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Decode The Market Code

CE/PE Dynamics

Premium, Decay & Strike Selection

An option's premium is **intrinsic value plus time value**, and time value **decays** — slowly at first, then sharply into expiry. Learn how implied volatility sets the **expected move**, and how to pick a strike by weighing **breakeven distance** against it, instead of by price alone.

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About This Guide

An option's premium is intrinsic value plus time value, and time value **decays** — slowly at first, then sharply near expiry — depending on implied volatility (IV). This guide covers how premium actually behaves through its life and through expiry day, how IV converts into an **expected move**, and how to pick a strike by weighing breakeven distance against that move instead of by price alone.

This is the advanced companion to the Options Trading for Beginners guide. It assumes you already know what calls, puts and the Greeks are. All numbers come from a simplified model: spot 24,000, 15% implied volatility, a 6.5% interest rate, prices per unit.

CE/PE Dynamics: Premium, Decay & Strike Selection

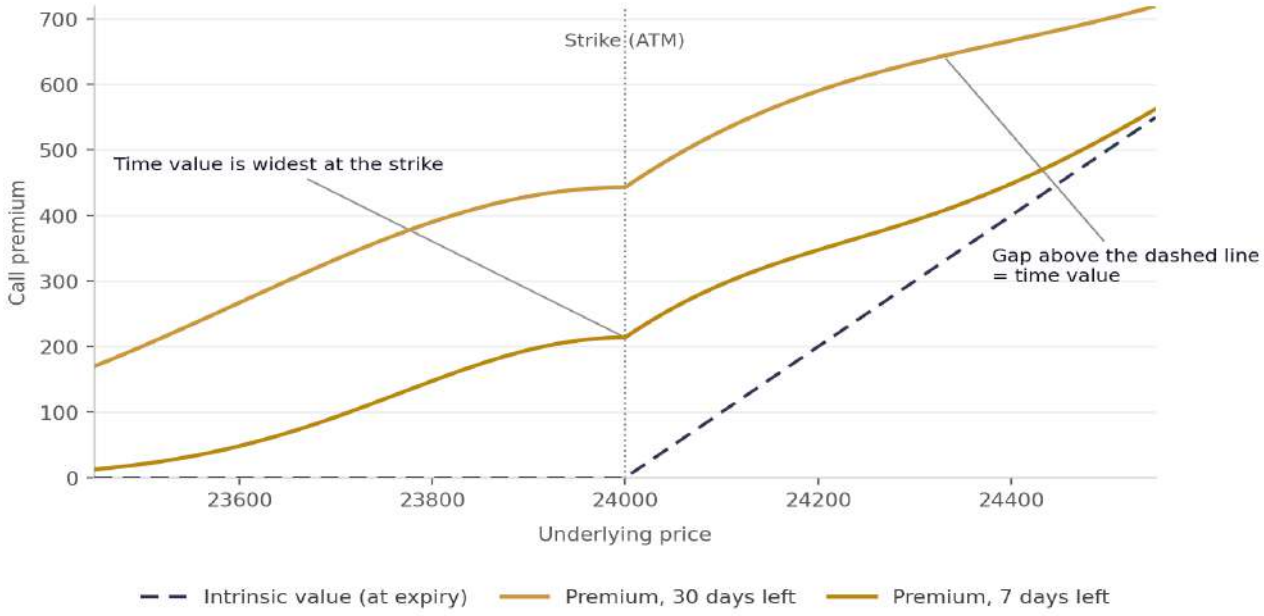
CE (Call European) and **PE** (Put European) are the NSE labels for call and put options. An option's premium is its intrinsic value plus time value. Time value decays, slowly at first and then sharply near expiry, and it depends on **implied volatility (IV)**. Good strike selection means weighing how far the strike is from spot against the market's expected move, not choosing the cheapest option.

1. What Makes Up an Option Premium?

Premium = Intrinsic value + Time value

Call intrinsic = max(Spot - Strike, 0) | Put intrinsic = max(Strike - Spot, 0)

Intrinsic value is what the option would be worth if exercised now. Time value is what the market charges for the chance of a favourable move before expiry. It is **largest for at-the-money options** and shrinks as the option goes deep in the money or far out of the money.

