

# The Kase HedgeModel

## Statistical Decision Support Software

### Introduction

Using sound mathematical, statistical, and engineering principles, Kase and Company, Inc.'s HedgeModel assists its clients in identifying low-risk areas for strategy execution in order to reduce price risk while maximizing the probability of meeting the goals identified within the client's hedge plan. However, while this information leads to the conclusion that the company may wish to hedge, decisions, such as how much of total exposure to hedge and which instruments to use, still have to be made.

### Kase Hedge Categories

Since different companies have differing hedge goals, Kase has developed five distinct levels of hedge strategies that satisfy and meet the objectives of a wide variety of hedgers. In addition to these categories, customization services are available to meet specific client needs. The categories are *Very Aggressive, Aggressive, Moderate, Conservative, and Very Conservative*

Aggressive hedgers are mostly cash flow driven. Their orientation is defensive, oriented toward avoiding adverse prices. They do not often want to "miss" a hedge, and are willing to accept a higher level of hedge costs to ensure that they are protected. On the other hand, Conservative hedgers are mostly revenue-driven and place hedges when opportunities to capture attractive price arise. These hedgers are willing to miss hedges and sit through adverse pricing periods in order to avoid hedge costs. Most hedgers' risk appetites differ between price protection and fix forward strategies.

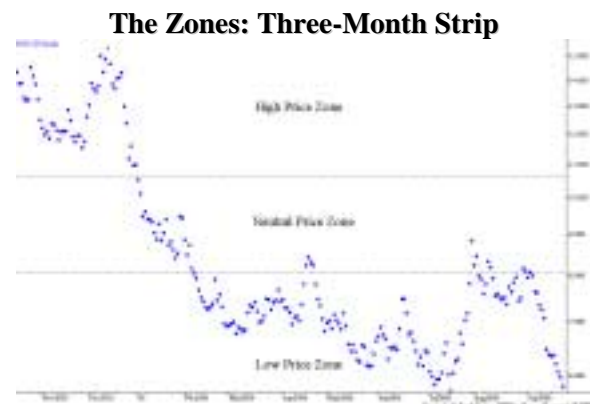
### The Data

The Kase HedgeModel does not require the user to have a live data feed. The model runs off "strips". Strips for NYMEX natural gas, crude oil, propane, and heating oil, as well as crack spreads are posted to the Kase web site daily. Users can easily download these strips, which are then read directly by the model. Because the model employs a mean reversion strategy, the first nearby contract is never included in placement of hedges. Thus, two types of strips are used. The traditional strips, which include the first nearby contract, generate the mathematical algorithms upon which the triggers are based. The modified strips, which commence with the second nearby contract (for example, second through seventh is the six-month modified), constitute the hedge range.

### The Zones

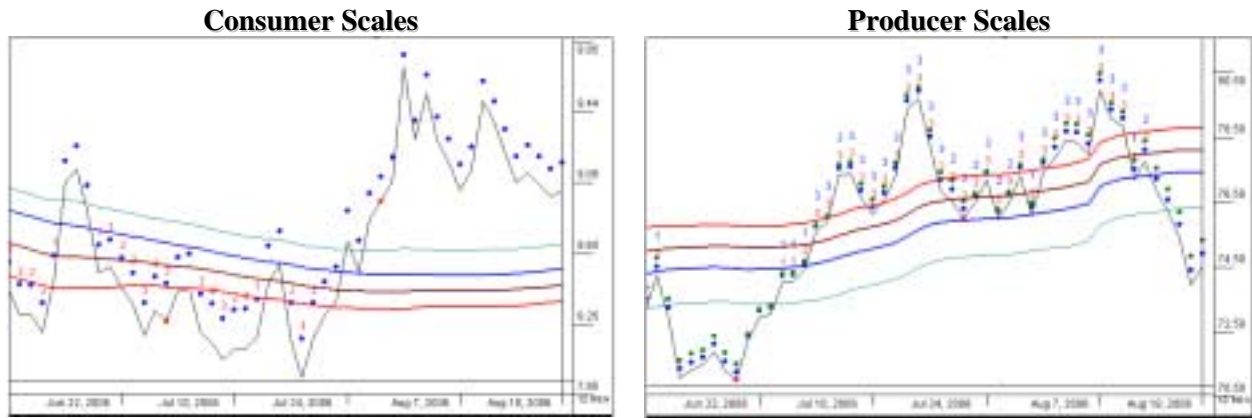
When prices are at or above the producer Scales, or above the consumer Bands, they are said to be in the "high price zone". Inversely, when prices are at or below the consumer Scales or below the producer Bands, they are said to be in the "low price zone".

The price range between the upper and lower triggers is called the "neutral zone". In the chart above, prices are in the neutral zone. Prices in this range are neither statistically favorable (low for consumers, high for producers) nor unfavorable (high for consumers, low for producers).



## The Scales

Consumers capture favorable prices in the low price zone and producers in the high price zone. In these zones, the odds of success on a hedge are high enough to justify taking hedge action.



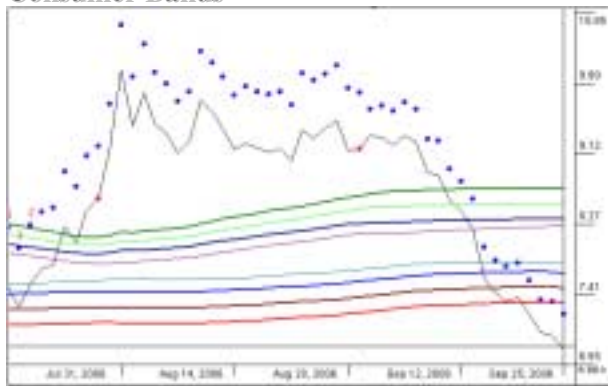
The Scales are placed at a certain number of standard deviations away from the mean, in the favor of the hedger. The time frame over which the target is calculated is variable, returning the most conservative (lower for consumers, higher for producers) price objective. Each Scale calls for a certain percentage of volume, usually 5% per day, to be placed, up to 50% of the total over a three or four month period. Remaining volumes are hedged on a turn back in the adverse direction.

## The “Buy Price Protection” Bands

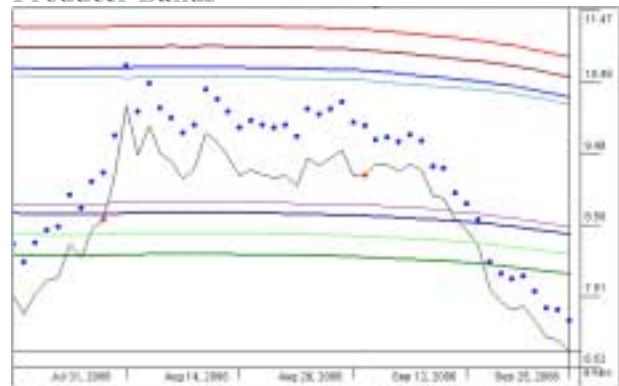
If prices are too high for consumers or too low for producers to be considered favorable, it is possible to option strategies to avoid a worsening situation. Consumers buy calls as the strip rises through the price protection Bands, while producers buy puts as the prices fall through the Bands.

The Bands are calculated similar to the Scales, except on the opposite side of the mean. Again, the hedge strategy, in this case the rate at which options are purchased and the acceptable premia vary depending on risk appetite.

## Consumer Bands



## Producer Bands



## No Charge Trial

For a six-week, no charge trial of the Kase Hedge service, contact us at [kase@kaseco.com](mailto:kase@kaseco.com).