Liquid Strategies™

What are Greeks?

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PUBLISHED

January 13, 2026

The Greeks measure how different forces affect an option's price. Each one shows a specific sensitivity—how the option responds to changes in the stock, time, or volatility. Understanding them is like reading your car's dashboard. Each gauge gives you feedback on how your position is behaving and how quickly it could change.

Delta (Δ)

Delta measures how much an option's price is expected to change for a small change in the underlying stock price. A call option with a delta of 0.5 typically increases by about fifty cents for a one-dollar increase in the stock price, while a put with a delta of –0.5 typically decreases by about the same amount when the stock rises. Calls generally have positive delta and puts generally have negative delta. As the stock price moves closer to the strike price, delta often moves toward +1 for calls and –1 for puts, reflecting a higher sensitivity to stock price changes.

Gamma (Γ)

Gamma measures how quickly an option's delta changes as the underlying stock moves. Options with higher gamma experience larger shifts in delta from small movements in the stock price, which increases the variability of the option's price response. Gamma is typically highest for options that are near the strike price and close to expiration. It reflects how responsive an option's price can be—and how much that responsiveness can change—as market conditions shift.

Vega (v)

Vega measures how an option's price is expected to change when implied volatility changes. Higher implied volatility generally increases option premiums, while lower implied volatility generally decreases them, reflecting changes in the market's expectations for future price movement. Vega tends to be highest for options with more time until expiration and gradually declines as expiration approaches.

Theta (θ)

Theta represents the effect of time decay on an option's price. It estimates how much value an option is expected to lose each day, assuming all other factors remain unchanged. Because options gradually lose extrinsic value as expiration approaches, theta is typically negative for long option positions and positive for short option positions. It reflects the impact of the passage of time on an option's value.

Why Theta Matters

Time decay is a consistent feature of options pricing. Each passing day reduces the amount of time available for the underlying stock to move before expiration, which gradually lowers an option's extrinsic value if all other factors remain unchanged. Even when the stock price does not move, the passage of time can still reduce the value of long option positions through theta. Understanding and managing this exposure is an important part of assessing the risks involved in holding options.

Analogy: Driving a Car

Delta: The gas pedal. Pressing it tells you how quickly the option responds to movements in the stock. A gentle press creates a small reaction; a hard press makes the option move more like the stock itself.

- Call options have positive delta, so they tend to move in the same direction as the stock—pressing the pedal moves the car forward.
- Put options have negative delta, so they tend to move opposite the stock—pressing the pedal makes the car back up instead.
- Long options respond in the direction of their delta, while short options respond in reverse, much like how driving forward or in reverse changes how the pedal affects your motion.

Gamma: In a regular car, small turns of the wheel create gradual, predictable changes. In a high-performance car, even the slightest adjustment can shift your direction quickly. Options with high gamma behave the same way—small moves in the stock can lead to faster changes in delta. High gamma means the option's sensitivity can adjust rapidly as the market moves, making the position more responsive to the underlying stock.

Vega: The weather forecast. Clear skies—low volatility—create a calm, predictable drive with fewer surprises along the way. Stormier forecasts—high volatility—signal a wider range of possible conditions, from sudden turns to rapid shifts in traction. When the outlook becomes uncertain, the market places greater value on features that help handle changing conditions, much like how all-weather tires or stability systems become more important when the weather turns unpredictable.

Theta: A slow leak. The car keeps moving, but over time the available resources gradually decline. Each mile represents another day passing, reducing the amount of time left for the journey. As expiration approaches, that remaining "capacity" diminishes more quickly, much like a leak that becomes more noticeable as the tank empties. Theta reflects this steady loss of time value as the option moves closer to the end of its life.

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