



Calendar Spreads: Understanding a Time-Based Options Strategy



Options
Strategies



Introduction

Calendar spreads can be used to capitalize on trends, but they are sensitive to market direction and volatility in trending markets. In range-bound markets, calendar spreads collect premiums, making them suitable for income-generation strategies.

What is a calendar spread?

A calendar spread is an options strategy that involves buying and selling options on the same underlying security with the same strike price but with different expiration dates. This strategy can be used with both calls and puts.

There are two types of calendar spreads: long and short. Additionally, two variations of each type are possible using call or put options.

How to create a calendar spread

Long call calendar spread:

A trader may use a long call calendar spread when they expect the stock price to stay steady or drop slightly in the near term. This strategy can be beneficial if the stock price rises after the short-term option expires but before the longer-term option ends.

- 1 Buy a call option with a longer expiration date
- 2 Sell a call option with the same strike price but a shorter expiration date

Long put calendar spread:

A trader may use a long put calendar spread when they expect the stock price to stay steady or rise slightly in the near term. This strategy can be beneficial if the stock price falls and volatility increases in between the expirations of the short-term option and the longer-term option.

- 1 Buy a put option with a longer expiration date
- 2 Sell a put option with the same strike price but a shorter expiration date

Short (reverse) calendar spreads

A reverse calendar spread is the opposite of a long calendar spread. In this instance, you would sell the long-term option and buy the short-term option.

A reverse calendar spread is commonly used when markets are expected to make a large move in either direction, typically at trend reversals. When prices change dramatically, the short-term option's value can increase faster than the long-term option's value, which may lead to profits.

Short call calendar spread – seeks to benefit from falling prices:

- 1 Sell a call option with a longer expiration date
- 2 Buy a call option with the same strike price but a shorter expiration date

Short put calendar spread – seeks to benefit from rising prices:

- 1 Sell a put option with a longer expiration date
- 2 Buy a put option with the same strike price but a shorter expiration date

Calendar spreads risk/reward profiles

The profit and loss potential of a long calendar spread can vary widely, depending on when the trader chooses to exit the position. There is no single, fixed payoff diagram for this strategy.

The maximum loss is clear if the trader holds both options until the first expiration date. It's limited to the initial cost, or debit, paid to set up the spread. This happens if both options are closed out simultaneously when the short-term option expires.

However, the actual outcome can change based on several factors:

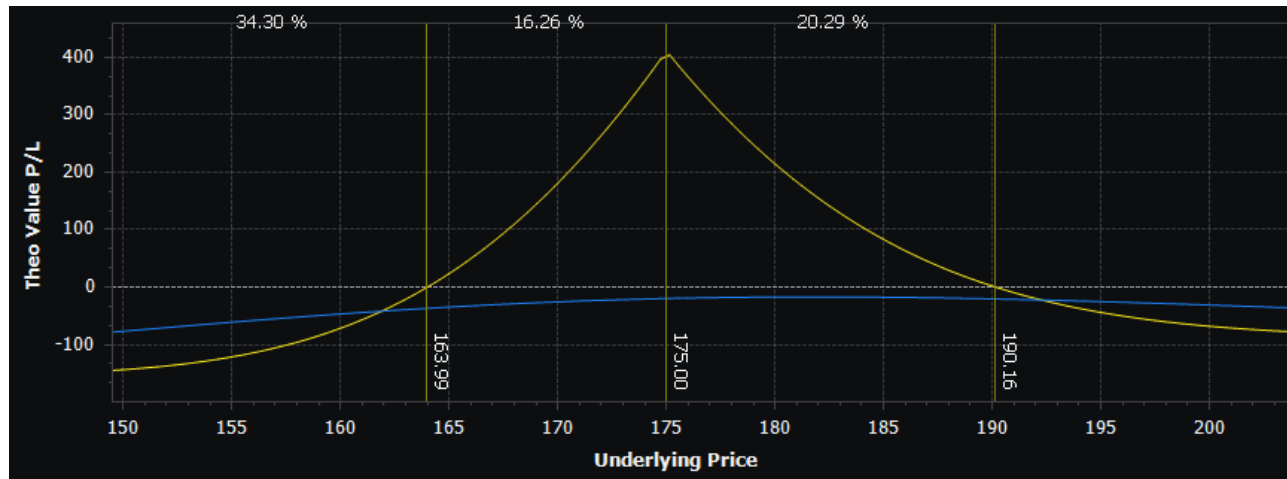
- a. How the stock price moves
- b. Changes in market volatility
- c. The passage of time
- d. When the trader decides to exit

A trader might close the position early if it becomes profitable before expiration. Alternatively, they might hold the long-term option after the short-term option expires, hoping for further gains.

Because of these variables, the final profit or loss can differ greatly from the initial risk profile. This makes the call calendar spreads a more complex strategy that requires careful monitoring and management.

