. As we will see below, hedging with LRP insurance contracts works similarly to options hedging and there is still basis risk present. However, the futures basis risk is replaced by a different basis risk, which is discussed in the next section.

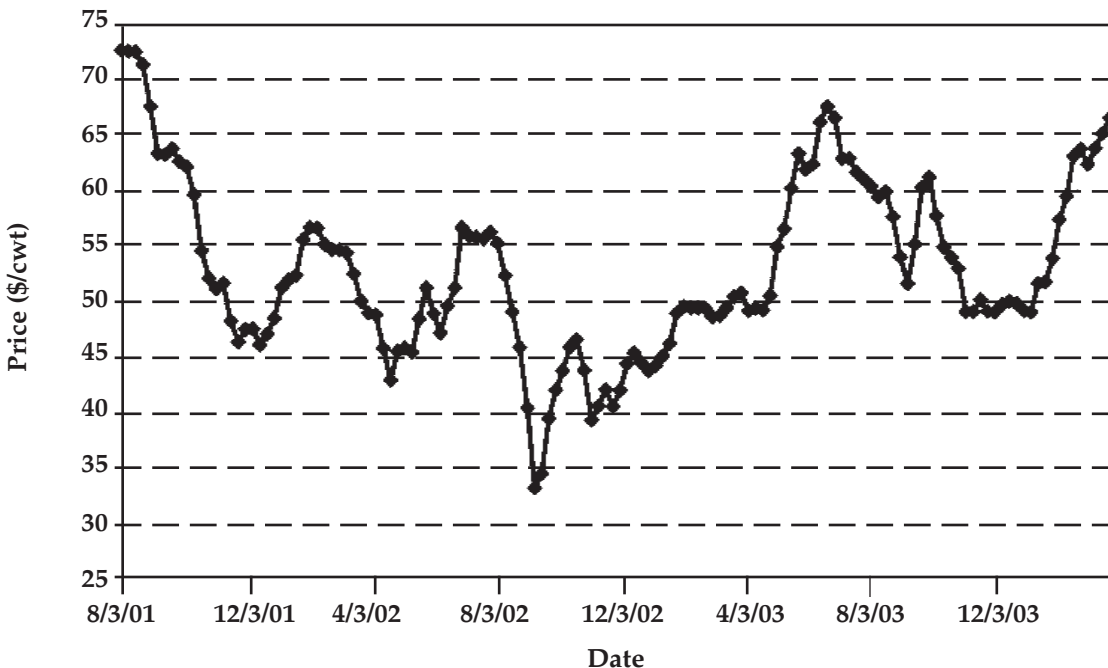
## Futures Basis vs. LRP Basis

When purchasing LRP insurance, hog producers select a coverage price which is based on a national cash market average price. If the AEV (actual ending value) of the LRP insurance policy (as measured by the AMS-USDA two-day weighted average national negotiated and swine/pork market formula price, which is equivalent to the CME lean hog index and hereinafter denoted "CME index") is less than the coverage price, the LRP insurance pays an indemnity equivalent to the difference between the coverage price and AEV. Conversely, if the AEV exceeds the coverage price, no indemnity is paid. The producers' ASP (actual sale price) is determined by adding any LRP indemnity received to the cash market selling price and deducting the LRP insurance premium paid. The ASP will differ from the coverage price (less premium) by the difference between the local cash market selling price (where/how the hogs are sold) and the LRP's AEV (CME index). This difference is called LRP basis. Like futures basis, LRP basis must be estimated for the time of the cash market sale (when the LRP policy ends) to determine the expected sales price for the hogs.

LRP basis is different than futures basis; therefore, using historical futures basis to estimate LRP basis is inappropriate. However, similar techniques can be used. Rather than examin-

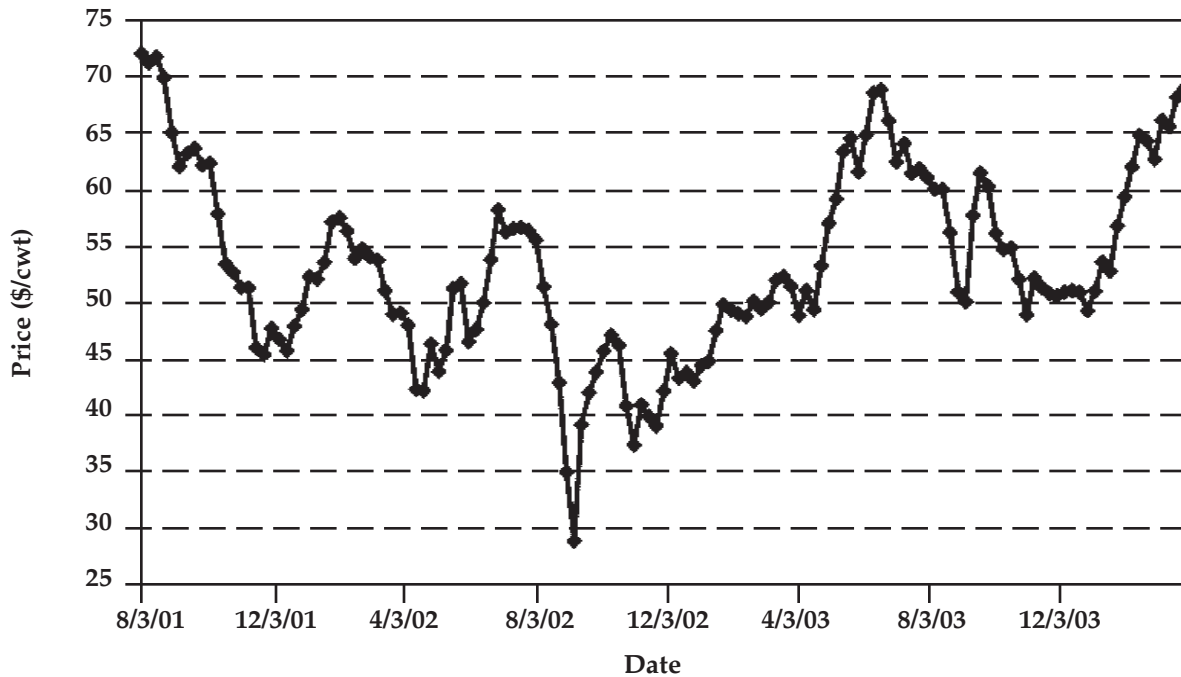
ing seasonal trends in the difference between local cash price and futures price (i.e., futures basis), the difference between the local cash price and the CME index price (i.e., LRP basis) is of interest. *Figures 1 and 2* illustrate the CME index and Western Corn Belt (WCB) average hog price from August 2001 to March 2004. During this period, lowest prices (in the \$30s/cwt) occurred in the second half of 2002 as a result of increased hog slaughter generating a relative increase in commercial pork production. Highest prices occurred in the second half of 2001 as a result of lower hog slaughter and in 2004 due to strong domestic and export demand for pork. The prices (*Figures 1 and 2*) indicate that the WCB average hog price generally tracks closely to the CME index price. This is in large part because the CME index price includes in its weighted average prices for hog sales made in the WCB. Still, there is not always a one-to-one correspondence and the WCB average hog LRP basis changes.

The WCB average hog price is used as an estimate of a producers' actual selling price. Depending upon an individual producer's location and contractual arrangements for hog sales, other hog price series may serve as a closer approximation to a producer's actual selling prices. Therefore, the remaining figures and tables in this paper contain the Iowa/S. Minnesota base and average hog prices, Eastern Corn Belt (ECB) base and average hog prices, national base and



Source: University of Nebraska

Figure 1. CME Lean Hog Cash Index, 2001-2004.



Source: University of Nebraska

Figure 2. Western Corn Belt Negotiated Weekly Weighted Average Hog Price.

net hog prices, and WCB base hog price, in addition to the WCB average hog price.

Table 1 reports summary statistics for LRP basis and traditional futures basis for hogs using the price series indicated above from August 2001 to March 2004. The mean LRP basis for the WCB average hog price of \$0.14/cwt indicates that, on average, the WCB average hog price is \$0.14/cwt higher than the CME index. Relative to the CME index, the base price series are lower than the average price series (i.e., the base price series result in a weaker basis). This is due to the average price series including quality premiums/discounts which are typically positive (the base price series does not include premiums). The national base and net hog prices are, on average, higher than the WCB, ECB, and IA./S. Minn. base and average prices, resulting in a stronger basis for the national base and net hog price series. Further, the national base and net price series are somewhat less variable, as measured by the standard deviation and coefficient of variation, suggesting that forecasting or predicting the national basis may be relatively more accurate than forecasting the other hog series basis. The mean LRP basis was about \$0.10/cwt higher than the traditional nearby futures basis. The range in LRP basis from August 2001 to March 2004 was several dollars smaller than the

range in futures basis. The coefficient of variation (CV) measures variability in the basis after accounting for different sized means. A higher CV is associated with more variability and increased difficulty in forecasting the basis for a future date. As shown in Table 1, the CV for LRP basis is lower than for futures basis for each of the hog price series, indicating that LRP basis is less variable (more predictable) about its mean. Because LRP basis is less variable than futures basis, accounting for the variability in forecasting LRP basis may be less difficult than for futures basis, offering producers using LRP an advantage over futures and options.

The seasonal trend in hog prices is for the highest prices of the year to occur in the summer months (Figure 3). The yearly low is generally posted in December. Figures 4 through 11 illustrate the seasonal trends in LRP basis using data from August 2001 to March 2004 for the hog price series in Table 1. In general, hog LRP basis tends to be strongest during the second quarter of the year and post a seasonal low in August. However, the strong seasonal trend observed in hog price levels (Figure 3) is not present for LRP basis. This is due to the LRP basis measuring the difference between the CME index price and the regional/national base or average hog price, which seasonally does not tend to vary.

**Table 1. Hog LRP Basis and Futures Basis Summary Statistics, Aug. 2001 to Mar. 2003.**

<i>Hog Price Series</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Standard Deviation</i>	<i>Coefficient of Variation*</i>
	(\$/cwt)	(\$/cwt)	(\$/cwt)	(\$/cwt)	
WCB Base					
LRP Basis	-2.73	-7.89	1.62	1.43	0.52
Futures Basis	-2.83	-12.93	8.42	3.64	1.29
WCB Average					
LRP Basis	0.14	-5.80	4.36	1.61	11.23
Futures Basis	0.04	-10.58	11.33	3.72	86.86
IA/S. Minn. Base					
LRP Basis	-2.91	-12.37	1.31	1.75	0.60
Futures Basis	-3.01	-15.87	8.29	3.93	1.31
IA/S. Minn. Average					
LRP Basis	0.08	-5.62	4.03	1.56	19.38
Futures Basis	-0.02	-10.57	11.86	3.74	186.14
ECB Base					
LRP Basis	-3.13	-8.48	-0.24	1.23	0.39
Futures Basis	-3.23	-12.66	9.22	3.63	1.12
ECB Average					
LRP Basis	-0.67	-6.21	2.10	1.38	2.06
Futures Basis	-0.77	-10.27	11.97	3.72	4.81
National Base					
LRP Basis	-1.48	-3.94	2.52	1.15	0.78
Futures Basis	-1.59	-9.75	10.37	3.59	2.27
National Net					
LRP Basis	1.01	-1.66	5.79	1.33	1.32
Futures Basis	0.91	-6.94	12.94	3.59	3.96

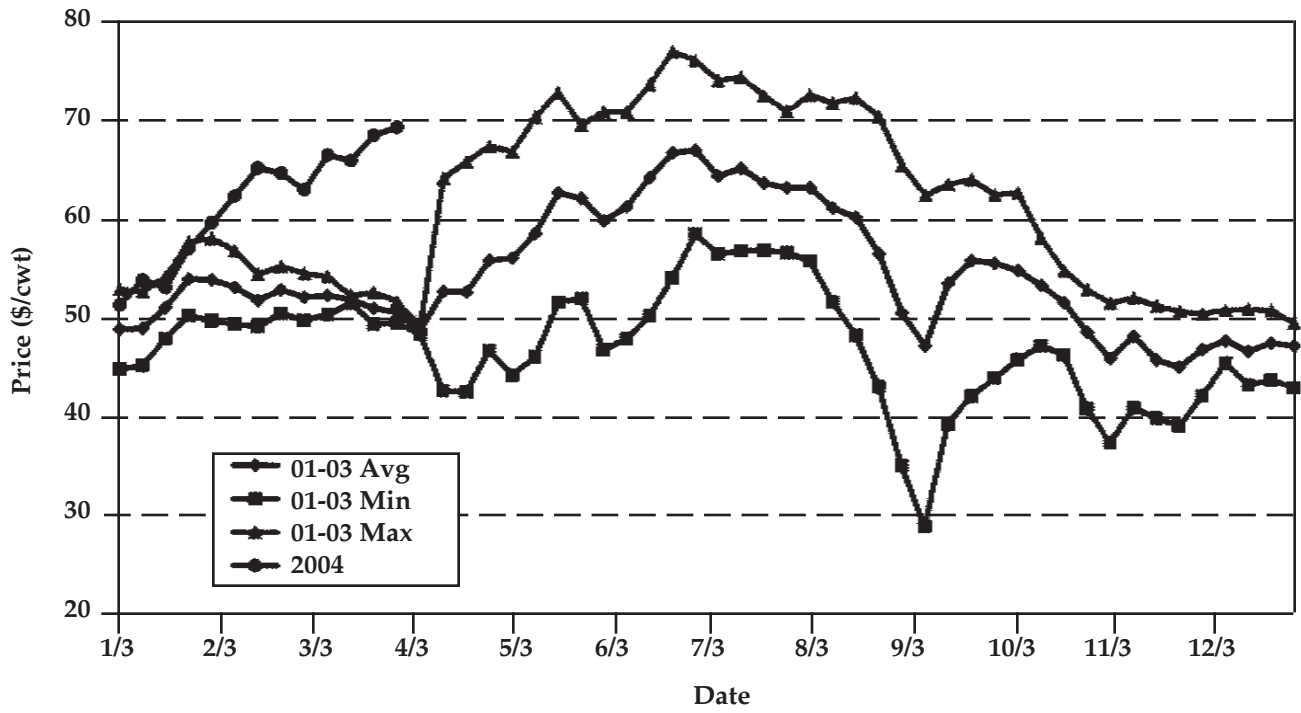
\*Coefficient of variation is standard deviation divided by the absolute value of the mean. Thus, it is a unitless number.

