
OPTIONS TRADING
MASTERY
Trading Options for Consistent Profits
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Basic Definition

an option is a financial contract which conveys to its owner, the holder, the right, but not the obligation, to buy (“call”) or sell (“put”) a specific quantity of an underlying asset or instrument at a specified strike price on (or before) a specified date (the option’s expiry), depending on the option type

Example: a call option on 1 unit of MSFT stock expiring on Sep 17, at a strike price of $500, gives the option holder the right to buy 1 MSFT stock at $500 on Sep 17.

Options Definitions

Options are derivatives contract between two parties

They trade Over-the-counter (OTC) or on Exchanges (listed)

Options are defined by:

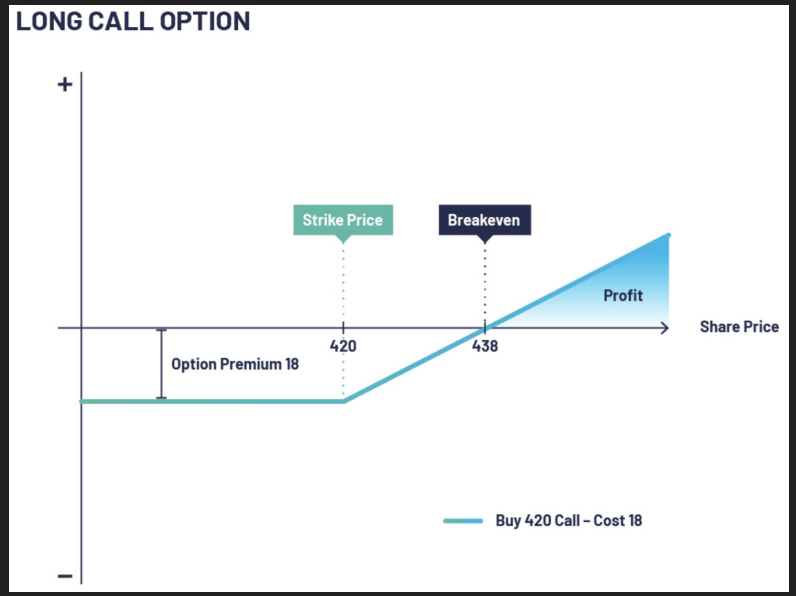
- an underlying: stock, index, future, FX, interest rate, commodity, crypto, etc
- an expiry date (and time)
- a strike
- a payoff type: linear, digital (binary)
- an exercise (assignment) style (European, American, Bermudan, Asian, etc…)

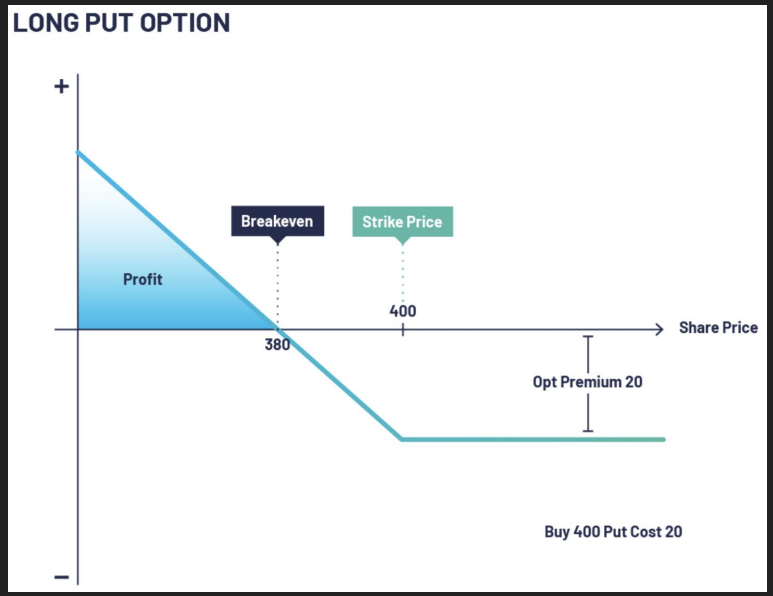
➢ We will trade listed European Vanilla options

What type of options are sports bets?

Options Building Blocks - Calls and Puts

The option's buyer pays a (determined) premium to the seller, and earns a (conditional) profit at expiry if the option is In-The-Money





Example: NFLX Options Chain (Interactive Brokers)

NFLX up 30% in 3 months. What if you had bought a 1000 call for $90 then?

