

## MONTREAL EXCHANGE

# Short Put Calendar Spread (Short Put Time Spread)

### Description

Buying one put option and selling a second put option with a more distant expiration is an example of a short put calendar spread. The strategy most commonly involves puts with the same strike (horizontal spread) but can also be done with different strikes (diagonal spread).

### Outlook

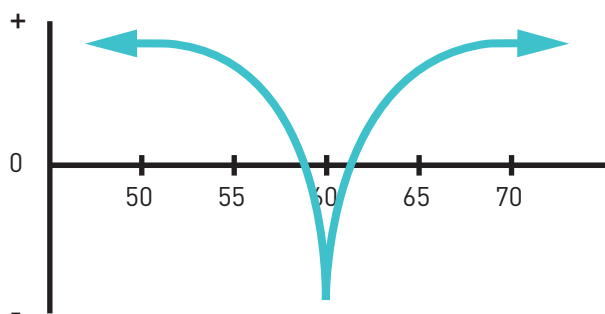
The investor is looking for a sharp move in either direction in the underlying stock during the life of the near-term option or a sharp move downward in implied volatility.

### Summary

This strategy profits from the different characteristics of near- and longer-term put options. If the underlying stock holds steady, the strategy suffers from time decay. If the stock moves sharply up or down, both options will move toward their intrinsic value or zero, thus narrowing the difference between their values. If both options have the same strike price, the strategy will always receive a premium when initiating the position.

#### Short Put Calendar Spread

Net Position



#### Example

Long 1 XYZ near 60 put  
Short 1 XYZ far 60 put

#### MAXIMUM GAIN

Net premium received

#### MAXIMUM LOSS

Strike price - net premium received (substantial)

### Motivation

Profit from a sharp move in stock price.

## Variations

The strategy described here involves two puts with the same strike but at different expirations, i.e., a horizontal spread. A diagonal spread, involving two puts with different strikes as well as expirations, would have a slightly different profit/loss profile. The basic concepts, however, would continue to apply.

## Max Loss

The maximum loss would occur should the underlying stock remain steady. If at the first expiration the stock is at the strike price of the expiring option, that option would expire worthless while the longer-term option would retain much of its time premium. In that situation, the loss would be the cost of buying back the longer-term option less the premium received when the position was initiated. If the near-term option expires worthless and the investor takes no action, the strategy becomes a naked put whose potential loss is limited only because the stock cannot go below zero.

## Max Gain

The maximum gain would occur should the two options reach parity. This could happen if the underlying stock rose enough that both options became worthless, or if the stock declined enough that both options went deep in-the-money and traded at their intrinsic value. In either case, the gain would be the premium received when the position was initiated.

## Profit/Loss

The potential profit is limited to the extent the near-term option gains more quickly, or declines more slowly, in value than the longer-term option. During the life of the near-term option, the potential loss is a function of implied volatility, and a sharp spike higher could cause substantial losses. If the position is held beyond the expiration of the near-term option, the strategy becomes simply a naked put with no possibility of further profit and the potential for substantial losses.

## Breakeven

Since the options differ in their time to expiration, the level where the strategy breaks even is a function of the underlying stock price, implied volatility and rates of time decay

## Volatility

An increase in implied volatility, all other things equal, would have an extremely negative impact on this strategy. In general, longer-term options have a greater sensitivity to changes in market volatility, i.e., a higher Vega. Be aware that the near- and far-term options could and probably will trade at different implied volatilities.

## Time Decay

The passage of time, all other things equal, would have a very negative impact on this strategy. In general, an option's rate of time decay increases as its expiration draws nearer.

## Assignment Risk

Early assignment, while possible at any time, generally occurs for a put only when the option goes deep in-the-money. Should early exercise occur, using the near-term option to cover the assignment (assuming it has not expired) would require financing a long stock position for one business day.

And be aware, a situation where a stock is involved in a restructuring or capitalization event, such as a merger, takeover, spin-off or special dividend, could completely upset typical expectations regarding early exercise of options on the stock.

## Expiration Risk

Expiration risk for this strategy would occur when the longer-term option expires. The greatest risk for this position occurs if it is held past the expiration of the near-term option, when the strategy would become a naked put. By comparison, the risk of being unexpectedly assigned when the longer-term option finally expires seems somewhat trivial.

## Comments

The difference in time to expiration of these two put options results in their having a different Theta, Delta and Gamma. Obviously, the near-term put suffers more from time decay, i.e., has a higher Theta. While the near-term put may often have a lower Delta, its Gamma may be higher (if the strike is at-the-money). This means that if the stock moves sharply lower, the near-term put becomes much more sensitive to the stock price and its value approaches that of the more expensive longer-term put.

## Related Position

Comparable Position: [Short Call Calendar Spread](#)

Opposite Position: [Long Put Calendar Spread](#)