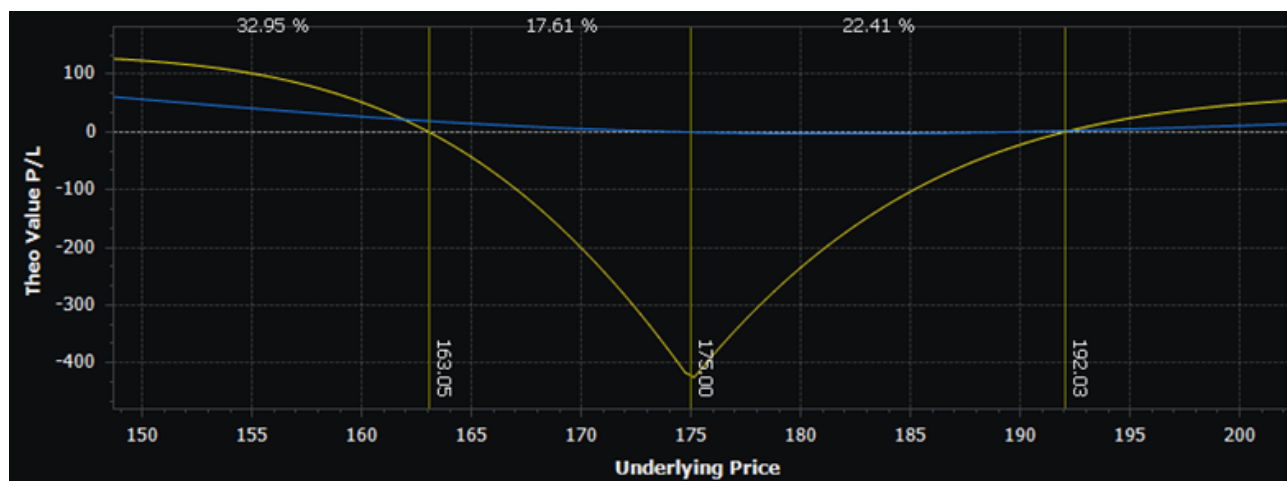
Long calendar spread:

- Maximum Reward:** Potentially unlimited.
- Breakeven:** Cannot be easily calculated. Instead, you can estimate them using price slices while analyzing the risk profile in OptionStation Pro. They will adjust as long as the position is open.
- Maximum Risk:** The debit paid for the spread.



Short calendar spread:

- Maximum Reward:** The net premium collected.
- Breakeven:** Cannot be easily calculated. Instead, you can estimate them using price slices while analyzing the risk profile in OptionStation Pro. They will adjust as long as the position is open.
- Maximum Risk:** Theoretically unlimited.



	Long call calendar	Long put calendar	Short call calendar	Short put calendar
Description	Buy a longer-term call; sell a shorter-term call	Buy a longer-term put; sell a shorter-term put	Sell a longer-term call; buy a shorter-term call	Sell a longer-term put; buy a shorter-term put
Debit or credit	Debit (pay)	Debit (pay)	Credit (sell)	Credit (sell)
Expected underlying changes	Moderate increase in price or volatility	Moderate decrease in price or rise in volatility	Moderate to sharp drop in price or volatility	Moderate to sharp rise in price or a drop in volatility
Maximum risk	Debit paid (cost)	Debit paid (cost)	Unlimited (can use stops)	Unlimited (can use stops)
Maximum profit	Theoretically unlimited	Theoretically unlimited	Net premium collected	Net premium collected

Choosing the best strike price

The choice of strike price is crucial for a calendar spread. Here are some guidelines:

- 1 At-the-money (ATM):** This is a common choice as it can balance potential profit and risk. It is done by choosing a strike price close to the current underlying price.
- 2 Out-of-the-money (OTM):** This could be less expensive, but it lowers the chance of profit. It is created by selecting a strike price above the current underlying price for calls or below for puts.
- 3 In-the-money (ITM):** This is more expensive than the other selections, but has a higher chance of profit. To create using calls, pick a strike price below the current underlying price, or above for puts.

Your choice depends on your market outlook and risk tolerance. ATM options are often preferred for calendar spreads as they are most sensitive to time decay.

How volatility affects calendar spreads

Low-volatility environments

Calendar spreads tend to perform well in low volatility environments, as the time decay of options with longer expirations is more pronounced, benefiting the long-term option leg of the spread.

The strategy profits from the relative decrease in the value of longer-term options, while the shorter-term options remain relatively stable.

If you anticipate a spike in volatility, a short calendar spread may be suitable. The long options may increase in value with the rise in volatility.

