



**FACT SHEET**  
**Maryland Livestock Basis and Price Information**

Fact Sheet 574

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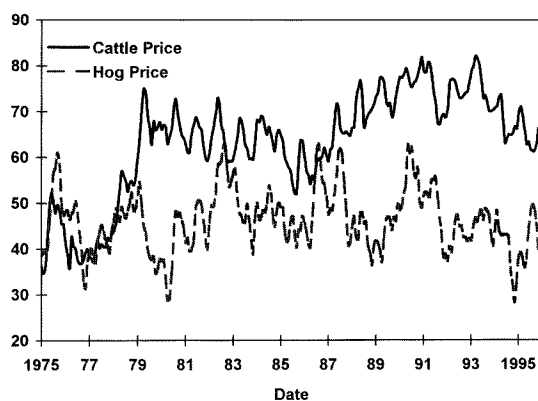
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Cattle and hog prices have demonstrated significant volatility in the past 20 years. After rising sharply in the late 1970s, U.S. cattle prices trended down for the first half of the 1980s while hog prices moved higher (see figure 1). By 1986, cattle prices recovered while hog prices slumped. In the past 3 years, cattle and hog prices have declined as inventories have increased sharply.

Because of the uncertainty about future hog and cattle prices, it is difficult for producers to make production and marketing decisions. However, the use of futures prices and regional basis information can significantly improve the price forecasting ability of Maryland hog and cattle producers. Regional livestock basis information is useful for cattle and hog producers, packers, and other buyers of livestock in Maryland. The basis, which is defined as a local cash price minus the current futures price, is an excellent indicator of

Figure 1. U.S. Cattle and Hog Prices: 1975-1995



demand by local buyers and available regional supply. This fact sheet provides historical seasonal basis and price averages for Maryland and regional livestock markets.

### Methodology and Interpretation

Weekly cattle and hog prices were obtained from the Maryland Grain and Livestock Report published by the Maryland Department of Agriculture. Three different hog markets and two different cattle markets were reported for the marketing years 1990-91, 1991-92, 1992-93, 1993-94, and 1994-95. The three Maryland hog markets are Gwaltney, the Eastern Shore region, and Hagerstown. The two cattle markets are Westminster, MD, and Lancaster, PA. Once a week, usually on Wednesday, a live weight price is collected from these five markets. On the same day, the Chicago live hog and live cattle nearby futures contract price is used to construct a regional basis for each location.

For each of the 5 years of data, the weekly basis is averaged within a month to get a monthly estimate. Averaging the monthly basis estimates for each of the 5 years gives the final basis estimates. These monthly average basis estimates, along with their respective standard deviations, are presented in tables 1 and 2.

The basis values presented in these tables reflect, on average, what the local basis is at different times during the year. However, in any given year, the actual basis is likely to be higher or lower than the average. One way this uncertainty can be accounted for is through the use of the standard deviation. The standard deviation represents the amount of variation in the average basis. Although the average basis is the best guess of what the actual basis will be, one can use the standard deviation to develop an optimistic and pessimistic basis forecast. The optimistic basis is equal to the average basis plus the standard deviation; the pessimistic basis can

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be computed by taking the average basis less its standard deviation. If the basis is normally distributed, two-thirds of the time the actual basis will fall somewhere between the optimistic and pessimistic basis. Thus, for forecasting, one can use the average basis as the best guess and the optimistic-pessimistic basis as a likely range within which the true basis will fall. Figures 2-6 represent the seasonal average basis along with the optimistic and pessimistic basis range for the three hog markets and two cattle markets.

## Seasonal and Locational Trends

Close evaluation of the data in the accompanying tables and figures reveals several trends, both seasonal and locational. In general, the trends are a reflection of the interaction of supply and demand. Individuals who recognize and follow these trends are more likely to capitalize on marketing practices. Specific interpretation depends on whether the individual is a buyer or a seller.

