

Improving Your Cattle Risk Management Skills Using Beefbasis.com

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Effective risk management requires knowledge of the relationship between local cash market prices and futures market prices, known as the basis. Beefbasis.com is a new web site designed to help feeder cattle buyers and sellers more accurately, and more easily, project basis for a specific set of cattle than they have been able to do in the past. More accurate basis forecasts means feeder cattle buyers and sellers will be able to more accurately assess pricing opportunities afforded them by the futures market, and this in turn means they will be able to manage market risk more effectively.

To review, let's define basis mathematically:

$$(1) \text{ basis} = \text{cash price} - \text{futures price.}$$

Rearranging this equation reveals:

$$(2) \text{ cash price} = \text{futures price} + \text{basis.}$$

The cash price equation (2) indicates that a cash market price can be decomposed into its two component parts, namely futures price and basis. Hedging, using the futures market as a temporary substitute for a cash market transaction that will occur at a later date, allows us to manage or "lock in" the principal component of cash price, namely the futures price, but it does not lock in the "basis". This means that hedgers are still exposed to basis risk.

If a hedger wants to determine what pricing opportunities the futures market is offering, he can take the current futures market price for the feeder cattle contract expiring about the time the cash market transaction will occur

and add an "expected basis" for the cattle to calculate the *Expected Selling Price*, net of any gain or loss in the futures market. Differences between the *Expected Selling Price* and the *Actual Sale Price* after the hedge is concluded will be attributable to differences between the expected and actual basis.

Research conducted at many Land Grant universities over the last 50 plus years reveals that a wide variety of factors can influence cash prices paid for feeder cattle. These factors include (but are not limited to) sex, weight, location, lot size, frame size, grade, and time of year. By definition, any factor that affects cash feeder cattle price also affects basis. Therefore, incorporating information about these factors into basis forecasts should improve basis forecast accuracy and help improve your ability to manage feeder cattle price risk management.

The purpose of the Beefbasis.com web site is to help cattle producers do a better job of managing feeder cattle price risk. This free web site was jointly developed by researchers at Custom Ag Solutions and Kansas State University's Department of Agricultural Economics, with support from USDA's Risk Management Agency (RMA), to improve cattle producers' ability to forecast feeder cattle basis. The web site asks users to provide a small amount of information about a particular group or pen of cattle for which they are interested in forecasting basis and then uses sophisticated econometric models to forecast basis for that particular group of cattle. Via a series of drop-down menus, users are asked to indicate the state, market location and date they plan on

buying or selling the feeder cattle. Site users are also asked to provide the sex, frame score, grade, and estimated weight of the cattle. Based upon the information provided by the site user, the web site obtains the appropriate prior day feeder cattle, live cattle, and corn futures settlement prices via an internet data feed, eliminating the need for users to input these prices. After clicking the run button, the site user views a screen with the forecast results.

The forecast results section provides several useful pieces of information to risk managers. First, users receive a basis forecast for the specified set of cattle. But the forecast results screen provides information that goes beyond a simple point forecast of the basis. Users are also provided with an estimate of the interval that the actual basis is expected to fall within about two-thirds of the time so they have a better idea of the basis risk they are facing. Users also receive an expected cash price for the sale date they have chosen which is calculated using the current futures price and the basis forecast. Finally, users are presented a table that illustrates how basis for the specified set of cattle is expected to vary as feeder cattle and corn futures prices vary.

Feeder cattle basis forecasts are available on Beefbasis.com for the following states: AL, AR, FL, IA, KS, KY, MO, MT, NE, ND, OK, SD, TN, TX, and WY. In many states, forecasts are available for more than one market. For example, in Florida, forecasts are currently available for markets located in Arcadia, Ocala, and Okeechobee. Looking ahead, feeder cattle basis forecasts for an additional ten states should be available by early 2010.

Beefbasis.com also offers cattle producers' additional risk management tools beyond feeder cattle basis forecasts. In the *Forecasting Tools* section of the web site, users can also select *Hedge Analysis*. After generating a basis forecast for a set of cattle, site users can select *Hedge Analysis* and see how a hedge could be expected to perform, if initiated at the current market price, with various feeder cattle or live cattle futures prices when the hedge is completed. This section of the web site lets users

see how basis is expected to vary as feeder cattle or live cattle futures go up and down. The *Hedge Analysis* section also computes an *Expected Realized Cash Price* at the various feeder cattle or live cattle futures prices, which directly accounts for the fact that hedgers are often somewhat under or over-hedged, given the fixed size (50,000 lb.) of the Chicago Mercantile Exchange's feeder cattle futures contract. Reviewing the results of the *Hedge Analysis* section before a hedge is placed can be very informative.

To learn more about Beefbasis.com, simply visit the site at www.beefbasis.com and start exploring!