The data used in *Figures 1 through 11* are reported in *Tables 2 through 10*. These tables report data from August 2001 to March 2004 to provide historical background on the respective price and basis series and will provide the necessary LRP basis information to determine the expected selling price when hedging with LRP (discussed in the next section). The hog price series used in this analysis are relatively new as they were created by the Mandatory Price Reporting Act of 1999. Further, the CME cash index calculation changed in August 2001. Thus, in order to use consistent and current price series, historical data prior to August 2001 is not used. As a result, an analysis of the optimal length of historical basis data to use in forecasting current basis cannot be accomplished with this data. Similar analyses with cattle prices and older hog price series suggest that three- to five-year averages forecast

basis better than shorter averages. Therefore, the three-year average LRP basis (where possible) will be used to forecast LRP basis. So, for 2004, the 2001-2003 average LRP basis will be used as a predictor of LRP basis. The 2002-2004 historical LRP basis will be used as a forecast for 2005 LRP basis, and so on. Thus, it is important to routinely track and update LRP basis, as is the case for traditional futures basis.

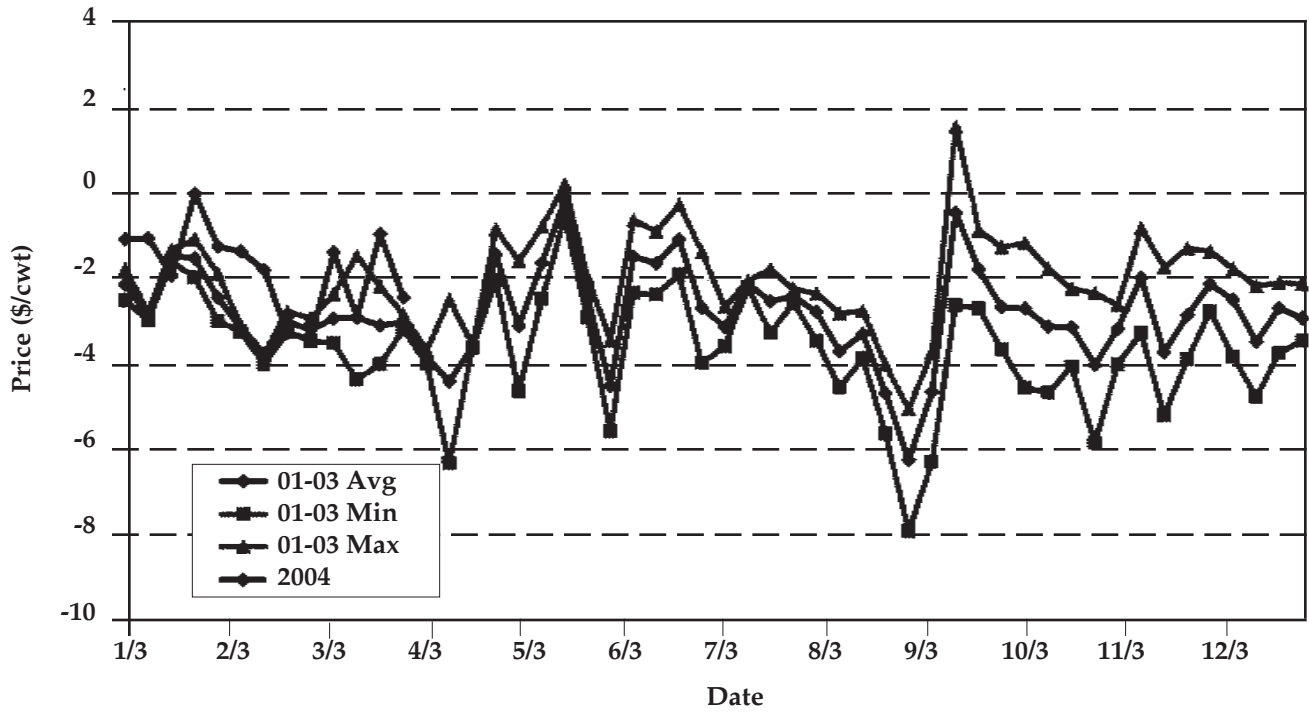
The hog prices used in this analysis represent base and average (net) prices for different geographic markets. These provide a reasonable and representative price and basis for Nebraska and Midwest hog producers hedging with LRP. However, it is still an average price. Individual producers should select the price series that most closely represents their actual selling prices and adjust that price and basis data by the premiums or discounts they receive for their hogs.





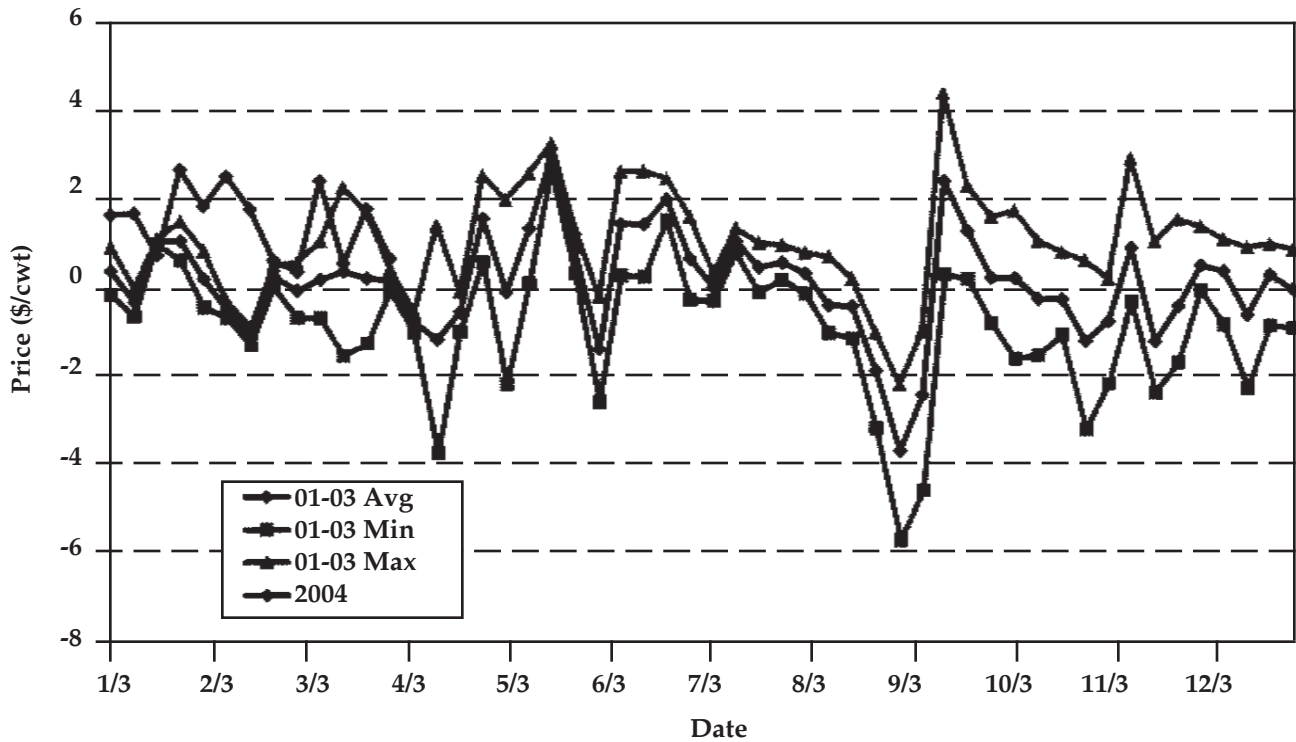
Source: University of Nebraska

Figure 3. Western Corn Belt Weekly Negotiated Average Hog Price, 2001-2004.



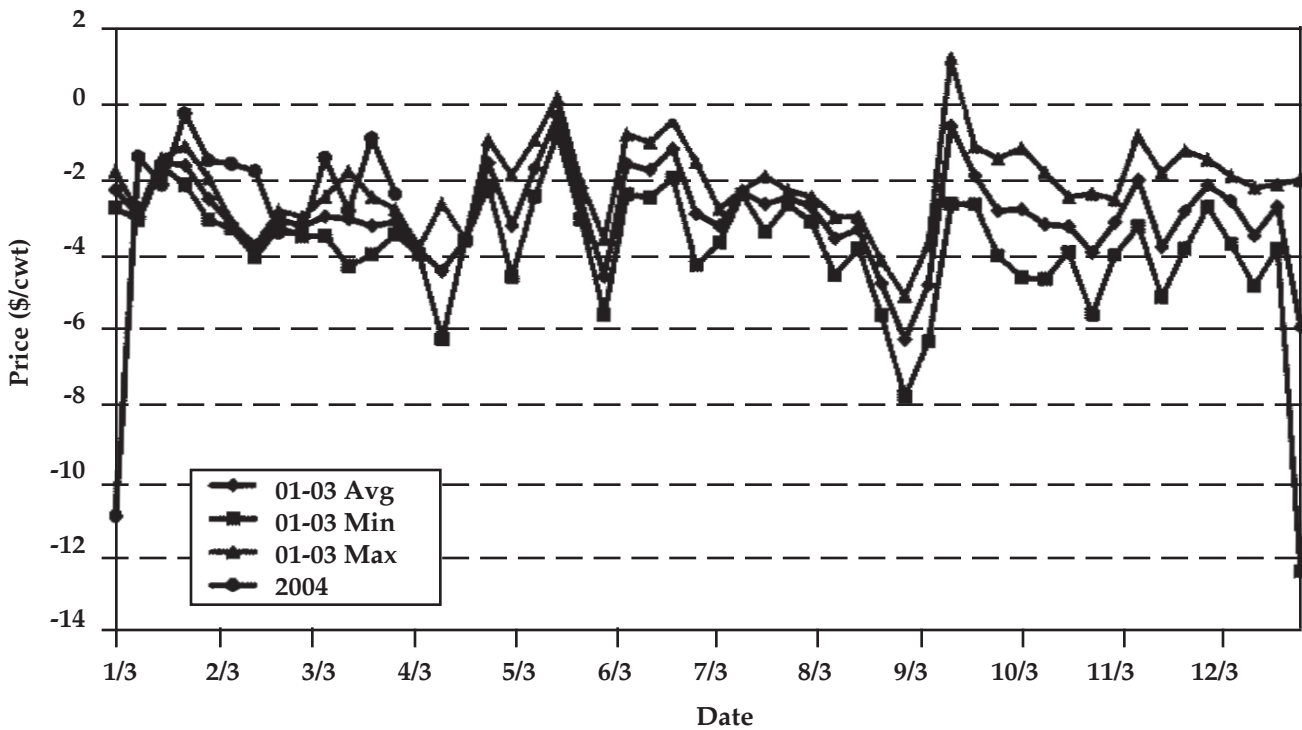
Source: University of Nebraska

Figure 4. Western Corn Belt Weekly Negotiated Base Hog Price CME Cash Index (LRP) Basis, 2001-2004.



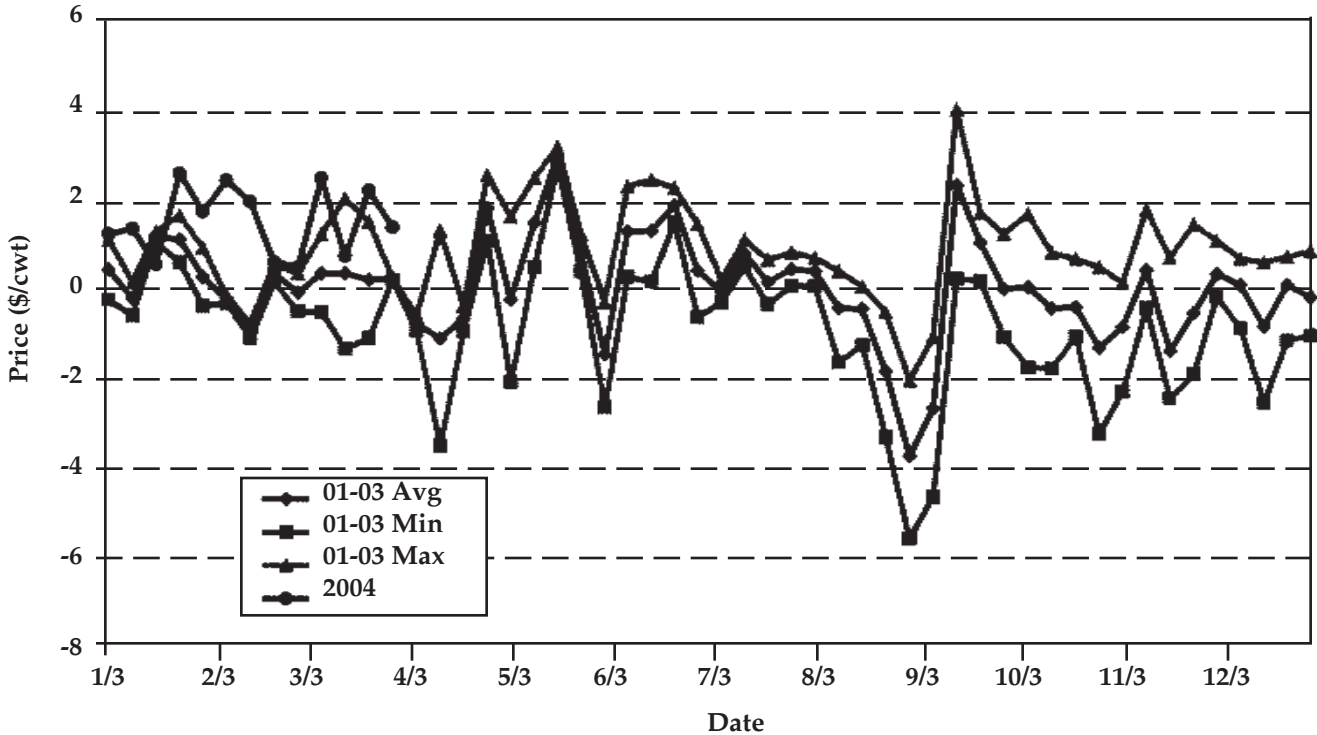
Source: University of Nebraska

Figure 5. Western Corn Belt Weekly Negotiated Average Hog Price CME Cash Index (LRP) Basis, 2001-2004.