Examples of seasonal trends are consistently improved basis for hogs in all three markets during August and September and consistently improved basis for cattle in both markets during May. When these improved

basis figures are coupled with relatively strong seasonal prices during the same months, it is obvious that producers who can market their animals during these periods will, on average, have a price advantage. The caveat, "on average," is included in the statement because prices in any given year are subject to unpredictable market factors (e.g., a major national drought or an international conflict). Producers also need to keep in mind that the products—hogs or cattle in these examples—need to be ready for market at the right time to achieve the highest profit. By selling hogs in September or cattle in May that are not ready for market a producer may top the market but realize a production loss. Profit maximization requires good management to ensure market and production coordination.

Analyses of the data also reflect locational advantages for Hagerstown and Lancaster for hogs and cattle, respectively. Stronger basis prices are reported consistently at both locations compared with the other markets listed. However, this fact may be deceiving to profit-maximizing buyers and sellers, since transportation costs must be accounted for in computing net figures. When shipping live animals, the risk of injury should also be included in the decision process.

**Forecasts of Westminster, MD, Live Cattle Prices Using Futures Prices for December 27, 1995.**

<i>Month</i>	<i>Futures Price (\$/Cwt.)</i>	<i>Average Basis (\$/Cwt.)</i>	<i>Price Forecast<sup>2</sup> (\$/Cwt.)</i>	<i>Optimistic Price (\$/Cwt.)</i>	<i>Pessimistic Price (\$/Cwt.)</i>
Jan. 96	66.37	-2.311 (2.48) <sup>1</sup>	64.06	66.54	61.58
Feb. 96	66.37	-2.82 (0.75)	63.55	64.30	62.80
Mar. 96	66.65	-4.04 (1.64)	62.61	64.25	60.97
Apr. 96	66.65	-3.85 (2.20)	62.80	60.60	65.00
May 96	62.57	1.06 (1.64)	63.63	65.27	61.99
Jun. 96	62.57	0.03 (1.47)	62.60	64.07	61.13
Jul 96	61.57	-1.81 (3.66)	59.76	63.42	56.10
Aug. 96	61.57	-2.25 (3.38)	59.32	62.70	55.94
Sep. 96	63.25	-4.89 (2.33)	58.36	60.69	56.03
Oct. 96	63.25	-3.99 (2.40)	59.26	61.66	56.86
Nov. 96	63.87	-2.32 (2.77)	61.55	64.32	58.78
Dec. 96	63.87	-2.47 (1.60)	61.40	63.00	59.80

<sup>1</sup> Standard deviation given in parentheses.

<sup>2</sup> The Price Forecast is the futures price plus average basis; Optimistic Price is the Price Forecast plus the basis standard deviation; and Pessimistic Price is the Price Forecast less the basis standard deviation.

The preceding examples are not offered to encourage buying or selling at a specific market or time. They are offered to illustrate some of the practical applications that can result from collecting, understanding, and using basis and price information.

## Using the Tables for Forecasting

Basis estimates, combined with information about futures prices, can be useful in predicting future local cash prices. On a

given day, futures prices are readily available for select futures contract months well over a year in advance of the actual date of the contract. These prices represent the interactions of many buyers and sellers, all trying to profit from their own information about supply and demand. As a result of these profit motives, futures prices represent the best estimate of what the future will likely hold for prices. Thus, futures prices for different contract months can be viewed as price forecasts for different points in time.