How about if you sold a 1000 put for $120?

NFLX 1295.13 0.80% | Put/Call | Std Dev: 0.5 | SMART | NFLX,2NFLX | Strategy Builder

0 | JUL 25 '25 NFLX 100 21 Days W | AUG 01 '25 NFLX 100 28 Days W | AUG 08 '25 NFLX 100 35 Days W | AUG 15 '25 NFLX 100 42 Days | AUG 22 '25 NFLX 100 49 Days W | SEP 19 '25 NFLX 100 77 Days | OCT 17 '25 N 105 Days

CALLS					STRIKES	PUTS				
Bid	Ask	Last	Delta	Gamma	IV 34.8%	Bid	Ask	Last	Delta	Gamma
173.75	178.50	C169.13	0.788	0.001	1160	28.70	29.70	28.80	-0.214	0.001
160.10	164.50	C154.65	0.759	0.001	1180	33.90	34.70	34.24	-0.244	0.001
146.35	150.35	150.30	0.728	0.002	1200	39.20	40.35	40.80	-0.275	0.002
132.30	138.10	135.05	0.695	0.002	1220	45.35	47.05	48.65	-0.309	0.002
119.90	123.80	122.30	0.660	0.002	1240	52.50	54.80	C59.38	-0.344	0.002
109.05	111.95	107.90	0.625	0.002	1260	60.85	62.15	61.50	-0.381	0.002
98.85	101.10	100.24	0.587	0.002	1280	68.70	71.25	71.80	-0.419	0.002
86.95	90.20	91.30	0.550	0.002	1300	78.80	81.10	78.54	-0.458	0.002
78.15	80.05	80.50	0.512	0.002	1320	88.50	91.25	89.40	-0.497	0.002
68.25	71.10	72.52	0.474	0.002	1340	100.15	103.35	112.10	-0.537	0.002
61.00	62.50	61.00	0.437	0.002	1360	111.75	115.25	C121.84	-0.575	0.002
53.20	55.00	55.19	0.400	0.002	1380	124.75	128.40	C135.17	-0.614	0.002
46.90	48.45	48.00	0.365	0.002	1400	138.05	142.90	C148.54	-0.650	0.002
40.45	42.25	C39.15	0.330	0.002	1420	151.25	157.70	C163.42	-0.686	0.002

Definitions & Markets

An option is a financial derivative, traded either OTC, or on exchanges. This presentation considers vanilla European options traded on exchanges, on stocks, indexes, futures and cryptocurrencies.

US Exchanges

Exchange	City	Products	Market Hours (Local)	Market Hours (UTC)
Cboe Options Exchange (CBOE)	Chicago	Equity, index options (SPX, VIX)	8:30 AM – 3:15 PM (CT)	13:30 – 20:15 UTC
CME Group	Chicago	Futures options (ES, NQ, CL, GC, FX)	5:00 PM – 4:00 PM (Sun–Fri, CT)	22:00 – 21:00 UTC
NASDAQ Options Market	New York	Equity options	9:30 AM – 4:00 PM (ET)	13:30 – 20:00 UTC
NYSE American / Arca Options	New York	Stock & ETF options	9:30 AM – 4:00 PM (ET)	13:30 – 20:00 UTC
BOX	Boston	Equity options	9:30 AM – 4:00 PM (ET)	13:30 – 20:00 UTC

Definitions & Markets

EU Exchanges (ETH)

Exchange	City	Products	Market Hours (Local)	Market Hours (UTC)
Eurex	Frankfurt	DAX, STOXX, bonds	1:10 AM – 10:00 PM (CET/CEST)	00:10 – 21:00 UTC
Euronext	Paris / Amsterdam	AEX, CAC 40, equity options	9:00 AM – 5:30 PM (CET/CEST)	08:00 – 15:30 UTC
LSE / IDEM (Borsa Italiana)	Milan	FTSE MIB, equity options	9:00 AM – 5:30 PM (CET/CEST)	08:00 – 15:30 UTC
MEFF	Madrid	IBEX 35 options	9:00 AM – 5:35 PM (CET/CEST)	08:00 – 15:35 UTC