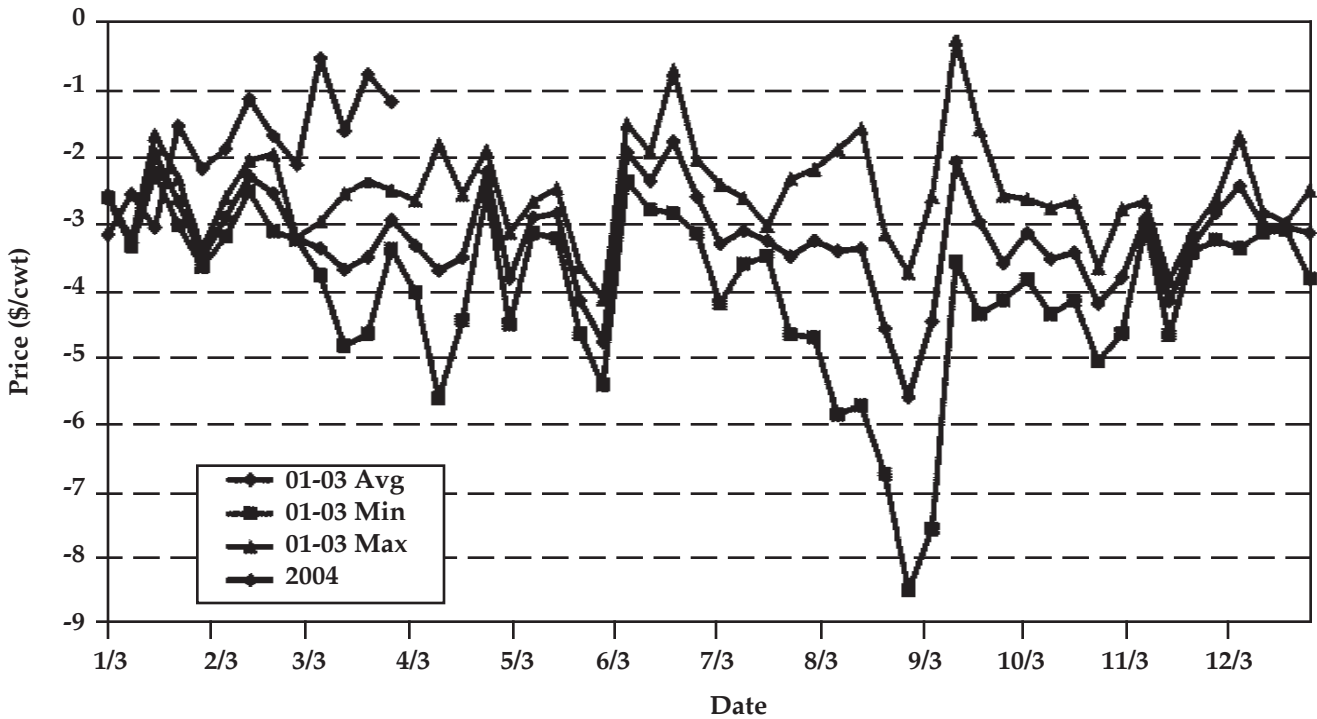
Source: University of Nebraska

Figure 6. Iowa-S. Minn. Weekly Negotiated Base Hog Price CME Cash Index (LRP) Basis, 2001-2004.



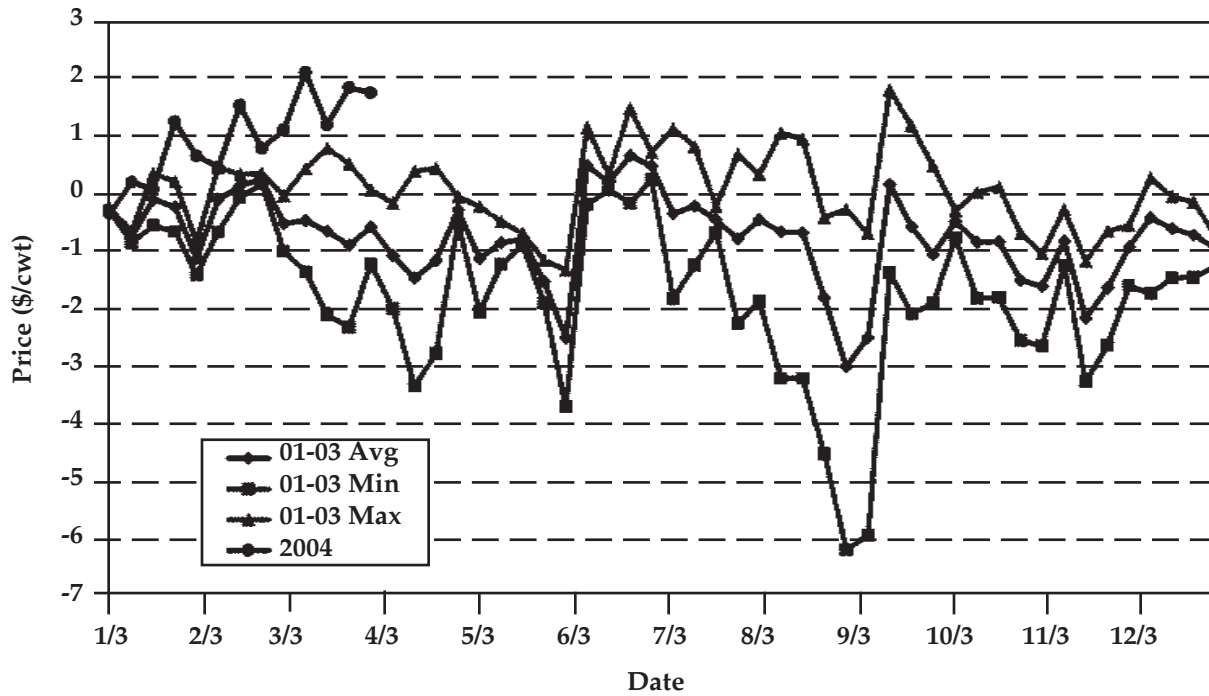
Source: University of Nebraska

Figure 7. Iowa-S. Minn. Weekly Negotiated Average Hog CME Cash Index (LRP) Basis, 2001-2004.



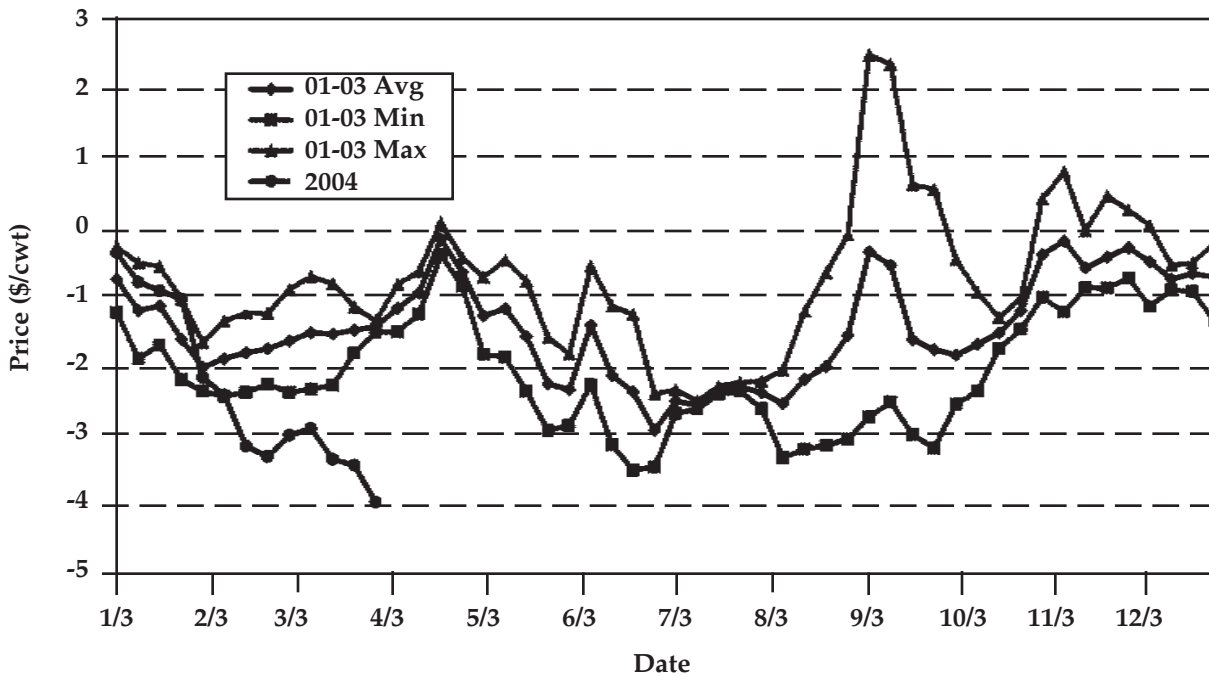
Source: University of Nebraska

Figure 8. Eastern Corn Belt Weekly Negotiated Base Hog Price CME Cash Index (LRP) Basis, 2001-2004.



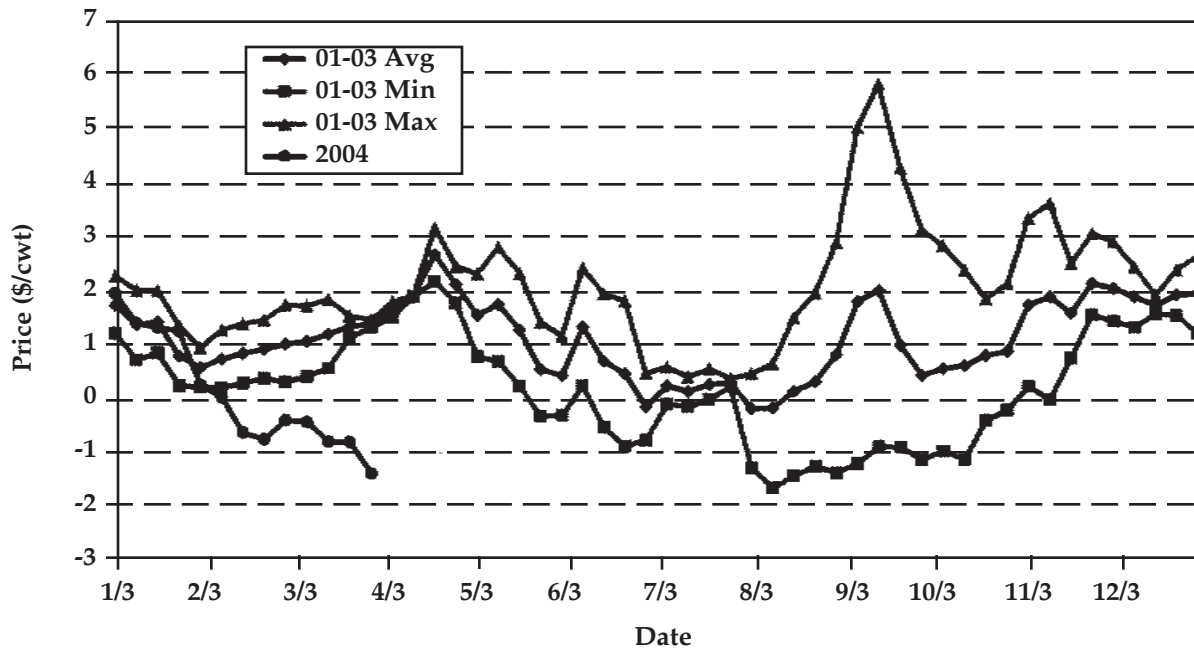
Source: University of Nebraska

Figure 9. Eastern Corn Belt Weekly Negotiated Average Hog Price CME Cash Index (LRP) Basis, 2001-2004.



Source: University of Nebraska

Figure 10. National Weekly Base Hog Price, All Sales, CME Cash Index (LRP) Basis, 2001-2004.



Source: University of Nebraska

Figure 11. National Weekly Net Hog Price, All Sales, CME Cash Index (LRP) Basis, 2001-2004.

**Table 2. CME Lean Hog Cash Index Price, Aug. 2001 to Mar. 2004.**

<i>Date</i>	<i>Week</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2001-03 Average</i>	<i>2001-03 Minimum</i>	<i>2001-03 Maximum</i>
1/3	1		51.48	44.45	49.15	47.97	44.45	51.48
1/10	2		52.18	45.31	51.71	48.74	45.31	52.18
1/17	3		52.59	46.42	51.87	49.50	46.42	52.59
1/24	4		55.76	49.13	53.94	52.44	49.13	55.76
1/31	5		56.81	49.71	57.39	53.26	49.71	56.81
2/7	6		56.77	49.62	59.45	53.19	49.62	56.77
2/14	7		55.33	49.59	63.03	52.46	49.59	55.33
2/21	8		54.87	49.55	63.67	52.21	49.55	54.87
2/28	9		54.83	48.78	62.28	51.80	48.78	54.83
3/7	10		54.56	48.89	63.75	51.73	48.89	54.56
3/14	11		52.69	49.63	65.06	51.16	49.63	52.69
3/21	12		50.28	50.58	66.44	50.43	50.28	50.58
3/28	13		49.21	50.93	68.36	50.07	49.21	50.93
4/4	14		49.05	49.33		49.19	49.05	49.33
4/11	15		46.06	49.58		47.82	46.06	49.58
4/18	16		43.18	49.37		46.28	43.18	49.37
4/25	17		45.80	50.67		48.24	45.80	50.67
5/2	18		46.09	55.02		50.56	46.09	55.02
5/9	19		45.71	56.60		51.15	45.71	56.60
5/16	20		48.68	60.21		54.45	48.68	60.21
5/23	21		51.45	63.31		57.38	51.45	63.31
5/30	22		49.15	61.86		55.50	49.15	61.86
6/6	23		47.39	62.34		54.87	47.39	62.34
6/13	24		49.83	66.12		57.97	49.83	66.12
6/20	25		51.45	67.54		59.49	51.45	67.54
6/27	26		56.78	66.51		61.64	56.78	66.51
7/4	27		56.05	62.85		59.45	56.05	62.85
7/11	28		55.95	62.87		59.41	55.95	62.87
7/18	29		55.79	61.63		58.71	55.79	61.63
7/25	30		56.37	61.01		58.69	56.37	61.01
8/1	31	72.68	55.38	60.38		62.81	55.38	72.68
8/8	32	72.59	52.55	59.42		61.52	52.55	72.59
8/15	33	72.55	49.31	59.89		60.58	49.31	72.55
8/22	34	71.39	46.13	57.66		58.39	46.13	71.39
8/29	35	67.64	40.70	54.09		54.15	40.70	67.64
9/5	36	63.42	33.45	51.71		49.53	33.45	63.42
9/12	37	63.30	34.74	55.23		51.09	34.74	63.30
9/19	38	63.85	39.69	60.27		54.60	39.69	63.85
9/26	39	62.68	42.28	61.19		55.38	42.28	62.68
10/3	40	62.22	44.02	57.73		54.66	44.02	62.22
10/10	41	59.74	46.13	54.98		53.61	46.13	59.74
10/17	42	54.77	46.80	54.06		51.88	46.80	54.77
10/24	43	52.32	44.05	53.06		49.81	44.05	53.06
10/31	44	51.39	39.55	49.19		46.71	39.55	51.39
11/7	45	51.89	40.85	49.21		47.32	40.85	51.89
11/14	46	48.51	42.29	50.27		47.03	42.29	50.27
11/21	47	46.64	40.79	49.22		45.55	40.79	49.22
11/28	48	47.78	42.25	49.17		46.40	42.25	49.17
12/5	49	47.80	44.64	49.83		47.43	44.64	49.83
12/12	50	46.40	45.61	50.13		47.38	45.61	50.13
12/19	51	47.36	44.71	49.92		47.33	44.71	49.92
12/26	52	48.77	44.00	49.31		47.36	44.00	49.31

