# Gamma and changing delta

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

Gamma approximates how much delta changes for a small underlying-price movement. This is another local approximation and should not be extrapolated without checking the pricing model.

**FORMULA Approximate delta change = gamma x underlying change**

### SCENARIO 01: Local gamma 0.01 per underlying unit




**WORKED EXAMPLE**

A +2 move changes delta by approximately 0.020; a full model is needed when the move is not local.

**COMMON MISTAKE**

Adding gamma directly to option price confuses a change in delta with a change in value.

**BEFORE YOU USE THE CALCULATION**

1. State the underlying move.
2. Track delta bounds and model validity.
3. Distinguish gamma units from delta units.

**COMPARE TWO MORE INPUT SETS**

Scenario 05: Local gamma 0.03 per underlying unit. A +2 move changes delta by approximately 0.060; a full model is needed when the move is not local.

Scenario 10: Local gamma 0.055 per underlying unit. A +2 move changes delta by approximately 0.110; a full model is needed when the move is not local.

Background context: Options Industry Council: Greeks and volatility



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