First-order delta estimate

Option sensitivities | Original synthetic example | Edition 2026-11-26

Delta approximates the local change in an option's value for a small underlying-price change, holding other inputs fixed. A constant-delta approximation becomes less reliable for large moves.

FORMULA Approximate option change = delta x underlying change

SCENARIO 01: Fixed local delta -0.8; all other inputs fixed



WORKED EXAMPLE

A +1 underlying move gives approximately -0.8 option-value change. Large moves can invalidate the linear estimate.

COMMON MISTAKE

Extending a local linear estimate across a large price move ignores changing delta and other inputs.

BEFORE YOU USE THE CALCULATION

1. Use a small stated move.
2. Keep units per underlying unit.
3. Compare with a fuller model before decisions.

COMPARE TWO MORE INPUT SETS

Scenario 05: Fixed local delta 0.1; all other inputs fixed. A +1 underlying move gives approximately 0.1 option-value change. Large moves can invalidate the linear estimate.

Scenario 10: Fixed local delta 0.9; all other inputs fixed. A +1 underlying move gives approximately 0.9 option-value change. Large moves can invalidate the linear estimate.

Synthetic values are not historical market data. Educational material; trading can result in substantial losses.