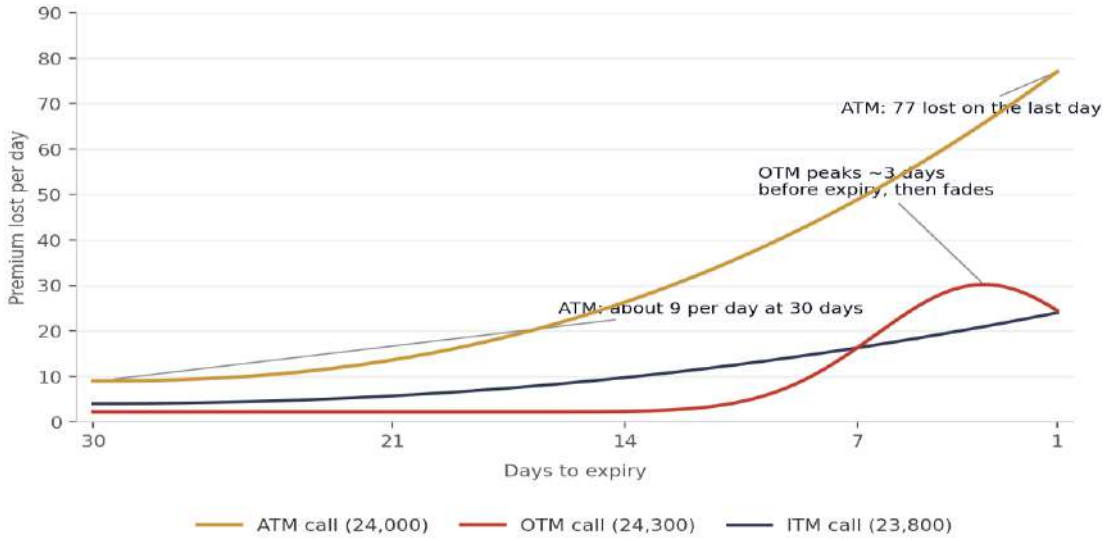


Visualising it: the dashed line is intrinsic value at expiry. Premium with 30 days and 7 days left sits above it, and the gap is time value. Illustrative model values, not live prices.

Driver	Greek	Effect on a long CE	Effect on a long PE
Underlying price rises	Delta	Premium rises	Premium falls
Time passes	Theta	Premium falls	Premium falls
Implied volatility rises	Vega	Premium rises	Premium rises
Interest rates rise	Rho	Small rise	Small fall

2. How Does Time Decay Really Work?

Decay is not a straight line. For an at-the-money option the daily loss is small a month out and grows steadily into expiry, because time value shrinks with the **square root** of the time left. An out-of-the-money option behaves differently: its daily decay rises more gently, peaks a few days before expiry, then falls away because most of the premium is already gone (in this sample the 24,300 call is worth 333 at 30 days, 93 at 7 days and 5 on the last day).

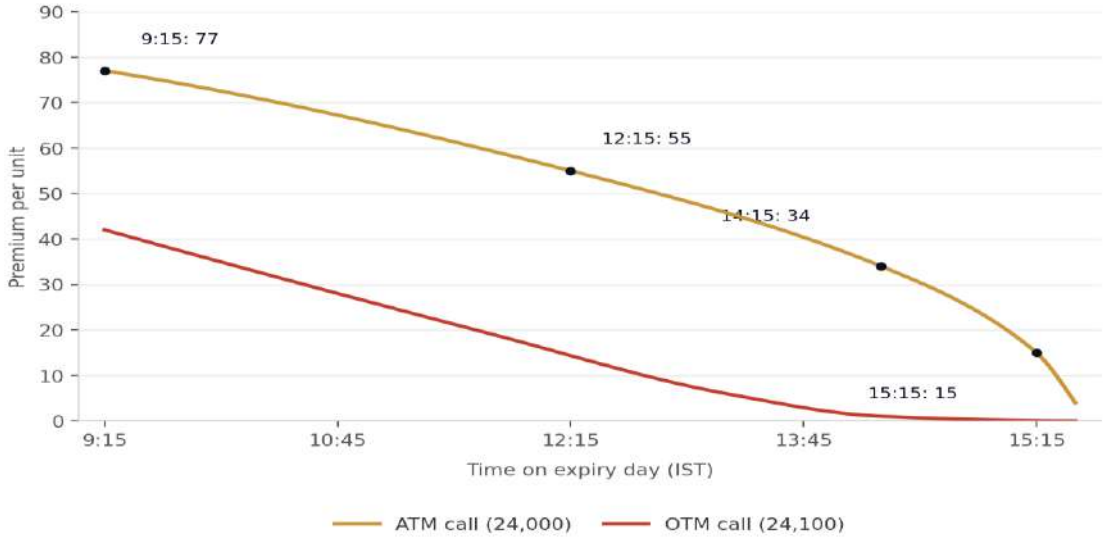


Visualising it: the at-the-money call loses about ₹9 per day at 30 days, and the daily loss keeps growing to ₹77 on the final day. The out-of-the-money call peaks about 3 days before expiry, then fades. Spot fixed at 24,000, IV 15%. Illustrative model values.