### Price Information

Tables 3 and 4 give the seasonal average hog and cattle prices, respectively, for the various markets

**Table 1. Maryland Hog Basis Averages: 1990-1995**

	<i>Eastern Shore</i>	<i>Hagerstown</i> \$/Cwt.	<i>Gwaltney</i>
Jan.	-5.24 (1.64) <sup>1</sup>	-3.14 (0.83)	-4.96 (1.62)
Feb.	-3.24 (1.06)	-0.74 (0.95)	-3.14 (0.90)
Mar.	-4.74 (1.10)	-2.48 (1.00)	-4.53 (1.01)
Apr.	-6.46 (1.41)	-4.25 (1.07)	-6.17 (1.37)
May	-7.36 (1.98)	-4.52 (0.81)	-7.56 (2.42)
Jun.	-5.05 (2.22)	-1.61 (1.12)	-5.13 (2.74)
Jul.	-4.67 (2.74)	-1.33 (1.57)	-3.74 (2.30)
Aug.	-2.72 (2.50)	0.45 (0.63)	-2.61 (2.17)
Sep.	-2.25 (2.27)	0.31 (1.32)	-1.82 (2.58)
Oct.	-4.57 (4.49)	-1.35 (1.53)	-4.52 (4.75)
Nov.	-6.10 (0.80)	-3.83 (1.58)	-6.43 (1.49)
Dec.	-4.90 (1.26)	-2.37 (0.64)	-4.93 (1.55)

<sup>1</sup>Standard deviation given in parentheses.

**Table 3. Maryland Hog Monthly Price Average: 1990-1995**

	<i>Eastern Shore</i> \$/Cwt.	<i>Hagerstown</i> \$/Cwt.	<i>Gwaltney</i> \$/Cwt.
Jan.	39.14	41.34	39.42
Feb.	41.95	44.45	42.05
Mar.	40.97	43.33	41.32
Apr.	40.18	42.49	40.47
May	42.73	45.58	42.47
Jun.	44.55	48.08	44.48
Jul.	44.20	47.54	44.98
Aug.	44.11	47.11	44.26
Sep.	42.60	45.02	42.88
Oct.	41.57	43.91	41.50
Nov.	37.30	39.53	36.97
Dec.	37.72	40.35	37.66
5-Year Average	41.42	44.06	41.54

**Table 2. Maryland and Pennsylvania Cattle Basis: 1990-1995.<sup>1</sup>**

	<i>Westminster, MD</i> \$/Cwt.	<i>Lancaster, PA</i> \$/Cwt.
Jan.	-2.31 (2.48) <sup>2</sup>	-0.42 (2.72)
Feb.	-2.82 (0.75)	-1.82 (1.58)
Mar.	-4.04 (1.64)	-2.75 (1.05)
Apr.	-3.85 (2.20)	-2.18 (0.98)
May	1.06 (1.64)	1.87 (1.40)
Jun.	0.03 (1.47)	1.11 (1.34)
Jul.	-1.81 (3.66)	-0.37 (1.49)
Aug.	-2.25 (3.38)	-0.82 (1.65)
Sep.	-4.89 (2.33)	-2.98 (1.15)
Oct.	-3.99 (2.40)	-2.31 (1.69)
Nov.	-2.32 (2.77)	-0.83 (3.17)
Dec.	-2.47 (1.60)	0.02 (2.11)

<sup>1</sup>For choice grade cattle.

<sup>2</sup>Standard deviation given in parentheses.

**Table 4. Maryland and Pennsylvania Monthly Price Average: 1990-1995.<sup>1</sup>**

	<i>Westminster, MD</i> \$/Cwt.	<i>Lancaster, PA</i> \$/Cwt.
Jan.	73.41	75.21
Feb.	74.24	75.35
Mar.	73.61	74.79
Apr.	72.10	73.84
May	71.28	72.06
Jun.	69.81	70.84
Jul.	67.98	69.44
Aug.	67.87	69.49
Sep.	69.06	70.99
Oct.	69.52	71.34
Nov.	71.49	73.16
Dec.	71.54	73.95
5-Year Average	70.99	72.54

<sup>1</sup>For choice grade cattle.

Because futures prices reflect expected price conditions for the Chicago market, they are not directly relevant for producers in Maryland. However, these prices can be easily transformed into forecasts relevant to Maryland regional livestock markets by using the basis information in tables 1 and 2. Remember, the basis is defined as a local cash price minus the futures price. Thus, a Maryland price forecast can be computed by adding the current futures price to the basis estimate. Maryland price forecasts can extend as far out into the future as is allowed by the existence of quoted futures contract months.