Conversely, a long calendar spread (selling options with closer expiration dates and buying options with farther expiration dates) may be more effective during periods of low volatility. Low volatility often depresses the options premium, potentially making them cheaper. A rise in volatility after entering could increase the value of the long option, possibly allowing it to be sold for a profit.

High-volatility environments

Calendar spreads can be more challenging in high-volatility environments, as the increased uncertainty affects both legs of the spread.

The long-term option leg may benefit from the increased volatility. Still, the short-term option leg may also experience a larger increase in value, potentially reducing the spread's profit potential.

High volatility can also lead to larger losses if the market moves sharply against the spread, emphasizing the importance of risk management and position sizing.

Volatility summary

- 1 Increasing volatility usually benefits calendar spreads. The long-term option you bought could gain more value than the short-term option you sold.
- 2 Decreasing volatility often hurts calendar spreads. Both options may lose value, but the long-term option you bought might lose more.

- 3 Sometimes, short-term and long-term options have different volatility levels. This volatility skew can create opportunities or risks for calendar spreads. Traders commonly look to buy lower volatility options and sell higher ones.

Time decay and calendar spreads

Time decay, or theta, is central to calendar spreads:

- 1 Short-term options lose value faster due to time decay. As the seller of this option, you benefit from this rapid decay.
- 2 Long-term options lose value more slowly. As the buyer, you're less affected by time decay.
- 3 Maximum time decay: The short-term option experiences the fastest time decay in its final weeks. This is often when calendar spreads potentially make the most profit.

Why use calendar spreads?

Traders use calendar spreads to:

- 1 Potentially profit from time decay
- 2 Benefit from changes in volatility
- 3 Limit risk versus trading a naked long or short option
- 4 Attempt to profit from a neutral market outlook



Watch the Webinar – “Balancing Risk and Reward with Options Calendar Spreads”. Encounter a strategy that benefits from volatility and time decay in stable markets.

Risks of calendar spreads

- 1 They are a complex strategy that requires careful management.
- 2 Can lose money, potentially more than the initial margin, if the stock price moves too far in either direction.
- 3 There may be higher costs due to multiple legs or trades.
- 4 They are sensitive to changes in volatility.

Strategy example – long call calendar spread:

Using RadarScreen® in the Calendar Spreads workspace to filter for candidates, Main Street Cap Corp (MAIN) appeared in the Implied Volatility % change-down filtered list.

Asset	Exchange	Activity	Results
Equities	ALL	Imp Vol - % Chg Down	100

	Symbol	Description	Last	Open Int - All Opts	Average True Range:1	Average True Range:2	Impl Volty- All Opts IV All	IV Avg	Next Ea... #Days
1	K	Kellanova	80.16	155,778	0.30	1.47	4.62%	15.38%	61
2	MAIN(HB)	Main Street Cap Corp	48.55	10,155	0.71	0.86	10.40%	14.57%	55
3									



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The daily chart reveals a security that is trading sideways with lower-than-average volatility. Additionally, a long call calendar spread will be used because the current price is near the lower part of the channel and may rise.



The short 50-call option expires in 41 days, and the long 50-call option expires in 132 days. Other expirations were available, but they had odd strike prices. The calendar spread was created one leg at a time by holding the CTRL key on the keyboard and left-clicking on the bid to sell and the ask to buy. The trade bar will appear and populate the calendar spread with the options legs selected.

OptionStation Pro

Symbol	Description	Last	Net ...	High	Low	Volu...	Beta Weighting	Account
MAIN	Main Street Cap C...	48.63	-0.88	49.39	48.32	412,0...	SPY	All Accounts

Spread Single - Filter NONE - Strikes 2

CALLS													PUTS			
Pos	The...	Vega	Theta	Ga...	Delta	Bid	Ask	Strike	Bid	Ask	Delta	Ga...	Theta	Vega	The...	Pos
18 Oct 24 (41d)	4.00	0.05	-0.03	0.051	0.77	3.60	5.80	45	0.25	0.30	-0.14	0.057	-0.01	0.04	0.11	22.84% (±3.02)
	0.73	0.06	-0.01	0.175	0.30	0.25	0.50	50	1.80	2.20	-0.61	0.113	-0.01	0.06	1.85	
20 Dec 24 (104d)	4.95	0.00	-0.01	0.000	1.00	2.80	5.30	45	0.75	1.05	-0.22	0.045	-0.01	0.09	0.53	14.53% (±3.03)
17 Jan 25 (132d)	1.89	0.12	-0.01	0.132	0.45	0.90	1.05	50	2.55	3.20	-0.50	0.063	-0.01	0.12	2.46	20.67% (±4.86)

Options Analysis Manage Search

Trade	Spread	Delta	Theta	Max Profit	Max Loss
Calendar		14.64	0.29	N/A	N/A

Side	Open / Close	Quantity	Symbol	Expiration	Strike	Type
Sell	Open	-1	MAIN	18 Oct 24	50	Call
Buy	Open	1	MAIN	17 Jan 25	50	Call

