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#Knowledge

#Options

Ever wondered y gamma is the enemy of straddle / strangle sellers and what it means?

Presume readers are aware of option Greeks meaning...

To understand , first ...

Relationship between delta, gamma, theta and option premium.

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$\text{Theta} + (\text{int Rate} \times \text{Underlying price} \times \text{Delta}) + (0.5 \times \text{variance of underlying} \times \text{Underlying price} \times \text{Underlying Price} \times \text{Gamma}) = \text{Int rate} \times \text{Option premium}.$

Strangle and straddles are delta neutral setup; For a delta neutral setup, the second term becomes zero; Hence,

...

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$\text{Theta} + (0.5 \times \text{variance of UL} \times \text{UL price} \times \text{Underlying price} \times \text{Gamma}) = \text{Int rate} \times \text{option premium}$

Straddle and strangles have typically zero delta at initiation; they also have positive theta, meaning they gain over time assuming other components of option r constant ..

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In a delta neutral portfolio, if theta is largely +ve , Gamma will be -ve by a large extent to satisfy the above relation

mathematically, which means that as expiry nears the strangles and straddles will have large -ve gamma; This is what u see traders telling gamma effect.