Commodities

Exchange	City	Products	Market Hours (Local)	Market Hours (UTC)
CME (NYMEX, COMEX, CBOT)	Chicago / NY	CL, GC, ZC, LE options	5:00 PM – 4:00 PM (CT)	22:00 – 21:00 UTC
ICE Futures US	New York / Atlanta	Brent, sugar, coffee	8:00 PM – 6:00 PM (ET, Sun–Fri)	00:00 – 22:00 UTC
LME	London	Base metals options	1st ring: 11:40–1:10 PM (BST)	10:40 – 12:10 UTC

Definitions & Markets

Crypto

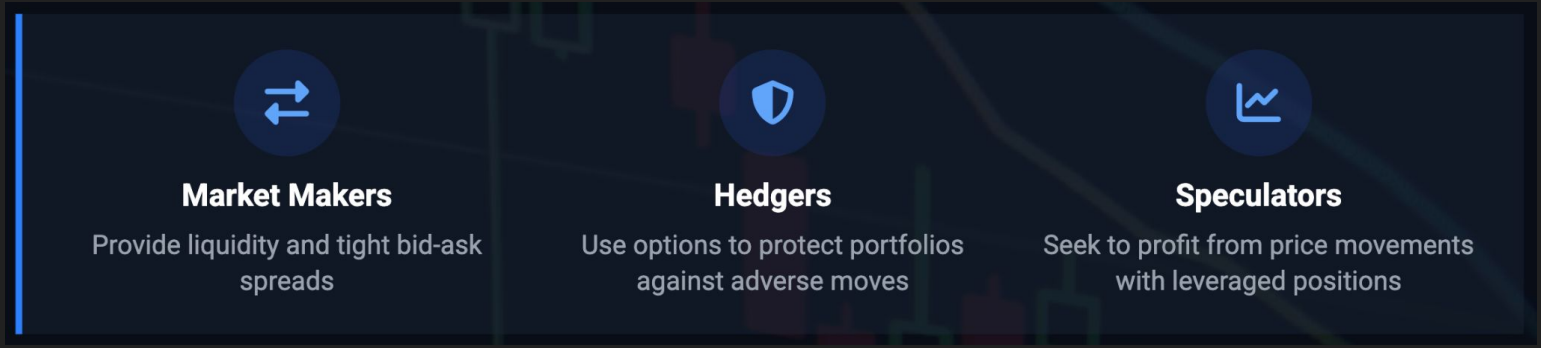
Exchange	City	Products	Market Hours (Local)	Market Hours (UTC)
CME (crypto options)	Chicago	BTC, ETH options	5:00 PM – 4:00 PM (CT)	22:00 – 21:00 UTC
LedgerX	New York	BTC, ETH (regulated)	24/6 (Sun–Fri)	24/6 (UTC)
Deribit	Panama / Netherlands (ops)	BTC, ETH	24/7	24/7 UTC
OKX / Binance / Bybit / Bit.com	Global (offshore HQs)	BTC, ETH, altcoin options	24/7	24/7 UTC

Market Access for Retail Traders

Options Brokers

Broker	Commission Structure	Per-Contract Fee	Regulatory/Clearing Fees	Notes
Robinhood	$0 commission	$0.50 per contract	ORF & OCC (~$0.04), TAF $0.00279 (capped), CAT $0.0035	Hidden bid-ask spread costs (~6.8% of trade value) ; UK identical $0.50
Interactive Brokers	Tiered: IBKR Pro / Lite	$0.25–$0.65 sliding scale based on volume & premium	ORF ~$0.026–0.028/contract; CAT ~$0.0035–0.0052; OCC $0.02–0.025	No account min; deep liquidity; rebates for adding liquidity
Deribit (crypto)	No traditional options; crypto-style	Fees vary (approx. 0.03–0.05 %)	Embedded in platform; no SEC/FINRA	For crypto-only options; not US-regulated
Other retail brokers(E*Trade, Tastytrade, Schwab, Fidelity)	$0 base commission	Usually $0.50–$0.65 + standard fees	ORF/TAF/CAT similar to above	Better execution quality; avoid hidden spread costs like Robinhood