Order Type: Limit, Limit Price: 0.60, Stop Price: 0.60, Route: Intelligent, Duration: Day, Account Number: SIM1097305M

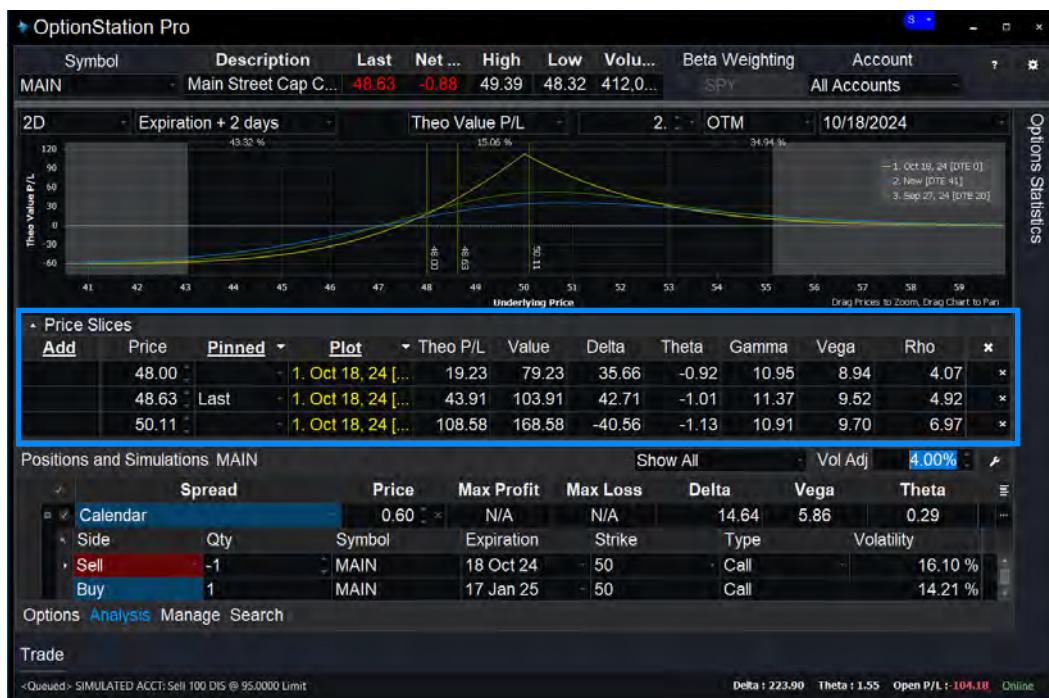
Natural Mid: 0.80 / 0.60, Activation Rule: ...

Delta: 223.90, Theta: 1.55, Open P/L: -98.18

DEBIT Place Order

You may notice that the Max Profit and Max Loss boxes show N/A. It is difficult to determine these amounts exactly since the short call could be assigned before buying to close or expiration. Another short 50-call could also be added once the first expires.

Analyzing the calendar spread and using the price slices allows you to see hypothetical profits and losses based on the underlying price or volatility changes.



Adjusting the plot to the expiration of the short call shows the theoretical profit of the long call calendar spread. The slices have been adjusted to show the underlying price at the low and the range's high. Should the price exceed either side of the range, the price slice can be adjusted to estimate the theoretical loss. Remember, this is only an estimate, and the actual numbers could vary.



The long calendar spread was placed with the implied volatility about 4% below the average. The price slices can also show the theoretical profit or loss based on the volatility rising or falling from the current level.

The results are shown below if the volatility rose by 4% at the short call's expiration.



However, a rise in volatility can hurt the spread, as seen with the -3% adjustment.



Exiting a calendar spread

A stop loss or take-profit order can be placed on any calendar spread if the underlying price moves to or beyond a certain level. This is done using the activation rule tool. For more information, explore the article and video in the [Options Education Center](#).

The objective for the long calendar spread is to have the short expire out-of-the-money and to repeat selling another shorter-term option or to profit from the long option with the premium collected on the shorts, lowering the cost basis.

If the underlying price or volatility changes, the short calendar spread can also be exited for a profit or loss. The optimal profit is realized if the longer-term short option expires out-of-the-money.

Test before you trade

Login to the TradeStation platform in Simulated Trading mode to familiarize yourself with these strategies without risking real capital. As you gain confidence, gradually incorporate them into your live trading, starting with small positions. Remember, mastery comes through practice and experience.

Conclusion

Options calendar spreads are a versatile strategy for capturing opportunities created by volatility, time decay, and the underlying asset's lack of or delayed price movement. By understanding the key characteristics, benefits, risks, and considerations, traders can effectively implement this strategy to manage risk and potentially generate profits.



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