**Table 3. Western Corn Belt Base Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		49.71	41.95	48.08	45.83	41.95	49.71		-1.78	-2.50	-1.07	-2.14	-2.50	-1.78
1/10	2		49.40	42.34	50.66	45.87	42.34	49.40		-2.77	-2.97	-1.05	-2.87	-2.97	-2.77
1/17	3		50.99	45.10	49.95	48.04	45.10	50.99		-1.60	-1.32	-1.91	-1.46	-1.60	-1.32
1/24	4		54.69	47.17	53.93	50.93	47.17	54.69		-1.07	-1.96	-0.01	-1.51	-1.96	-1.07
1/31	5		54.93	46.73	56.15	50.83	46.73	54.93		-1.88	-2.98	-1.24	-2.43	-2.98	-1.88
2/7	6		53.69	46.38	58.09	50.04	46.38	53.69		-3.08	-3.24	-1.35	-3.16	-3.24	-3.08
2/14	7		51.34	45.85	61.25	48.59	45.85	51.34		-3.99	-3.74	-1.78	-3.87	-3.99	-3.74
2/21	8		52.11	46.31	60.41	49.21	46.31	52.11		-2.76	-3.24	-3.26	-3.00	-3.24	-2.76
2/28	9		51.39	45.86	58.89	48.63	45.86	51.39		-3.44	-2.91	-3.39	-3.18	-3.44	-2.91
3/7	10		51.07	46.56	62.38	48.82	46.56	51.07		-3.49	-2.34	-1.37	-2.91	-3.49	-2.34
3/14	11		48.35	48.18	62.17	48.27	48.18	48.35		-4.34	-1.45	-2.88	-2.89	-4.34	-1.45
3/21	12		46.30	48.42	65.50	47.36	46.30	48.42		-3.99	-2.16	-0.94	-3.07	-3.99	-2.16
3/28	13		46.39	47.76	65.95	47.08	46.39	47.76		-2.82	-3.17	-2.41	-2.99	-3.17	-2.82
4/4	14		45.09	45.69		45.39	45.09	45.69		-3.96	-3.65		-3.80	-3.96	-3.65
4/11	15	64.16	39.77	47.12		50.35	39.77	64.16		-6.29	-2.46		-4.38	-6.29	-2.46
4/18	16	64.11	39.60	45.85		49.85	39.60	64.11		-3.59	-3.52		-3.56	-3.59	-3.52
4/25	17	65.36	43.79	49.86		53.00	43.79	65.36		-2.01	-0.82		-1.41	-2.01	-0.82
5/2	18	65.61	41.49	53.47		53.52	41.49	65.61		-4.60	-1.55		-3.08	-4.60	-1.55
5/9	19	67.85	43.27	55.86		55.66	43.27	67.85		-2.44	-0.74		-1.59	-2.44	-0.74
5/16	20	70.21	48.15	60.47		59.61	48.15	70.21		-0.53	0.25		-0.14	-0.53	0.25
5/23	21	69.21	48.56	61.37		59.72	48.56	69.21		-2.88	-1.94		-2.41	-2.88	-1.94
5/30	22	67.98	43.61	58.45		56.68	43.61	67.98		-5.54	-3.41		-4.48	-5.54	-3.41
6/6	23	67.40	45.09	61.75		58.08	45.09	67.40		-2.30	-0.59		-1.44	-2.30	-0.59
6/13	24	70.75	47.50	65.25		61.17	47.50	70.75		-2.33	-0.87		-1.60	-2.33	-0.87
6/20	25	73.08	51.22	65.68		63.33	51.22	73.08		-0.22	-1.86		-1.04	-1.86	-0.22
6/27	26	73.13	55.45	62.57		63.72	55.45	73.13		-1.33	-3.94		-2.63	-3.94	-1.33
7/4	27	70.88	53.44	59.31		61.21	53.44	70.88		-2.62	-3.55		-3.08	-3.55	-2.62
7/11	28	70.62	53.79	60.88		61.76	53.79	70.62		-2.15	-1.99		-2.07	-2.15	-1.99
7/18	29	69.09	54.06	58.40		60.52	54.06	69.09		-1.73	-3.22		-2.48	-3.22	-1.73
7/25	30	67.62	53.84	58.82		60.09	53.84	67.62		-2.53	-2.19		-2.36	-2.53	-2.19
8/1	31	69.27	53.08	57.86		60.07	53.08	69.27	-3.41	-2.29	-2.51		-2.74	-3.41	-2.29
8/8	32	68.87	48.05	56.66		57.86	48.05	68.87	-3.71	-4.50	-2.76		-3.66	-4.50	-2.76
8/15	33	69.34	45.49	57.19		57.34	45.49	69.34	-3.21	-3.81	-2.70		-3.24	-3.81	-2.70
8/22	34	67.42	40.54	53.30		53.75	40.54	67.42	-3.97	-5.59	-4.35		-4.64	-5.59	-3.97
8/29	35	62.63	32.81	48.39		47.94	32.81	62.63	-5.00	-7.89	-5.70		-6.20	-7.89	-5.00
9/5	36	59.75	27.21	47.82		44.92	27.21	59.75	-3.67	-6.25	-3.89		-4.60	-6.25	-3.67
9/12	37	60.72	36.37	54.97		50.69	36.37	60.72	-2.57	1.62	-0.26		-0.40	-2.57	1.62
9/19	38	61.22	38.88	58.55		52.88	38.88	61.22	-2.64	-0.81	-1.72		-1.72	-2.64	-0.81
9/26	39	59.68	41.08	57.59		52.78	41.08	59.68	-3.00	-1.20	-3.60		-2.60	-3.60	-1.20
10/3	40	59.90	42.92	53.23		52.02	42.92	59.90	-2.32	-1.10	-4.50		-2.64	-4.50	-1.10
10/10	41	55.12	44.42	52.10		50.55	44.42	55.12	-4.61	-1.71	-2.87		-3.06	-4.61	-1.71
10/17	42	50.77	43.74	51.89		48.80	43.74	50.77	-4.00	-3.07	-2.17		-3.08	-4.00	-2.17
10/24	43	50.05	38.26	49.26		45.86	38.26	50.05	-2.27	-5.79	-3.80		-3.95	-5.79	-2.27
10/31	44	48.85	35.60	46.34		43.60	35.60	48.85	-2.54	-3.94	-2.85		-3.11	-3.94	-2.54
11/7	45	48.69	39.08	48.46		45.41	39.08	48.69	-3.20	-1.77	-0.75		-1.91	-3.20	-0.75
11/14	46	43.37	38.12	48.61		43.37	38.12	48.61	-5.14	-4.17	-1.66		-3.66	-5.14	-1.66
11/21	47	42.82	37.47	48.00		42.76	37.47	48.00	-3.82	-3.32	-1.22		-2.79	-3.82	-1.22
11/28	48	45.08	40.06	47.88		44.34	40.06	47.88	-2.70	-2.19	-1.29		-2.06	-2.70	-1.29
12/5	49	44.04	42.85	48.13		45.01	42.85	48.13	-3.76	-1.79	-1.70		-2.42	-3.76	-1.70
12/12	50	42.98	40.90	48.03		43.97	40.90	48.03	-3.42	-4.71	-2.09		-3.41	-4.71	-2.09
12/19	51	45.19	41.04	47.91		44.71	41.04	47.91	-2.16	-3.67	-2.02		-2.62	-3.67	-2.02
12/26	52	46.73	40.61	46.16		44.50	40.61	46.73	-2.04	-3.39	-3.15		-2.86	-3.39	-2.04

**Table 4. Western Corn Belt Average Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis					
		2001	2002	2003	2004	2001-03 Average	2001-03 Minimum	2001-03 Maximum	2001	2002	2003	2004	2001-03 Average	2001-03 Minimum
1/3	1		52.47	44.36	50.88	48.42	44.36	52.47	0.99	-0.09	1.72	0.45	-0.09	0.99
1/10	2		52.24	44.74	53.46	48.49	44.74	52.24	0.07	-0.58	1.75	-0.26	-0.58	0.07
1/17	3		53.76	47.47	52.67	50.61	47.47	53.76	1.17	1.05	0.80	1.11	1.05	1.17
1/24	4		57.32	49.82	56.68	53.57	49.82	57.32	1.56	0.69	2.74	1.12	0.69	1.56
1/31	5		57.71	49.33	59.30	53.52	49.33	57.71	0.90	-0.38	1.91	0.26	-0.38	0.90
2/7	6		56.51	48.99	62.03	52.75	48.99	56.51	-0.26	-0.63	2.58	-0.44	-0.63	-0.26
2/14	7		54.08	48.74	64.86	51.41	48.74	54.08	-1.25	-0.85	1.83	-1.05	-1.25	-0.85
2/21	8		54.93	50.10	64.35	52.52	50.10	54.93	0.06	0.56	0.67	0.31	0.06	0.56
2/28	9		54.19	49.39	62.69	51.79	49.39	54.19	-0.64	0.62	0.41	-0.01	-0.64	0.62
3/7	10		53.92	49.99	66.21	51.95	49.99	53.92	-0.65	1.10	2.46	0.23	-0.65	1.10
3/14	11		51.18	51.95	65.65	51.57	51.18	51.95	-1.51	2.32	0.60	0.41	-1.51	2.32
3/21	12		49.06	52.30	68.25	50.68	49.06	52.30	-1.22	1.72	1.82	0.25	-1.22	1.72
3/28	13		49.17	51.38	69.05	50.28	49.17	51.38	-0.04	0.46	0.69	0.21	-0.04	0.46
4/4	14		48.07	48.81		48.44	48.07	48.81	-0.98	-0.52		-0.75	-0.98	-0.52
4/11	15	63.90	42.32	51.02		52.42	42.32	63.90	-3.74	1.44		-1.15	-3.74	1.44
4/18	16	65.62	42.21	49.31		52.38	42.21	65.62	-0.97	-0.06		-0.52	-0.97	-0.06
4/25	17	67.20	46.40	53.24		55.61	46.40	67.20	0.61	2.56		1.58	0.61	2.56
5/2	18	66.64	43.92	57.03		55.86	43.92	66.64	-2.17	2.01		-0.08	-2.17	2.01
5/9	19	70.12	45.82	59.21		58.38	45.82	70.12	0.11	2.61		1.36	0.11	2.61
5/16	20	72.66	51.35	63.50		62.50	51.35	72.66	2.67	3.29		2.98	2.67	3.29
5/23	21	69.37	51.78	64.65		61.93	51.78	69.37	0.33	1.35		0.84	0.33	1.35
5/30	22	70.76	46.56	61.66		59.66	46.56	70.76	-2.59	-0.19		-1.39	-2.59	-0.19
6/6	23	70.75	47.67	64.96		61.13	47.67	70.75	0.27	2.62		1.45	0.27	2.62
6/13	24	73.48	50.07	68.75		64.10	50.07	73.48	0.24	2.63		1.44	0.24	2.63
6/20	25	76.83	53.92	69.06		66.60	53.92	76.83	2.48	1.52		2.00	1.52	2.48
6/27	26	75.97	58.37	66.22		66.86	58.37	75.97	1.59	-0.29		0.65	-0.29	1.59
7/4	27	73.91	56.36	62.54		64.27	56.36	73.91	0.30	-0.31		0.00	-0.31	0.30
7/11	28	74.28	56.69	64.20		65.05	56.69	74.28	0.74	1.33		1.04	0.74	1.33
7/18	29	72.40	56.78	61.50		63.56	56.78	72.40	0.99	-0.13		0.43	-0.13	0.99
7/25	30	70.83	56.52	61.94		63.10	56.52	70.83	0.15	0.93		0.54	0.15	0.93
8/1	31	72.50	55.68	61.13		63.11	55.68	72.50	-0.18	0.31	0.76	0.30	-0.18	0.76
8/8	32	71.68	51.48	60.09		61.08	51.48	71.68	-0.90	-1.07	0.67	-0.43	-1.07	0.67
8/15	33	72.22	48.12	60.05		60.13	48.12	72.22	-0.33	-1.19	0.16	-0.45	-1.19	0.16
8/22	34	70.33	42.89	56.16		56.46	42.89	70.33	-1.06	-3.24	-1.50	-1.93	-3.24	-1.06
8/29	35	65.40	34.91	50.85		50.39	34.91	65.40	-2.24	-5.80	-3.24	-3.76	-5.80	-2.24
9/5	36	62.38	28.79	49.97		47.05	28.79	62.38	-1.03	-4.66	-1.74	-2.48	-4.66	-1.03
9/12	37	63.54	39.11	57.71		53.45	39.11	63.54	0.24	4.36	2.48	2.36	0.24	4.36
9/19	38	63.99	41.96	61.52		55.82	41.96	63.99	0.14	2.27	1.25	1.22	0.14	2.27
9/26	39	62.48	43.82	60.32		55.54	43.82	62.48	-0.19	1.54	-0.87	0.16	-0.87	1.54
10/3	40	62.68	45.70	56.05		54.81	45.70	62.68	0.46	1.67	-1.68	0.15	-1.68	1.67
10/10	41	58.12	47.13	54.63		53.29	47.13	58.12	-1.61	1.00	-0.35	-0.32	-1.61	1.00
10/17	42	53.63	46.22	54.79		51.54	46.22	54.79	-1.14	-0.59	0.73	-0.33	-1.14	0.73
10/24	43	52.86	40.75	51.95		48.52	40.75	52.86	0.54	-3.30	-1.11	-1.29	-3.30	0.54
10/31	44	51.51	37.28	48.79		45.86	37.28	51.51	0.12	-2.26	-0.40	-0.85	-2.26	0.12
11/7	45	51.48	40.86	52.06		48.13	40.86	52.06	-0.41	0.01	2.85	0.82	-0.41	2.85
11/14	46	46.10	39.82	51.23		45.72	39.82	51.23	-2.41	-2.47	0.95	-1.31	-2.47	0.95
11/21	47	45.45	38.99	50.67		45.04	38.99	50.67	-1.19	-1.80	1.45	-0.51	-1.80	1.45
11/28	48	47.86	42.09	50.46		46.80	42.09	50.46	0.08	-0.16	1.29	0.41	-0.16	1.29
12/5	49	46.86	45.43	50.82		47.70	45.43	50.82	-0.95	0.79	0.99	0.28	-0.95	0.99
12/12	50	45.82	43.22	50.94		46.66	43.22	50.94	-0.58	-2.40	0.81	-0.72	-2.40	0.81
12/19	51	48.01	43.73	50.81		47.51	43.73	50.81	0.65	-0.98	0.88	0.18	-0.98	0.88
12/26	52	49.53	42.96	49.12		47.20	42.96	49.53	0.75	-1.03	-0.19	-0.16	-1.03	0.75