Buyers should read this as a **speed limit**: the closer to expiry, the faster the option must move in your favour just to break even. Sellers earn this decay, but they are exposed to Gamma, covered next.

3. How Does Premium Decay Through Expiry Day?

On expiry day, remaining time value is compressed into a few hours. If the underlying stays flat and IV is unchanged, the model below shows an at-the-money option falling from about 77 at 9:15 to 55 at 12:15, 34 at 14:15 and 15 at 15:15 — roughly **70% of its morning value** is lost after lunchtime.



Visualising it: the premium falls steadily and then steeply toward the close. The slightly OTM call starts lower and decays to zero sooner. Assumes spot and IV do not change; real premiums also move with price.

The Theta–Gamma Trade-off

Theta is the rent a buyer pays for Gamma, the option's ability to speed up as price moves. For an at-the-money option, the two roughly balance when the underlying moves by its **implied daily move**:

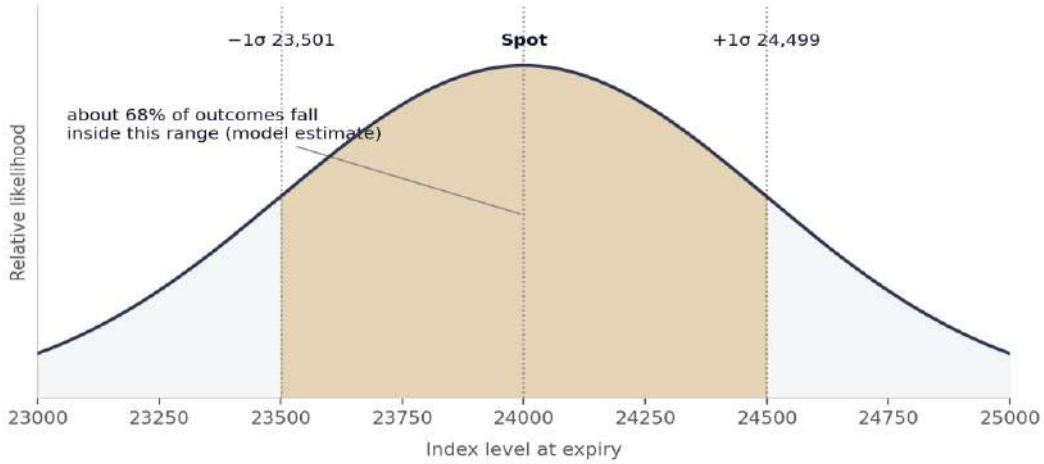
Implied daily move ≈ Spot × IV ÷ √365 = 24,000 × 0.15 ÷ 19.1 ≈ 188 points

If the underlying moves less than that in a day, an ATM buyer usually loses money on the day; if it moves more, the buyer usually gains. Sellers have the opposite position. This is a rule of thumb that ignores interest, but it makes IV concrete: you are betting the market will move more, or less, than the option price implies.

4. How Does Implied Volatility Guide Strike Selection?

IV converts into an **expected move**, the range the options market implies the underlying may cover by expiry:

Expected move (1σ) ≈ Spot × IV × √(days ÷ 365) = 24,000 × 0.15 × √(7 ÷ 365) ≈ ±499 points



Visualising it: options are priced as if index levels at expiry follow a bell curve. About 68% of outcomes are expected to fall inside ±1σ. Illustrative model values, not live prices.

Compare any strike's **breakeven distance** with this range. A call whose breakeven sits half an expected move away needs a moderate rise; one sitting beyond a full expected move needs a move the market already prices as unlikely.

Call strike	State	Premium	Delta	Breakeven	Distance (× EM)	Chance ITM
23,900	ITM	270	0.61	24,170	0.34×	60%
24,000	ATM	214	0.53	24,214	0.43×	52%
24,100	OTM	166	0.45	24,266	0.53×	44%
24,200	OTM	126	0.37	24,326	0.65×	36%
24,300	OTM	93	0.30	24,393	0.79×	29%
24,500	OTM	48	0.18	24,548	1.10×	17%

Spot 24,000, 7 days to expiry, IV 15% flat, expected move ±499. Model estimates, not live quotes.

The pattern is the point. Moving from ATM to a far OTM strike cuts the premium sharply, but it also pushes the breakeven towards a full expected move and drops the chance of finishing in the money. “Cheap” options are cheap for a reason.