For example, on December 27, 1995, the Live Cattle futures prices were \$66.37 per Cwt. (February 1996 contract), \$66.65 (April 1996), \$62.57 (June 1996), \$61.57 (August 1996), \$63.25 (October 1996) and \$63.87 (December 1996). To construct a set of monthly price forecasts for Westminster, MD, as of December 1995, simply add the average basis for each month to the corresponding futures contract month. For a month in which there is no futures contract, use the next futures contract month. For example, to forecast January 1996 Westminster prices, add the January Westminster basis to the

Figure 2. Eastern Shore Maryland Average Hog Basis: 1990-95

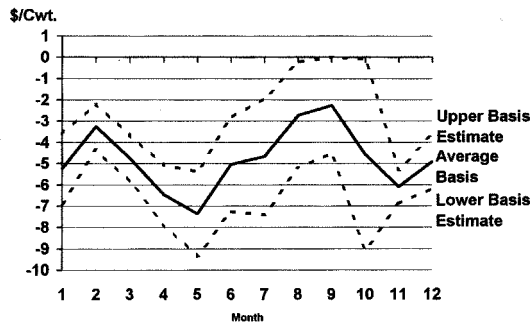
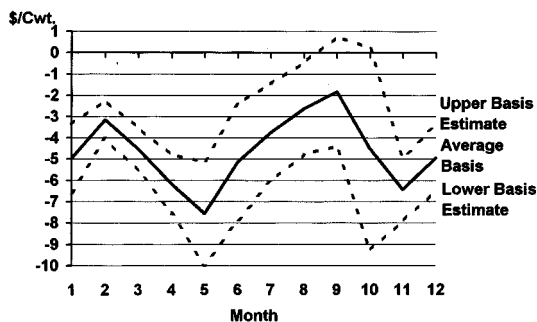


Figure 3. Gwaltney Maryland Average Hog Basis: 1990-95



February 1996 futures price. This computation is presented in the table below. Included are optimistic and pessimistic price forecasts that represent the normal variation expected in the basis. These are based on optimistic and pessimistic basis values.

Price forecasts for regional markets in Maryland should be adjusted periodically, however, as futures prices can change quite dramatically over a short period. The ease with which futures prices can be obtained (i.e., newspapers or TV/radio reports) allows producers to forecast local prices on a regular basis.

Figure 4. Hagerstown Maryland Average Hog Basis: 1990-95

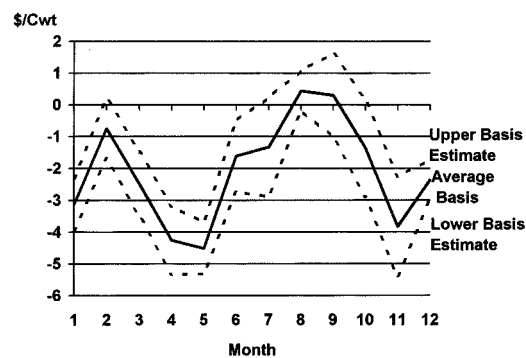


Figure 5. Westminster Maryland Average Cattle Basis: 1990-95

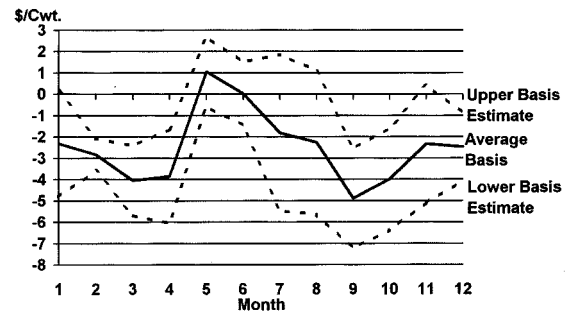


Figure 6. Lancaster Pennsylvania Average Cattle Basis: 1990-95