**Table 5. IA/S. Minn. Base Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		49.78	41.77	38.31	45.77	41.77	49.78		-1.71	-2.68	-10.85	-2.19	-2.68	-1.71
1/10	2		49.38	42.29	50.39	45.84	42.29	49.38		-2.80	-3.02	-1.32	-2.91	-3.02	-2.80
1/17	3		51.01	45.07	49.80	48.04	45.07	51.01		-1.58	-1.35	-2.06	-1.46	-1.58	-1.35
1/24	4		54.73	47.08	53.78	50.90	47.08	54.73		-1.03	-2.05	-0.16	-1.54	-2.05	-1.03
1/31	5		54.93	46.72	55.99	50.83	46.72	54.93		-1.88	-2.99	-1.41	-2.44	-2.99	-1.88
2/7	6		53.71	46.38	57.95	50.04	46.38	53.71		-3.06	-3.24	-1.50	-3.15	-3.24	-3.06
2/14	7		51.31	45.90	61.34	48.61	45.90	51.31		-4.02	-3.69	-1.69	-3.85	-4.02	-3.69
2/21	8		52.13	46.34	60.33	49.23	46.34	52.13		-2.74	-3.20	-3.34	-2.97	-3.20	-2.74
2/28	9		51.39	45.86	58.93	48.63	45.86	51.39		-3.44	-2.92	-3.35	-3.18	-3.44	-2.92
3/7	10		51.13	46.50	62.42	48.81	46.50	51.13		-3.44	-2.39	-1.33	-2.91	-3.44	-2.39
3/14	11		48.44	47.92	62.30	48.18	47.92	48.44		-4.25	-1.71	-2.75	-2.98	-4.25	-1.71
3/21	12		46.35	48.20	65.62	47.27	46.35	48.20		-3.93	-2.39	-0.82	-3.16	-3.93	-2.39
3/28	13		46.50	47.53	66.06	47.01	46.50	47.53		-2.72	-3.39	-2.31	-3.06	-3.39	-2.72
4/4	14		45.11	45.60		45.36	45.11	45.60		-3.94	-3.73		-3.83	-3.94	-3.73
4/11	15	62.24	39.87	47.01		49.71	39.87	62.24		-6.19	-2.57		-4.38	-6.19	-2.57
4/18	16	63.96	39.62	45.86		49.81	39.62	63.96		-3.57	-3.51		-3.54	-3.57	-3.51
4/25	17	65.32	43.70	49.82		52.95	43.70	65.32		-2.09	-0.85		-1.47	-2.09	-0.85
5/2	18	65.41	41.56	53.22		53.40	41.56	65.41		-4.53	-1.80		-3.16	-4.53	-1.80
5/9	19	67.75	43.33	55.74		55.61	43.33	67.75		-2.37	-0.86		-1.62	-2.37	-0.86
5/16	20	69.84	47.98	60.48		59.43	47.98	69.84		-0.70	0.27		-0.21	-0.70	0.27
5/23	21	69.01	48.45	61.33		59.60	48.45	69.01		-2.99	-1.97		-2.48	-2.99	-1.97
5/30	22	67.99	43.61	58.35		56.65	43.61	67.99		-5.54	-3.51		-4.52	-5.54	-3.51
6/6	23	67.43	45.08	61.63		58.04	45.08	67.43		-2.32	-0.71		-1.51	-2.32	-0.71
6/13	24	70.72	47.41	65.19		61.11	47.41	70.72		-2.42	-0.93		-1.67	-2.42	-0.93
6/20	25	72.75	51.11	65.66		63.17	51.11	72.75		-0.34	-1.88		-1.11	-1.88	-0.34
6/27	26	72.95	55.33	62.28		63.52	55.33	72.95		-1.46	-4.23		-2.84	-4.23	-1.46
7/4	27	71.05	53.35	59.22		61.20	53.35	71.05		-2.71	-3.63		-3.17	-3.63	-2.71
7/11	28	70.61	53.61	60.65		61.62	53.61	70.61		-2.34	-2.22		-2.28	-2.34	-2.22
7/18	29	69.10	53.95	58.29		60.45	53.95	69.10		-1.84	-3.33		-2.59	-3.33	-1.84
7/25	30	67.65	53.76	58.79		60.06	53.76	67.65		-2.61	-2.23		-2.42	-2.61	-2.23
8/1	31	69.61	52.99	57.82		60.14	52.99	69.61	-3.07	-2.38	-2.56		-2.67	-3.07	-2.38
8/8	32	69.48	48.05	56.47		58.00	48.05	69.48	-3.11	-4.50	-2.94		-3.52	-4.50	-2.94
8/15	33	69.42	45.52	56.96		57.30	45.52	69.42	-3.13	-3.78	-2.93		-3.28	-3.78	-2.93
8/22	34	67.29	40.55	53.18		53.67	40.55	67.29	-4.10	-5.57	-4.48		-4.72	-5.57	-4.10
8/29	35	62.58	32.98	48.25		47.94	32.98	62.58	-5.06	-7.72	-5.84		-6.21	-7.72	-5.06
9/5	36	59.72	27.19	47.36		44.76	27.19	59.72	-3.70	-6.26	-4.35		-4.77	-6.26	-3.70
9/12	37	60.71	36.05	55.02		50.59	36.05	60.71	-2.59	1.31	-0.21		-0.50	-2.59	1.31
9/19	38	61.25	38.64	58.44		52.77	38.64	61.25	-2.60	-1.05	-1.83		-1.83	-2.60	-1.05
9/26	39	59.71	40.91	57.20		52.60	40.91	59.71	-2.97	-1.37	-3.99		-2.78	-3.99	-1.37
10/3	40	59.66	42.93	53.16		51.92	42.93	59.66	-2.55	-1.09	-4.58		-2.74	-4.58	-1.09
10/10	41	55.13	44.39	51.87		50.47	44.39	55.13	-4.61	-1.74	-3.10		-3.15	-4.61	-1.74
10/17	42	50.88	43.52	51.64		48.68	43.52	51.64	-3.89	-3.29	-2.42		-3.20	-3.89	-2.42
10/24	43	50.00	38.49	49.22		45.90	38.49	50.00	-2.32	-5.56	-3.84		-3.91	-5.56	-2.32
10/31	44	48.92	35.57	46.36		43.62	35.57	48.92	-2.47	-3.98	-2.83		-3.09	-3.98	-2.47
11/7	45	48.69	38.96	48.44		45.36	38.96	48.69	-3.20	-1.89	-0.77		-1.95	-3.20	-0.77
11/14	46	43.41	37.89	48.50		43.27	37.89	48.50	-5.10	-4.41	-1.77		-3.76	-5.10	-1.77
11/21	47	42.85	37.39	48.05		42.76	37.39	48.05	-3.80	-3.40	-1.17		-2.79	-3.80	-1.17
11/28	48	45.09	40.05	47.77		44.30	40.05	47.77	-2.69	-2.20	-1.40		-2.09	-2.69	-1.40
12/5	49	44.13	42.61	47.99		44.91	42.61	47.99	-3.68	-2.03	-1.84		-2.52	-3.68	-1.84
12/12	50	43.02	40.79	47.96		43.92	40.79	47.96	-3.38	-4.82	-2.16		-3.45	-4.82	-2.16
12/19	51	45.28	40.89	47.81		44.66	40.89	47.81	-2.08	-3.82	-2.11		-2.67	-3.82	-2.08
12/26	52	46.82	40.62	36.93		41.46	36.93	46.82	-1.95	-3.38	-12.37		-5.90	-12.37	-1.95

**Table 6. IA/S. Minn. Average Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		52.55	44.16	50.34	48.35	44.16	52.55		1.06	-0.28	1.18	0.39	-0.28	1.06
1/10	2		52.29	44.69	53.02	48.49	44.69	52.29		0.11	-0.63	1.31	-0.26	-0.63	0.11
1/17	3		53.83	47.45	52.38	50.64	47.45	53.83		1.24	1.03	0.52	1.13	1.03	1.24
1/24	4		57.36	49.68	56.48	53.52	49.68	57.36		1.60	0.55	2.54	1.08	0.55	1.60
1/31	5		57.69	49.30	59.08	53.50	49.30	57.69		0.88	-0.41	1.69	0.24	-0.41	0.88
2/7	6		56.58	49.26	61.84	52.92	49.26	56.58		-0.19	-0.36	2.39	-0.27	-0.36	-0.19
2/14	7		54.20	48.80	64.94	51.50	48.80	54.20		-1.13	-0.79	1.91	-0.96	-1.13	-0.79
2/21	8		54.99	50.06	64.25	52.53	50.06	54.99		0.12	0.52	0.58	0.32	0.12	0.52
2/28	9		54.30	49.10	62.74	51.70	49.10	54.30		-0.53	0.33	0.46	-0.10	-0.53	0.33
3/7	10		54.02	50.08	66.20	52.05	50.08	54.02		-0.54	1.19	2.44	0.32	-0.54	1.19
3/14	11		51.33	51.63	65.77	51.48	51.33	51.63		-1.36	2.00	0.72	0.32	-1.36	2.00
3/21	12		49.17	52.06	68.61	50.61	49.17	52.06		-1.11	1.48	2.17	0.18	-1.11	1.48
3/28	13		49.38	51.15	69.72	50.27	49.38	51.15		0.17	0.22	1.35	0.20	0.17	0.22
4/4	14		48.10	48.71		48.41	48.10	48.71		-0.95	-0.62		-0.78	-0.95	-0.62
4/11	15	64.89	42.51	50.86		52.76	42.51	64.89		-3.54	1.28		-1.13	-3.54	1.28
4/18	16	67.19	42.22	48.98		52.80	42.22	67.19		-0.96	-0.39		-0.68	-0.96	-0.39
4/25	17	67.81	46.85	53.19		55.95	46.85	67.81		1.05	2.52		1.79	1.05	2.52
5/2	18	66.80	43.99	56.63		55.80	43.99	66.80		-2.10	1.60		-0.25	-2.10	1.60
5/9	19	70.24	46.17	59.07		58.49	46.17	70.24		0.46	2.47		1.47	0.46	2.47
5/16	20	73.12	51.42	63.38		62.64	51.42	73.12		2.74	3.17		2.95	2.74	3.17
5/23	21	69.57	51.83	64.53		61.97	51.83	69.57		0.38	1.22		0.80	0.38	1.22
5/30	22	70.80	46.50	61.56		59.62	46.50	70.80		-2.65	-0.30		-1.47	-2.65	-0.30
6/6	23	70.60	47.65	64.63		60.96	47.65	70.60		0.25	2.29		1.27	0.25	2.29
6/13	24	73.45	49.97	68.55		63.99	49.97	73.45		0.15	2.43		1.29	0.15	2.43
6/20	25	76.00	53.70	69.02		66.24	53.70	76.00		2.25	1.48		1.87	1.48	2.25
6/27	26	75.98	58.23	65.86		66.69	58.23	75.98		1.44	-0.65		0.40	-0.65	1.44
7/4	27	74.07	56.24	62.54		64.28	56.24	74.07		0.19	-0.31		-0.06	-0.31	0.19
7/11	28	74.23	56.43	63.96		64.87	56.43	74.23		0.48	1.09		0.79	0.48	1.09
7/18	29	72.17	56.44	61.28		63.30	56.44	72.17		0.65	-0.35		0.15	-0.35	0.65
7/25	30	70.56	56.42	61.82		62.94	56.42	70.56		0.05	0.81		0.43	0.05	0.81
8/1	31	72.73	55.79	61.06		63.20	55.79	72.73	0.05	0.42	0.68		0.39	0.05	0.68
8/8	32	72.54	50.92	59.80		61.09	50.92	72.54	-0.04	-1.63	0.39		-0.43	-1.63	0.39
8/15	33	72.61	48.05	59.74		60.14	48.05	72.61	0.06	-1.26	-0.15		-0.45	-1.26	0.06
8/22	34	70.86	42.80	55.97		56.54	42.80	70.86	-0.52	-3.33	-1.68		-1.84	-3.33	-0.52
8/29	35	65.59	35.08	50.51		50.40	35.08	65.59	-2.04	-5.62	-3.58		-3.75	-5.62	-2.04
9/5	36	62.35	28.77	49.42		46.85	28.77	62.35	-1.07	-4.68	-2.29		-2.68	-4.68	-1.07
9/12	37	63.52	38.78	57.92		53.40	38.78	63.52	0.22	4.03	2.69		2.31	0.22	4.03
9/19	38	64.02	41.39	61.49		55.64	41.39	64.02	0.17	1.70	1.22		1.03	0.17	1.70
9/26	39	62.51	43.52	60.12		55.38	43.52	62.51	-0.17	1.23	-1.07		0.00	-1.07	1.23
10/3	40	62.42	45.70	55.97		54.70	45.70	62.42	0.21	1.67	-1.76		0.04	-1.76	1.67
10/10	41	57.96	46.94	54.67		53.19	46.94	57.96	-1.77	0.81	-0.31		-0.43	-1.77	0.81
10/17	42	53.71	46.00	54.74		51.48	46.00	54.74	-1.06	-0.81	0.68		-0.39	-1.06	0.68
10/24	43	52.81	40.81	51.90		48.51	40.81	52.81	0.49	-3.24	-1.15		-1.30	-3.24	0.49
10/31	44	51.53	37.25	48.81		45.86	37.25	51.53	0.15	-2.29	-0.38		-0.84	-2.29	0.15
11/7	45	51.47	40.73	51.00		47.73	40.73	51.47	-0.41	-0.12	1.78		0.42	-0.41	1.78
11/14	46	46.15	39.85	50.98		45.66	39.85	50.98	-2.36	-2.45	0.71		-1.37	-2.45	0.71
11/21	47	45.48	38.90	50.67		45.02	38.90	50.67	-1.16	-1.89	1.45		-0.53	-1.89	1.45
11/28	48	47.87	42.09	50.26		46.74	42.09	50.26	0.09	-0.16	1.09		0.34	-0.16	1.09
12/5	49	46.94	45.12	50.52		47.53	45.12	50.52	-0.86	0.48	0.69		0.10	-0.86	0.69
12/12	50	45.86	43.07	50.73		46.55	43.07	50.73	-0.54	-2.54	0.60		-0.83	-2.54	0.60
12/19	51	48.09	43.57	50.62		47.43	43.57	50.62	0.74	-1.14	0.70		0.10	-1.14	0.74
12/26	52	49.62	42.97	48.96		47.18	42.97	49.62	0.85	-1.02	-0.35		-0.18	-1.02	0.85