5. How Do You Choose a Strike?

Match the strike to the objective, then test it against the expected move. These are common conventions for study, not recommendations:

Objective	Strike zone often used	Reasoning	Main risk
Intraday directional buying	ATM or one strike ITM	High Delta per rupee, tight spreads	Theta and Vega drag if the move stalls
Swing directional buying	Slightly ITM, next or later expiry	Lower Theta per day, more time for the view	Higher upfront premium
Cheap speculation	OTM within about 0.5 expected move	Lower cost, still a plausible target	Most expire worthless
Premium selling with defined risk	OTM near or beyond 1σ, hedged	Higher probability of keeping the premium	A gap through the strike, small reward for large risk
Around events	Consider IV first, then strike	IV usually rich before, lower after	IV crush after the event

IV Level: Cheap or Expensive?

Judge IV against the option's **own** recent range, using IV percentile or, for Nifty, India VIX. Very low IV makes buying cheaper but does not mean a move is coming. Very high IV makes selling tempting, but IV can stay high or keep rising. Also note **skew**: puts far below spot usually carry higher IV than calls at the same distance above it.

6. A Five-Step Strike Selection Workflow

1. State the view: Direction, target and timeframe, for example "Nifty to 24,300 within three days."

2. Measure the expected move: Spot × IV × √(days ÷ 365) for your holding period.

3. Test the breakeven: Strike plus premium (for a call) against your target and the expected move. If breakeven is beyond your target, the trade has no edge.

4. Check Delta, Theta and spread: Prefer a strike with a workable Delta, acceptable daily Theta and a tight bid-ask spread.

5. Size and exit: Set the maximum loss in rupees, a stop, and a time exit if the move has not arrived.

7. Common CE/PE Mistakes

1. Choosing strikes by price alone: The cheapest option has the lowest chance. Compare breakeven with the expected move.

2. Holding a losing option "for a bounce": Theta grows into expiry. A late recovery must overcome the decay first.

3. Ignoring IV before events: Buying at peak IV means paying for volatility that often collapses after.

4. Selling far OTM without a hedge: A win rate of 90% still fails if one loss is many times the size of a win.

5. Treating expiry day as free money: Gamma makes ATM options swing wildly. Both buyers and sellers can lose quickly.

6. Ignoring the bid-ask spread: Wide spreads on OTM strikes eat the edge before the trade starts.

Option pricing, IV-based strike selection and risk management are taught hands-on in our MarketEdge Pro course at Chart Code, offline in Boisar or live online anywhere in India.

8. Your Strike Selection Checklist

Run this five-point check before buying or selling any CE or PE:

- **View and timeframe —** Do you have a direction, a target and a deadline?
- **Breakeven versus expected move —** Is the breakeven inside the expected move and before your target?
- **IV level and events —** Is IV high or low against its recent range, and is an event about to change it?
- **Theta and liquidity —** Can you afford the daily decay, and is the spread tight?
- **Maximum loss and exit —** Do you know the rupee loss, the stop and the time exit?

9. Frequently Asked Questions

What do CE and PE mean in options trading?

CE stands for Call European and PE for Put European. They are the suffixes NSE uses for call and put option contracts. A CE gives the buyer the right to buy the underlying at the strike price at expiry, and a PE gives the right to sell it. In India both index and stock options are European style, so they are exercised only at expiry.

Why does my option lose value even when the market moves my way?

Three things can offset a favourable move: time decay (Theta) removes premium every day, a fall in implied volatility (Vega) shrinks it, and a low-Delta option gains only a fraction of each point the underlying moves. The move has to be large and quick enough to beat these costs.

Which strike is best for intraday option buying?

There is no universal best strike. Many buyers prefer at-the-money or slightly in-the-money strikes because they have higher Delta, tighter spreads and more liquidity, while far out-of-the-money options are cheap but need a large move. Compare the breakeven distance with the expected move before deciding.

How does option premium decay on expiry day?

Time value falls throughout the day and fastest in the final hour, roughly in proportion to the square root of the time left. At-the-money options can lose most of their value in the last two or three hours if the underlying stays flat, but a sharp move can swing them either way because Gamma is highest then.

How can implied volatility help choose a strike?

Implied volatility gives the expected move: spot × IV × square root of time left in years. Comparing a strike's breakeven with that range tells you how much of the market's expected move you need. Buyers usually prefer relatively low IV, and sellers relatively high IV, judged against the option's own recent range.

Is selling options safer than buying them?

Sellers win more often because Theta works for them, but each win is small and a single large move can produce a loss many times bigger. Sellers need margin, a hedge or a stop-loss, and sizing that survives the worst day. Neither side is safe; the risk is just shaped differently.

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