

Volatility and the premium

IMPLIED VOLATILITY

The single largest influence on an option's time value: the more the underlying is expected to move, the more the possibility an option represents is worth, so higher expected volatility means higher premiums. The market's expectation is baked into the premium as implied volatility - a number derived from the price - and options are as much a trade on volatility as on direction, which is the concept that most separates them from every instrument before.

Time decay is one force on time value; volatility is the larger. An option's worth depends on how much the underlying might move, and the market's expectation of that movement - implied volatility - is baked into every premium. This is the concept that makes options a volatility instrument, not just a directional one.

Why volatility sets the premium

An option is payment for possibility, and possibility is larger when the underlying might move more: a volatile underlying could swing far past the strike, making the option valuable, so its options cost more; a placid underlying is unlikely to move far, so its options cost less. Expected volatility is therefore the dominant input to time value - more than time itself for many options - and two otherwise identical options on differently-volatile underlyings carry very different premiums, entirely because of how much movement the market expects.

Implied volatility

Derived from the price: implied volatility is the volatility the current premium implies - run the pricing backward from the market premium and it reports the movement the market is expecting; a read on consensus expectation, not a fact about the future. It moves on its own: implied volatility rises before uncertain events (earnings, decisions) and falls after them - so a premium can rise on volatility expectation even as the underlying sits still, and collapse on the event's resolution even if the underlying moved. It is a tradeable quantity: because premiums move on implied volatility, options are a way to trade the market's expectation of movement itself - long options are long volatility, short options short it, a dimension no share or future has.

The trap this sets

The volatility dimension is where options punish the naive most subtly: a buyer can be right about direction and still lose because implied volatility fell - the famous 'volatility crush' after an earnings event, where the premium collapses as expectation resolves, taking the buyer's money even though the underlying moved their way. Buying options when implied volatility is high means paying inflated time value that deflates against you; the option was expensive for a reason the buyer did not price. Module 5 makes volatility one of the three judgements an options view requires, and module 8 maps

its full structure - the surface and the skew. For now: an option's premium is a volatility bet as much as a direction bet, and ignoring that is how directional traders lose money being right.

Check your understanding

1. Why do options on a volatile underlying cost more?

- a. Volatile underlyings are more expensive
- b. An option is payment for possibility, and a volatile underlying could swing far past the strike - so more expected movement means more valuable possibility and higher premiums
- c. Volatility increases commissions

Answer: b. Expected volatility is the dominant input to time value. Two identical options on differently-volatile underlyings carry very different premiums, entirely from expected movement.

2. What is a 'volatility crush'?

- a. A market crash
- b. Implied volatility collapsing after an event resolves, so a bought option's premium falls even if the underlying moved the buyer's way - being right on direction and losing on volatility
- c. A spike in trading volume

Answer: b. The premium was inflated by pre-event expectation; resolving it deflates the premium. Buying high-implied-volatility options means paying time value that deflates against you.