**Table 7. Eastern Corn Belt Base Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		48.87	41.87	45.99	45.37	41.87	48.87		-2.61	-2.58	-3.17	-2.60	-2.61	-2.58
1/10	2		48.83	42.08	49.15	45.45	42.08	48.83		-3.35	-3.23	-2.56	-3.29	-3.35	-3.23
1/17	3		50.93	44.16	48.80	47.55	44.16	50.93		-1.66	-2.26	-3.07	-1.96	-2.26	-1.66
1/24	4		53.43	46.10	52.40	49.77	46.10	53.43		-2.33	-3.03	-1.54	-2.68	-3.03	-2.33
1/31	5		53.43	46.06	55.21	49.75	46.06	53.43		-3.38	-3.65	-2.18	-3.51	-3.65	-3.38
2/7	6		53.57	47.01	57.57	50.29	47.01	53.57		-3.20	-2.61	-1.88	-2.90	-3.20	-2.61
2/14	7		52.81	47.53	61.90	50.17	47.53	52.81		-2.52	-2.06	-1.13	-2.29	-2.52	-2.06
2/21	8		52.91	46.42	61.99	49.67	46.42	52.91		-1.96	-3.12	-1.68	-2.54	-3.12	-1.96
2/28	9		51.59	45.57	60.16	48.58	45.57	51.59		-3.24	-3.21	-2.12	-3.23	-3.24	-3.21
3/7	10		50.79	45.92	63.23	48.36	45.92	50.79		-3.77	-2.97	-0.52	-3.37	-3.77	-2.97
3/14	11		47.86	47.08	63.44	47.47	47.08	47.86		-4.83	-2.55	-1.61	-3.69	-4.83	-2.55
3/21	12		45.63	48.22	65.68	46.93	45.63	48.22		-4.65	-2.36	-0.76	-3.51	-4.65	-2.36
3/28	13		45.83	48.43	67.19	47.13	45.83	48.43		-3.38	-2.50	-1.18	-2.94	-3.38	-2.50
4/4	14		45.02	46.69		45.86	45.02	46.69		-4.03	-2.64		-3.33	-4.03	-2.64
4/11	15	63.11	40.46	47.77		50.45	40.46	63.11		-5.60	-1.81		-3.70	-5.60	-1.81
4/18	16	63.91	38.73	46.81		49.82	38.73	63.91		-4.45	-2.56		-3.51	-4.45	-2.56
4/25	17	65.00	43.24	48.78		52.34	43.24	65.00		-2.56	-1.90		-2.23	-2.56	-1.90
5/2	18	65.65	41.59	51.89		53.04	41.59	65.65		-4.50	-3.13		-3.82	-4.50	-3.13
5/9	19	66.54	42.57	53.93		54.35	42.57	66.54		-3.14	-2.67		-2.90	-3.14	-2.67
5/16	20	69.19	46.22	56.99		57.47	46.22	69.19		-2.47	-3.22		-2.84	-3.22	-2.47
5/23	21	67.78	46.80	59.66		58.08	46.80	67.78		-4.64	-3.64		-4.14	-4.64	-3.64
5/30	22	66.20	43.75	57.74		55.89	43.75	66.20		-5.40	-4.12		-4.76	-5.40	-4.12
6/6	23	67.22	45.03	60.84		57.70	45.03	67.22		-2.36	-1.50		-1.93	-2.36	-1.50
6/13	24	69.53	47.04	64.18		60.25	47.04	69.53		-2.79	-1.93		-2.36	-2.79	-1.93
6/20	25	71.67	50.75	64.70		62.37	50.75	71.67		-0.70	-2.84		-1.77	-2.84	-0.70
6/27	26	71.88	54.74	63.36		63.33	54.74	71.88		-2.04	-3.15		-2.59	-3.15	-2.04
7/4	27	70.40	51.86	60.44		60.90	51.86	70.40		-4.19	-2.42		-3.31	-4.19	-2.42
7/11	28	71.04	52.34	60.25		61.21	52.34	71.04		-3.61	-2.62		-3.11	-3.61	-2.62
7/18	29	69.35	52.76	58.14		60.08	52.76	69.35		-3.03	-3.49		-3.26	-3.49	-3.03
7/25	30	68.19	51.71	58.69		59.53	51.71	68.19		-4.66	-2.33		-3.49	-4.66	-2.33
8/1	31	70.49	50.67	57.48		59.55	50.67	70.49	-2.19	-4.70	-2.89		-3.26	-4.70	-2.19
8/8	32	70.69	46.71	56.90		58.10	46.71	70.69	-1.89	-5.84	-2.51		-3.42	-5.84	-1.89
8/15	33	70.99	43.60	57.02		57.20	43.60	70.99	-1.57	-5.70	-2.87		-3.38	-5.70	-1.57
8/22	34	68.23	39.39	53.86		53.82	39.39	68.23	-3.16	-6.74	-3.80		-4.57	-6.74	-3.16
8/29	35	63.10	32.23	50.36		48.56	32.23	63.10	-4.54	-8.48	-3.74		-5.58	-8.48	-3.74
9/5	36	60.19	25.89	49.12		45.07	25.89	60.19	-3.23	-7.56	-2.60		-4.46	-7.56	-2.60
9/12	37	60.89	31.17	54.99		49.01	31.17	60.89	-2.41	-3.57	-0.24		-2.08	-3.57	-0.24
9/19	38	60.86	35.34	58.68		51.63	35.34	60.86	-2.99	-4.35	-1.59		-2.98	-4.35	-1.59
9/26	39	58.53	38.22	58.61		51.79	38.22	58.61	-4.14	-4.06	-2.58		-3.60	-4.14	-2.58
10/3	40	59.26	41.39	53.90		51.52	41.39	59.26	-2.96	-2.63	-3.83		-3.14	-3.83	-2.63
10/10	41	55.38	42.66	52.21		50.08	42.66	55.38	-4.35	-3.47	-2.77		-3.53	-4.35	-2.77
10/17	42	50.62	43.32	51.39		48.44	43.32	51.39	-4.15	-3.48	-2.67		-3.43	-4.15	-2.67
10/24	43	48.66	39.00	49.19		45.62	39.00	49.19	-3.66	-5.05	-3.87		-4.19	-5.05	-3.66
10/31	44	48.61	34.91	45.18		42.90	34.91	48.61	-2.78	-4.64	-4.01		-3.81	-4.64	-2.78
11/7	45	48.84	38.18	46.16		44.39	38.18	48.84	-3.05	-2.67	-3.05		-2.92	-3.05	-2.67
11/14	46	43.84	38.45	46.30		42.86	38.45	46.30	-4.67	-3.85	-3.97		-4.16	-4.67	-3.85
11/21	47	43.21	37.35	46.09		42.22	37.35	46.09	-3.44	-3.44	-3.13		-3.33	-3.44	-3.13
11/28	48	45.12	39.62	45.92		43.55	39.62	45.92	-2.66	-2.63	-3.25		-2.85	-3.25	-2.63
12/5	49	44.42	42.94	47.61		44.99	42.94	47.61	-3.38	-1.70	-2.22		-2.44	-3.38	-1.70
12/12	50	43.25	42.80	47.02		44.36	42.80	47.02	-3.14	-2.81	-3.10		-3.02	-3.14	-2.81
12/19	51	44.29	41.60	46.93		44.27	41.60	46.93	-3.07	-3.11	-2.99		-3.06	-3.11	-2.99
12/26	52	46.27	40.88	45.48		44.21	40.88	46.27	-2.51	-3.12	-3.83		-3.15	-3.83	-2.51

**Table 8. Eastern Corn Belt Average Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		51.15	44.16	48.78	47.65	44.16	51.15		-0.33	-0.29	-0.38	-0.31	-0.33	-0.29
1/10	2		51.27	44.63	51.88	47.95	44.63	51.27		-0.90	-0.68	0.17	-0.79	-0.90	-0.68
1/17	3		52.90	45.83	51.92	49.37	45.83	52.90		0.31	-0.58	0.05	-0.13	-0.58	0.31
1/24	4		55.94	48.43	55.17	52.19	48.43	55.94		0.18	-0.69	1.23	-0.26	-0.69	0.18
1/31	5		55.93	48.26	58.02	52.10	48.26	55.93		-0.88	-1.45	0.63	-1.16	-1.45	-0.88
2/7	6		56.07	50.05	59.88	53.06	50.05	56.07		-0.69	0.43	0.43	-0.13	-0.69	0.43
2/14	7		55.25	49.90	64.55	52.57	49.90	55.25		-0.08	0.31	1.52	0.11	-0.08	0.31
2/21	8		55.19	49.69	64.43	52.44	49.69	55.19		0.32	0.15	0.76	0.23	0.15	0.32
2/28	9		53.80	48.72	63.37	51.26	48.72	53.80		-1.03	-0.06	1.09	-0.55	-1.03	-0.06
3/7	10		53.17	49.31	65.85	51.24	49.31	53.17		-1.39	0.42	2.10	-0.49	-1.39	0.42
3/14	11		50.56	50.40	66.24	50.48	50.40	50.56		-2.13	0.77	1.18	-0.68	-2.13	0.77
3/21	12		47.93	51.08	68.28	49.51	47.93	51.08		-2.35	0.50	1.84	-0.93	-2.35	0.50
3/28	13		47.96	50.97	70.10	49.47	47.96	50.97		-1.25	0.04	1.74	-0.60	-1.25	0.04
4/4	14		47.02	49.15		48.09	47.02	49.15		-2.03	-0.18		-1.10	-2.03	-0.18
4/11	15	66.14	42.70	49.95		52.93	42.70	66.14		-3.36	0.37		-1.50	-3.36	0.37
4/18	16	66.70	40.38	49.81		52.29	40.38	66.70		-2.80	0.43		-1.18	-2.80	0.43
4/25	17	67.21	45.26	50.60		54.36	45.26	67.21		-0.54	-0.07		-0.30	-0.54	-0.07
5/2	18	66.74	44.01	54.79		55.18	44.01	66.74		-2.08	-0.24		-1.16	-2.08	-0.24
5/9	19	69.85	44.46	56.10		56.80	44.46	69.85		-1.25	-0.50		-0.87	-1.25	-0.50
5/16	20	72.11	47.98	59.28		59.79	47.98	72.11		-0.70	-0.93		-0.81	-0.93	-0.70
5/23	21	71.52	49.52	62.13		61.06	49.52	71.52		-1.92	-1.18		-1.55	-1.92	-1.18
5/30	22	68.38	45.44	60.52		58.11	45.44	68.38		-3.71	-1.34		-2.52	-3.71	-1.34
6/6	23	70.06	47.20	63.49		60.25	47.20	70.06		-0.20	1.15		0.48	-0.20	1.15
6/13	24	72.41	49.89	66.44		62.91	49.89	72.41		0.06	0.32		0.19	0.06	0.32
6/20	25	74.94	52.94	67.37		65.08	52.94	74.94		1.49	-0.17		0.66	-0.17	1.49
6/27	26	74.32	57.49	66.74		66.18	57.49	74.32		0.71	0.24		0.47	0.24	0.71
7/4	27		54.21	63.99		59.10	54.21	63.99		-1.84	1.13		-0.36	-1.84	1.13
7/11	28	74.06	54.69	63.68		64.14	54.69	74.06		-1.26	0.81		-0.22	-1.26	0.81
7/18	29	72.20	55.11	61.39		62.90	55.11	72.20		-0.69	-0.23		-0.46	-0.69	-0.23
7/25	30	70.89	54.10	61.69		62.22	54.10	70.89		-2.27	0.68		-0.80	-2.27	0.68
8/1	31	73.01	53.48	60.56		62.35	53.48	73.01	0.34	-1.89	0.19		-0.46	-1.89	0.34
8/8	32	72.73	49.33	60.48		60.85	49.33	72.73	0.14	-3.22	1.07		-0.67	-3.22	1.07
8/15	33	73.50	46.09	60.10		59.90	46.09	73.50	0.95	-3.22	0.21		-0.69	-3.22	0.95
8/22	34	70.97	41.59	57.15		56.57	41.59	70.97	-0.42	-4.53	-0.50		-1.82	-4.53	-0.42
8/29	35	65.08	34.50	53.82		51.13	34.50	65.08	-2.56	-6.21	-0.28		-3.01	-6.21	-0.28
9/5	36	62.52	27.49	51.02		47.01	27.49	62.52	-0.90	-5.96	-0.69		-2.52	-5.96	-0.69
9/12	37	63.34	33.36	57.04		51.25	33.36	63.34	0.04	-1.38	1.81		0.16	-1.38	1.81
9/19	38	63.02	37.60	61.46		54.03	37.60	63.02	-0.83	-2.09	1.19		-0.58	-2.09	1.19
9/26	39	60.77	40.50	61.68		54.31	40.50	61.68	-1.91	-1.78	0.49		-1.07	-1.91	0.49
10/3	40	61.44	43.73	57.36		54.18	43.73	61.44	-0.77	-0.29	-0.38		-0.48	-0.77	-0.29
10/10	41	57.91	45.38	55.00		52.77	45.38	57.91	-1.82	-0.75	0.03		-0.85	-1.82	0.03
10/17	42	52.96	45.99	54.17		51.04	45.99	54.17	-1.81	-0.81	0.12		-0.83	-1.81	0.12
10/24	43	51.03	41.50	52.37		48.30	41.50	52.37	-1.29	-2.55	-0.69		-1.51	-2.55	-0.69
10/31	44	50.24	36.90	48.15		45.10	36.90	50.24	-1.15	-2.65	-1.04		-1.61	-2.65	-1.04
11/7	45	50.64	39.91	48.94		46.50	39.91	50.64	-1.25	-0.94	-0.27		-0.82	-1.25	-0.27
11/14	46	45.25	40.24	49.10		44.86	40.24	49.10	-3.26	-2.05	-1.18		-2.16	-3.26	-1.18
11/21	47	44.01	39.17	48.57		43.92	39.17	48.57	-2.63	-1.62	-0.65		-1.63	-2.63	-0.65
11/28	48	46.17	41.62	48.63		45.47	41.62	48.63	-1.61	-0.63	-0.54		-0.93	-1.61	-0.54
12/5	49	46.07	44.86	50.12		47.02	44.86	50.12	-1.74	0.22	0.29		-0.41	-1.74	0.29
12/12	50	44.94	45.56	49.83		46.78	44.94	49.83	-1.46	-0.05	-0.30		-0.60	-1.46	-0.05
12/19	51	45.90	44.17	49.79		46.62	44.17	49.79	-1.46	-0.54	-0.13		-0.71	-1.46	-0.13
12/26	52	47.51	43.27	48.45		46.41	43.27	48.45	-1.26	-0.73	-0.86		-0.95	-1.26	-0.73

