

The term structure of expected movement

VOLATILITY TERM STRUCTURE

Implied volatility varies by expiry: the same underlying's options carry different implied volatilities at different dates, forming a term structure - usually rising with time, but inverting when a near-term event looms. Reading it says when the market expects movement: a bump at a particular expiry marks a dated event the market is pricing, and the shape across expiries is a map of expected movement over time, readable off the chain.

Implied volatility is not one number per underlying but one per expiry - so it has a term structure across dates, exactly as the futures curve ran across delivery months. Reading it says when the market expects the underlying to move.

The shape and its reads

The usual upward slope: longer-dated options usually carry higher implied volatility, because more can happen over more time - the normal term structure, analogous to the futures contango the reader already knows. The event bump: a specific expiry can carry elevated implied volatility because a known event - earnings, a decision - falls before it; the bump marks the dated event the market is pricing, isolatable by comparing expiries. The inversion: when a large near-term event looms, near-dated implied volatility can exceed far-dated - the structure inverting because the immediate uncertainty outweighs the longer horizon, the volatility equivalent of futures backwardation.

What the term structure reads

The shape across expiries is a map of expected movement over time. A bump at the expiry after an earnings date isolates the earnings-move expectation; an inverted structure says the market expects near-term turbulence resolving into calm; a steep normal slope says the uncertainty grows with horizon. Comparing an option's implied volatility to its neighbours across expiries - not just to history - says whether it is expensive because of a specific dated event or because of the general term structure, which matters for whether the premium reflects a crush-prone event or a durable expectation.

The literacy this completes

The futures track read curves across delivery months; the options reader reads volatility across expiries - the same term-structure literacy, in the volatility dimension unique to options. It completes the reading of implied volatility: not one number, but a structure across time whose shape prices when movement is expected. Module 8 adds the other axis - the volatility smile and skew across strikes - to build the full surface; this module reads the expiry axis, because a term structure is where the reader first sees that volatility, like a futures curve, has a shape that carries information. Reading it is reading when the options market expects the underlying to move.

Check your understanding

1. What does an 'event bump' in the volatility term structure mark?

- a. A pricing error
- b. A specific expiry carrying elevated implied volatility because a known event - earnings, a decision - falls before it, isolatable by comparing expiries
- c. The most liquid expiry

Answer: b. The bump marks the dated event the market is pricing. Comparing an option's implied volatility to its neighbours across expiries isolates the event-move expectation from the general structure.

2. What is the options analogue of the futures term-structure literacy?

- a. Reading the premium alone
- b. Reading implied volatility across expiries: usually rising with time, bumping at dated events, inverting before near-term turbulence - a shape that prices when movement is expected
- c. Reading the strike ladder

Answer: b. The futures curve ran across delivery months; the volatility term structure runs across expiries. The same literacy, in options' volatility dimension - a shape carrying information.