

Notes On DOSS

Goal of Risk Management

Convert the linear profit profile of any cash market or futures position into the truncated profit profile of a synthetic options position

Take care of the downside, and the upside will take care of itself

Definition Of Hedging

The hedger owns insurance, which is defined as having a gamma-positive position. Since futures and forwards have a gamma of zero, no combination thereof can provide a true hedge.

The Asian option, however, is an exception to this rule.

What Are Our Goals?

The following table, taken from Chapter 9 of “The Dynamic Option Selection System,” summarizes the goals of any trading program.

While given for vanilla options, the same principles apply to exotics.

Desired Attributes Of Option Positions

1. Be a buyer of insurance; maintain positive gamma
2. Make the calendar work for you; minimize time decay exposure
3. Make accidents work in your favor
4. Minimize capital commitments
5. Leverage potential gains
6. Sell forward months in carry markets
7. Buy forward months in backwardated markets
8. Minimize net borrowing and maximize net lending

Why Options?

- A gamma-positive option position has a defined loss potential at initiation
- Gains can be highly leveraged
- Option spreads open up additional dimensions of markets to traders:
 - Time decay
 - Volatility

Why Options (Cont.)

- Nonlinear behavior of options, combined with a mechanical system of position management allow for the automatic capture of profits
- Position management further allows for the continual re-optimization of the underlying position

Why Options (Cont., 2)

- Option spreads allow for efficient use of trading capital. This includes:
 - gamma-positive positions emplaced at a net credit
 - Capturing differential time decay between months to minimize implied net borrowing or to create net lending

DOSS Mechanics

Strike Selection Tradeoffs

- Maximizing gamma versus minimizing time decay
- Maximizing leverage and minimizing net borrowing
- Maximizing delta versus minimizing capital outlay

Selected Strikes

- For call options:
 - Strike to buy for bullish purposes
 - Strike to sell in a bull spread
 - In-the-money straddle strike
 - Strike to sell against a long future
- Opposite set of strikes for put options
- Addition of at-the-money strike leads to a total of nine selections

Long Strike For Bullish Purposes

The objective can be verbalized as purchasing the most delta possible, with the most gamma possible, but with the lowest net borrowing costs

This results in an in-the-money strike; the degree to which it is in-the-money increases with time to expiration and/or volatility

Short Strike For A Bull Spread

The objective can be verbalized as selling the least gamma for the net sale of delta

This results in an out-of-the-money strike; the degree to which it is out-of-the-money increases with time to expiration and/or volatility

In-The-Money Straddle

The objective can be verbalized as purchasing the most gamma possible for the net delta purchased, while minimizing the total capital outlay

This strike moves deeper in-the-money with increased time to expiration and/or volatility

Short Strike Against Future

The objective can be verbalized as selling the greatest amount of delta at the minimum short gamma exposure

This strike moves further out-of-the-money with increased time to expiration and/or volatility

Position Selection

- Three contract months examined
- A total of forty-four positions examined in the middle month, twenty-eight in outside months
- All positions must have positive gamma at initiation and leverage less than 5:1 to the underlying exposure

Position Selection (Cont.)

- Intermonth spreads are measured against their net deviation from a base case of full carry
- All positions begin at the target delta specified by the user

Position Selection (Cont., 2)

The objective function is consistent with those used in strike selection:

Maximize the expected movement on position delta with minimization of net borrowing

Position Management

The two rules of position management are:

The delta must be less than or equal to the initial target level, especially if there is an offsetting cash market or futures position, and

Position should be restructured once net delta per spread exceeds .8 or falls below -.8; this maintains optimal gamma range