**Table 9. National Base Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03	2001-03	2001-03	2001	2002	2003	2004	2001-03	2001-03	2001-03
						Average	Minimum	Maximum					Average	Minimum	Maximum
1/3	1		50.27	44.20	48.81	47.23	44.20	50.27		-1.21	-0.25	-0.34	-0.73	-1.21	-0.25
1/10	2		50.28	44.82	50.94	47.55	44.82	50.28		-1.89	-0.49	-0.77	-1.19	-1.89	-0.49
1/17	3		50.90	45.88	50.97	48.39	45.88	50.90		-1.69	-0.54	-0.90	-1.12	-1.69	-0.54
1/24	4		53.56	48.10	52.92	50.83	48.10	53.56		-2.20	-1.03	-1.02	-1.61	-2.20	-1.03
1/31	5		54.44	48.05	55.23	51.25	48.05	54.44		-2.37	-1.66	-2.16	-2.01	-2.37	-1.66
2/7	6		54.33	48.28	57.02	51.30	48.28	54.33		-2.44	-1.34	-2.42	-1.89	-2.44	-1.34
2/14	7		52.95	48.37	59.87	50.66	48.37	52.95		-2.38	-1.22	-3.16	-1.80	-2.38	-1.22
2/21	8		52.61	48.32	60.36	50.46	48.32	52.61		-2.26	-1.23	-3.31	-1.75	-2.26	-1.23
2/28	9		52.45	47.90	59.28	50.18	47.90	52.45		-2.38	-0.87	-3.00	-1.63	-2.38	-0.87
3/7	10		52.23	48.20	60.84	50.22	48.20	52.23		-2.34	-0.69	-2.91	-1.51	-2.34	-0.69
3/14	11		50.41	48.84	61.70	49.63	48.84	50.41		-2.27	-0.79	-3.35	-1.53	-2.27	-0.79
3/21	12		48.48	49.45	63.00	48.96	48.48	49.45		-1.81	-1.13	-3.44	-1.47	-1.81	-1.13
3/28	13		47.71	49.60	64.39	48.65	47.71	49.60		-1.51	-1.33	-3.97	-1.42	-1.51	-1.33
4/4	14		47.55	48.53		48.04	47.55	48.53		-1.50	-0.80		-1.15	-1.50	-0.80
4/11	15		44.82	48.97		46.90	44.82	48.97		-1.23	-0.61		-0.92	-1.23	-0.61
4/18	16		43.28	49.01		46.15	43.28	49.01		0.10	-0.37		-0.13	-0.37	0.10
4/25	17		45.39	49.85		47.62	45.39	49.85		-0.41	-0.82		-0.62	-0.82	-0.41
5/2	18		45.40	53.20		49.30	45.40	53.20		-0.69	-1.82		-1.26	-1.82	-0.69
5/9	19		45.26	54.73		50.00	45.26	54.73		-0.44	-1.87		-1.16	-1.87	-0.44
5/16	20		47.93	57.84		52.89	47.93	57.84		-0.75	-2.37		-1.56	-2.37	-0.75
5/23	21		49.87	60.37		55.12	49.87	60.37		-1.58	-2.94		-2.26	-2.94	-1.58
5/30	22		47.33	59.00		53.16	47.33	59.00		-1.82	-2.86		-2.34	-2.86	-1.82
6/6	23		46.87	60.07		53.47	46.87	60.07		-0.53	-2.27		-1.40	-2.27	-0.53
6/13	24		48.71	62.97		55.84	48.71	62.97		-1.12	-3.14		-2.13	-3.14	-1.12
6/20	25		50.20	64.03		57.12	50.20	64.03		-1.24	-3.51		-2.38	-3.51	-1.24
6/27	26		54.38	63.05		58.71	54.38	63.05		-2.40	-3.46		-2.93	-3.46	-2.40
7/4	27		53.71	60.17		56.94	53.71	60.17		-2.34	-2.69		-2.51	-2.69	-2.34
7/11	28		53.43	60.25		56.84	53.43	60.25		-2.51	-2.62		-2.57	-2.62	-2.51
7/18	29		53.50	59.21		56.36	53.50	59.21		-2.29	-2.41		-2.35	-2.41	-2.29
7/25	30		54.00	58.77		56.39	54.00	58.77		-2.37	-2.24		-2.30	-2.37	-2.24
8/1	31	70.06	53.04	58.16		60.42	53.04	70.06	-2.62	-2.34	-2.22		-2.39	-2.62	-2.22
8/8	32	69.26	50.29	57.36		58.97	50.29	69.26	-3.33	-2.26	-2.05		-2.55	-3.33	-2.05
8/15	33	69.35	48.11	57.72		58.39	48.11	69.35	-3.20	-1.19	-2.17		-2.19	-3.20	-1.19
8/22	34	68.23	45.50	55.42		56.38	45.50	68.23	-3.16	-0.63	-2.23		-2.01	-3.16	-0.63
8/29	35	64.57	40.63	52.58		52.59	40.63	64.57	-3.06	-0.08	-1.52		-1.55	-3.06	-0.08
9/5	36	60.68	35.97	50.95		49.20	35.97	60.68	-2.74	2.52	-0.76		-0.33	-2.74	2.52
9/12	37	60.77	37.13	53.80		50.57	37.13	60.77	-2.52	2.39	-1.43		-0.52	-2.52	2.39
9/19	38	61.35	40.34	57.27		52.99	40.34	61.35	-2.51	0.65	-3.00		-1.62	-3.00	0.65
9/26	39	60.01	42.86	57.99		53.62	42.86	60.01	-2.67	0.58	-3.20		-1.76	-3.20	0.58
10/3	40	59.70	43.59	55.17		52.82	43.59	59.70	-2.51	-0.44	-2.56		-1.84	-2.56	-0.44
10/10	41	57.37	45.21	53.23		51.93	45.21	57.37	-2.37	-0.92	-1.75		-1.68	-2.37	-0.92
10/17	42	53.02	45.28	52.77		50.36	45.28	53.02	-1.75	-1.52	-1.29		-1.52	-1.75	-1.29
10/24	43	51.21	43.04	51.60		48.62	43.04	51.60	-1.11	-1.01	-1.46		-1.19	-1.46	-1.01
10/31	44	50.39	39.99	48.64		46.34	39.99	50.39	-0.99	0.44	-0.55		-0.37	-0.99	0.44
11/7	45	50.68	41.68	49.08		47.15	41.68	50.68	-1.21	0.83	-0.13		-0.17	-1.21	0.83
11/14	46	47.66	42.28	49.45		46.46	42.28	49.45	-0.85	-0.02	-0.82		-0.56	-0.85	-0.02
11/21	47	45.81	41.27	48.36		45.15	41.27	48.36	-0.83	0.48	-0.86		-0.40	-0.86	0.48
11/28	48	47.07	42.53	48.80		46.13	42.53	48.80	-0.71	0.28	-0.38		-0.27	-0.71	0.28
12/5	49	46.68	44.70	49.50		46.96	44.70	49.50	-1.13	0.06	-0.33		-0.47	-1.13	0.06
12/12	50	45.62	44.73	49.60		46.65	44.73	49.60	-0.78	-0.88	-0.52		-0.73	-0.88	-0.52
12/19	51	46.45	44.22	49.38		46.68	44.22	49.38	-0.91	-0.49	-0.54		-0.65	-0.91	-0.49
12/26	52	47.43	43.79	48.78		46.67	43.79	48.78	-1.34	-0.20	-0.53		-0.69	-1.34	-0.20

**Table 10. National Net Hog Prices and LRP Basis, Aug. 2001 to Mar. 2004.**

Date	Week	Price							LRP Basis						
		2001	2002	2003	2004	2001-03 Average	2001-03 Minimum	2001-03 Maximum	2001	2002	2003	2004	2001-03 Average	2001-03 Minimum	2001-03 Maximum
1/3	1		52.68	46.69	51.08	49.68	46.69	52.68		1.19	2.24	1.92	1.72	1.19	2.24
1/10	2		52.89	47.29	53.10	50.09	47.29	52.89		0.71	1.98	1.39	1.35	0.71	1.98
1/17	3		53.43	48.40	53.17	50.92	48.40	53.43		0.84	1.98	1.30	1.41	0.84	1.98
1/24	4		56.00	50.46	55.19	53.23	50.46	56.00		0.24	1.33	1.25	0.78	0.24	1.33
1/31	5		57.02	50.64	57.65	53.83	50.64	57.02		0.21	0.93	0.25	0.57	0.21	0.93
2/7	6		56.96	50.88	59.47	53.92	50.88	56.96		0.19	1.26	0.03	0.73	0.19	1.26
2/14	7		55.62	50.97	62.40	53.29	50.97	55.62		0.29	1.38	-0.63	0.83	0.29	1.38
2/21	8		55.24	50.99	62.92	53.11	50.99	55.24		0.37	1.44	-0.75	0.90	0.37	1.44
2/28	9		55.13	50.49	61.88	52.81	50.49	55.13		0.30	1.71	-0.40	1.01	0.30	1.71
3/7	10		54.97	50.60	63.33	52.78	50.60	54.97		0.40	1.71	-0.43	1.06	0.40	1.71
3/14	11		53.25	51.45	64.27	52.35	51.45	53.25		0.56	1.82	-0.79	1.19	0.56	1.82
3/21	12		51.40	52.10	65.64	51.75	51.40	52.10		1.12	1.52	-0.80	1.32	1.12	1.52
3/28	13		50.66	52.23	66.98	51.45	50.66	52.23		1.45	1.30	-1.38	1.38	1.30	1.45
4/4	14		50.54	51.10		50.82	50.54	51.10		1.49	1.77		1.63	1.49	1.77
4/11	15		47.93	51.47		49.70	47.93	51.47		1.87	1.89		1.88	1.87	1.89
4/18	16		46.32	51.52		48.92	46.32	51.52		3.13	2.14		2.64	2.14	3.13
4/25	17		48.22	52.43		50.32	48.22	52.43		2.42	1.75		2.09	1.75	2.42
5/2	18		48.38	55.80		52.09	48.38	55.80		2.29	0.78		1.53	0.78	2.29
5/9	19		48.48	57.29		52.88	48.48	57.29		2.77	0.69		1.73	0.69	2.77
5/16	20		50.98	60.44		55.71	50.98	60.44		2.29	0.23		1.26	0.23	2.29
5/23	21		52.85	62.98		57.91	52.85	62.98		1.40	-0.33		0.54	-0.33	1.40
5/30	22		50.31	61.55		55.93	50.31	61.55		1.16	-0.30		0.43	-0.30	1.16
6/6	23		49.79	62.58		56.18	49.79	62.58		2.40	0.23		1.32	0.23	2.40
6/13	24		51.75	65.59		58.67	51.75	65.59		1.92	-0.53		0.70	-0.53	1.92
6/20	25		53.24	66.67		59.95	53.24	66.67		1.79	-0.87		0.46	-0.87	1.79
6/27	26		57.25	65.74		61.49	57.25	65.74		0.46	-0.77		-0.15	-0.77	0.46
7/4	27		56.64	62.75		59.69	56.64	62.75		0.58	-0.10		0.24	-0.10	0.58
7/11	28		56.35	62.72		59.53	56.35	62.72		0.40	-0.15		0.12	-0.15	0.40
7/18	29		56.33	61.61		58.97	56.33	61.61		0.54	-0.02		0.26	-0.02	0.54
7/25	30		56.73	61.23		58.98	56.73	61.23		0.36	0.22		0.29	0.22	0.36
8/1	31	71.39	55.83	60.67		62.63	55.83	71.39	-1.29	0.45	0.29		-0.18	-1.29	0.45
8/8	32	70.93	53.18	59.91		61.34	53.18	70.93	-1.66	0.63	0.49		-0.18	-1.66	0.63
8/15	33	71.13	50.79	60.23		60.71	50.79	71.13	-1.43	1.48	0.34		0.13	-1.43	1.48
8/22	34	70.14	48.06	57.90		58.70	48.06	70.14	-1.25	1.94	0.24		0.31	-1.25	1.94
8/29	35	66.27	43.56	55.03		54.95	43.56	66.27	-1.37	2.86	0.93		0.81	-1.37	2.86
9/5	36	62.21	38.44	53.27		51.30	38.44	62.21	-1.21	4.99	1.55		1.78	-1.21	4.99
9/12	37	62.41	40.53	56.25		53.06	40.53	62.41	-0.88	5.79	1.02		1.97	-0.88	5.79
9/19	38	62.96	43.93	59.87		55.59	43.93	62.96	-0.90	4.24	-0.40		0.98	-0.90	4.24
9/26	39	61.55	45.37	60.50		55.80	45.37	61.55	-1.13	3.09	-0.69		0.42	-1.13	3.09
10/3	40	61.24	46.82	57.55		55.20	46.82	61.24	-0.97	2.80	-0.18		0.55	-0.97	2.80
10/10	41	58.60	48.48	55.58		54.22	48.48	58.60	-1.13	2.35	0.61		0.61	-1.13	2.35
10/17	42	54.36	48.63	55.02		52.67	48.63	55.02	-0.40	1.82	0.97		0.80	-0.40	1.82
10/24	43	52.11	46.15	53.78		50.68	46.15	53.78	-0.22	2.10	0.72		0.87	-0.22	2.10
10/31	44	51.60	42.85	50.81		48.42	42.85	51.60	0.22	3.30	1.62		1.71	0.22	3.30
11/7	45	51.86	44.43	51.24		49.18	44.43	51.86	-0.03	3.58	2.03		1.86	-0.03	3.58
11/14	46	49.26	44.76	51.75		48.59	44.76	51.75	0.75	2.47	1.48		1.56	0.75	2.47
11/21	47	48.17	43.81	50.98		47.65	43.81	50.98	1.53	3.02	1.76		2.10	1.53	3.02
11/28	48	49.19	45.12	50.95		48.42	45.12	50.95	1.41	2.87	1.77		2.02	1.41	2.87
12/5	49	49.11	47.04	51.69		49.28	47.04	51.69	1.31	2.40	1.86		1.86	1.31	2.40
12/12	50	47.95	47.50	51.79		49.08	47.50	51.79	1.55	1.88	1.67		1.70	1.55	1.88
12/19	51	48.88	47.06	51.73		49.22	47.06	51.73	1.53	2.35	1.80		1.89	1.53	2.35
12/26	52	49.96	46.60	51.27		49.28	46.60	51.27	1.19	2.61	1.96		1.92	1.19	2.61

## Hedging With LRP Insurance

LRP can be used to create a minimum sale price for hogs, similar to purchasing put options. However, hedging with LRP does not require trading any futures or option contracts. Further, there are no brokerage commission fees for hedgers to pay to use LRP insurance. LRP provides a substantial amount of flexibility in the number of head insured under one specific coverage endorsement (from 1 to 10,000 head) and permits users to insure up to 32,000 head per crop year (July 1 to June 30). This is in contrast to CME futures and option contracts which are based on 40,000 pounds.

To hedge a future sale of hogs with LRP insurance, an ending date for the LRP policy that corresponds to the time when the hogs are expected to be marketed is selected. Producers then choose a coverage price level from USDA's Risk Management Agency's (RMA) daily Coverage Price, Rate, and Actual Ending Value Table available at [http://www3.rma.usda.gov/apps/livestock\\_reports/lrp\\_select\\_date.cfm](http://www3.rma.usda.gov/apps/livestock_reports/lrp_select_date.cfm). The coverage price is based on some percentage (from 70 to 95 percent) of the Expected Ending Value (EEV), which is an expectation of the CME index at the policy's ending date. To ensure the coverage price, producers pay a premium equivalent to 87 percent of the premium cost stated on RMA's daily table (USDA provides a subsidy of 13 percent of the premium cost).

The LRP insurance will only pay an indemnity in the event of a price decrease such that the AEV is less than the coverage price. Therefore, it establishes a floor price, but allows the producer to benefit from price increases. The price floor, or minimum expected sale price (MESP), is determined by subtracting the premium cost from the coverage price, and adding LRP basis:

$$\text{MESP}_{\text{LRP}} = \text{Coverage Price} - \text{Premium Cost To Producer} + \text{Expected Nebraska LRP basis}$$

The LRP insurance will cover decreases in the AEV (CME index) below the coverage price dollar-for-dollar, thus making up for decreases in the cash market price. However, if the local cash market price decreases more than the AEV (i.e., LRP basis weakens relative to what was expected), the actual selling price (ASP) will be less than the  $\text{MESP}_{\text{LRP}}$ . Conversely, if the local cash market price does not decrease as much as the AEV (i.e., LRP basis strengthens relative to expected), the ASP will be higher than the  $\text{MESP}_{\text{LRP}}$ .

An example can demonstrate the process of hedging with LRP. Suppose that on February 20, 2004, a Nebraska hog producer purchased a Specific Coverage Endorsement (LRP insurance policy) for hogs she planned to market during the third week of May. On February 20, an LRP policy was available with an ending date of May 21, 2004, and a coverage price of \$55.71/cwt (91.9 percent of the EEV of \$60.61/cwt). The producer premium for this policy was \$1.52/cwt (87 percent of \$1.752/cwt, the total premium). The 2001-2003 average WCB base hog LRP basis (which the producer determined is closest to her typical selling prices) for the week ending May 23 (week 21 of the year) from *Table 3* can be used as an estimate of the hog producer's LRP basis for May 21, 2004. *Table 3* reports the historical average WCB base hog LRP basis for the 21st week of the year is -\$2.41/cwt. The  $\text{MESP}_{\text{LRP}}$  would be calculated as:

$$\text{MESP}_{\text{LRP}} = \text{Coverage Price} - \text{Premium Cost To Producer} + \text{Expected Nebraska LRP basis}$$

$$\text{MESP}_{\text{LRP}} = \$55.71/\text{cwt} - \$1.52/\text{cwt} + (-\$2.41/\text{cwt})$$

$$\text{MESP}_{\text{LRP}} = \$51.78/\text{cwt}$$

The LRP insurance policy provided protection in the event prices decreased and were lower than the coverage price on May 21, 2004. For example, assume that the AEV (CME index) on May 21, 2004, was \$52.00/cwt and the LRP basis was -\$2.41/cwt (as forecasted above). This indicates that the WCB base hog price was \$49.59/cwt (\$52.00/cwt + -\$2.41/cwt). Further, an LRP indemnity of \$3.71/cwt would be paid (coverage price of \$55.71 less AEV of \$52.00/cwt) because the AEV was less than the coverage price. The ASP for the hogs would be determined by adding the LRP indemnity to the cash selling price and deducting the premium:

$$\text{ASP}_{\text{LRP}} = \text{Cash Selling Price} + \text{LRP Indemnity} - \text{Premium Cost To Producer}$$

$$\text{ASP}_{\text{LRP}} = \$49.59/\text{cwt} + \$3.71/\text{cwt} - \$1.52/\text{cwt}$$

$$\text{ASP}_{\text{LRP}} = \$51.89/\text{cwt}$$

In this case when the CME index price decreased below the coverage price, the  $\text{ASP}_{\text{LRP}}$  equaled the  $\text{MESP}_{\text{LRP}}$ . Without LRP insurance, the ASP would have been the WCB base hog price of \$49.59/cwt. An even larger drop in price would have resulted in an ASP lower than the  $\text{MESP}_{\text{LRP}}$  without the LRP insurance policy.

The LRP insurance policy would have also allowed the producer to benefit from higher prices on May 21, 2004. For example, suppose instead that the AEV (CME index) on May 21, 2004 was \$60.00/cwt and the WCB base hog LRP basis was -\$2.41/cwt (as forecasted above). The WCB base hog price would be \$57.59/cwt in this case. No LRP indemnity would be paid because the AEV exceeded the coverage price of \$55.71/cwt. The ASP for the hogs would be determined as before:

$$\begin{aligned} \text{ASP}_{\text{LRP}} &= \text{Cash Selling Price} + \text{LRP} \\ &\quad \text{Indemnity} - \text{Premium Cost To Producer} \\ \text{ASP}_{\text{LRP}} &= \$57.59/\text{cwt} + \$0.00/\text{cwt} - \\ &\quad \$1.52/\text{cwt} \\ \text{ASP}_{\text{LRP}} &= \$56.07/\text{cwt} \end{aligned}$$

In this case when the CME index price increased above the coverage price, the  $\text{ASP}_{\text{LRP}}$  exceeded the  $\text{MESP}_{\text{LRP}}$ . The producer benefited from the price increase. Without LRP insurance, the ASP would have been the WCB base hog price of \$57.59/cwt. The difference between the  $\text{ASP}_{\text{LRP}}$  and the sale price without LRP was due to the cost of the LRP insurance (\$1.52/cwt). While in this case the producer would have been better off to not have hedged with LRP, the policy did provide protection in case of a decline in prices (the producer essentially gave up \$1.52/cwt of the increase as payment for protection from price decreases).

The LRP basis can also affect whether the  $\text{ASP}_{\text{LRP}}$  realized meets the  $\text{MESP}_{\text{LRP}}$  (in the event of a price decrease). Suppose, as before, the AEV (CME index) on May 21, 2004 was \$52.00/cwt but that the WCB base hog LRP basis was -\$3.41/cwt (\$1.00/cwt weaker than forecasted). This indicates that the WCB base hog price was \$48.59/cwt. An LRP indemnity of \$3.71/cwt would be paid as before because the AEV (\$52.00/cwt) was less than the coverage price (\$55.71/cwt). The ASP for the hogs would be:

$$\begin{aligned} \text{ASP}_{\text{LRP}} &= \text{Cash Selling Price} + \text{LRP} \\ &\quad \text{Indemnity} - \text{Premium Cost To Producer} \\ \text{ASP}_{\text{LRP}} &= \$48.59/\text{cwt} + \$3.71/\text{cwt} - \\ &\quad \$1.52/\text{cwt} \\ \text{ASP}_{\text{LRP}} &= \$50.78/\text{cwt} \end{aligned}$$

Here, the  $\text{ASP}_{\text{LRP}}$  was \$1.00/cwt lower than the  $\text{MESP}_{\text{LRP}}$ . This difference was due to the weaker than expected LRP basis. In both this case and the first case, the price level decline was the same amount, so the difference between what the producer expected to receive versus what was actually received was not effected by the price decrease,

but instead the unanticipated change in the relationship between the CME index price and the WCB base hog price (LRP basis).

A stronger than forecasted LRP basis would result in an  $\text{ASP}_{\text{LRP}}$  higher than the  $\text{MESP}_{\text{LRP}}$ . For example, assume again that the AEV on May 21, 2004 was \$52.00/cwt but that the WCB base hog LRP basis was -\$0.41/cwt (\$2.00/cwt stronger than forecasted). This indicates that the WCB base hog price was \$51.59/cwt. An LRP indemnity of \$3.71/cwt would be paid as before because the AEV was less than the coverage price. The ASP for the hogs would be:

$$\begin{aligned} \text{ASP}_{\text{LRP}} &= \text{Cash Selling Price} + \text{LRP} \\ &\quad \text{Indemnity} - \text{Premium Cost To Producer} \\ \text{ASP}_{\text{LRP}} &= \$51.59/\text{cwt} + \$3.71/\text{cwt} - \\ &\quad \$1.52/\text{cwt} \\ \text{ASP}_{\text{LRP}} &= \$53.78/\text{cwt} \end{aligned}$$

Here, the  $\text{ASP}_{\text{LRP}}$  was \$2.00/cwt higher than the  $\text{MESP}_{\text{LRP}}$ . This difference was due to the stronger than expected LRP basis. In both cases, the price level decline was the same amount, so the difference between what the producer expected to receive versus what was actually received was not effected by the price decrease, but instead the unanticipated change in the relationship between the CME index price and the WCB base hog price.

The worksheet on the next page can help evaluate a hedge for hogs using LRP.

## Conclusion

LRP offers producers the opportunity to create a minimum sale price for hogs, similar to using put options. But, just as hog producers hedging with futures and options remain exposed to futures basis risk, producers using LRP insurance are not protected from changes in LRP basis. LRP basis was defined as the difference between the producer's actual selling price and the CME index price (two-day weighted average national negotiated and swine/pork market formula price). Analysis of historical swine LRP basis and futures basis indicates that LRP is relatively less variable, and therefore potentially easier to predict. Thus, swine LRP insurance offers producers the advantage of less basis risk when compared to futures basis risk associated with futures and options hedges. Historical average LRP basis was reported in tables and can be directly used in determining expected minimum sale prices established by purchasing LRP insurance.



# Swine LRP Worksheet

## When You Purchase/Consider Purchasing LRP

	Example	Your Case
<b>1. Select End Date</b> <ul style="list-style-type: none"> <li>When You Plan To Sell Hogs</li> <li>See RMA's Daily Table*</li> </ul>	<u>May 21, 2004</u>	<u>                    </u>
<b>2. Select Coverage Price</b> <ul style="list-style-type: none"> <li>From RMA's Daily Table*</li> <li>The Higher The Coverage Price, The Higher The Premium</li> </ul>	<u>\$55.71/cwt</u>	<u>                    </u>
<b>3. Compute Premium You Pay</b> <ul style="list-style-type: none"> <li>87 Percent Of Total Premium On RMA's Daily Table*</li> </ul>	<u>\$1.52/cwt</u>	<u>                    </u>
<b>4. Forecast LRP Basis For End Date</b> <ul style="list-style-type: none"> <li>See Tables 3-10 For Hog Price Series That Is Closest To Your Selling Price</li> <li>Record Average For Week Corresponding To End Date In #1</li> </ul>	<u>-\$2.41/cwt</u>	<u>                    </u>
<b>5. Calculate Minimum Expected Selling Price</b> <ul style="list-style-type: none"> <li>Line 2 – Line 3 + Line 4</li> </ul>	<u>\$51.78/cwt</u>	<u>                    </u>

\*[http://www3.rma.usda.gov/apps/livestock\\_reports/lrp\\_select\\_date.cfm](http://www3.rma.usda.gov/apps/livestock_reports/lrp_select_date.cfm)

## When LRP Ending Date Arrives and You've Sold Hogs

	Example	Your Case
<b>6. Price Received In Cash Hog Market</b>	<u>\$48.59/cwt</u>	<u>                    </u>
<b>7. Determine AEV</b> <ul style="list-style-type: none"> <li>From RMA's Daily Table</li> <li>CME Lean Hog Cash Index</li> </ul>	<u>\$52.00/cwt</u>	<u>                    </u>
<b>8. Compute Indemnity</b> <ul style="list-style-type: none"> <li>If Line 7 Is Less Than Line 2, Subtract Line 7 From Line 2 And Enter On Line 8</li> <li>If Line 7 Is Greater Than Line 2, Enter \$0/cwt On Line 8</li> </ul>	<u>\$3.71/cwt</u>	<u>                    </u>
<b>9. Actual Sale Price</b> <ul style="list-style-type: none"> <li>Line 6 + Line 8 – Line 3</li> </ul>	<u>\$50.78/cwt</u>	<u>                    </u>