Key Market Participants

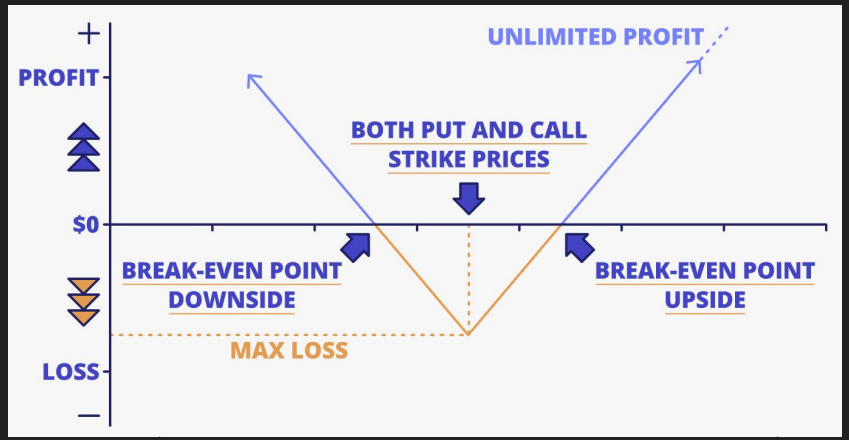


We are Market Takers, trading options for:

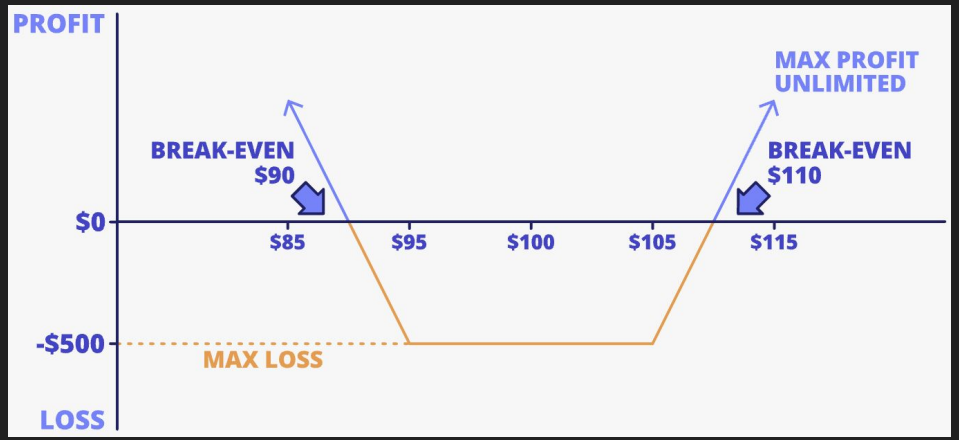
- leverage
- income generation

Option Structures - Straddles / Strangles

Straddle: Call + Put with same strike



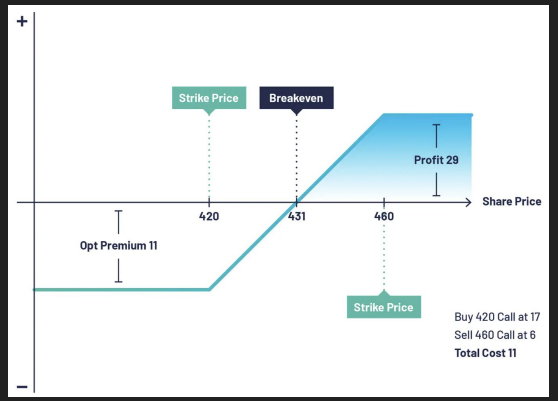
Strangle: Call + Put at different strikes



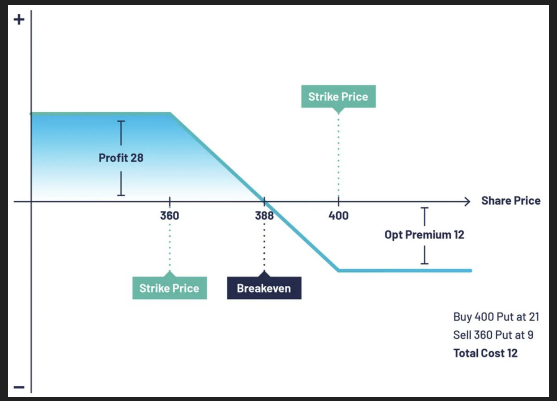
In what market situations would you trade straddles and strangles?

Option Structures - Spreads

Call Spreads: long/short Calls



Put Spreads: long/short Puts

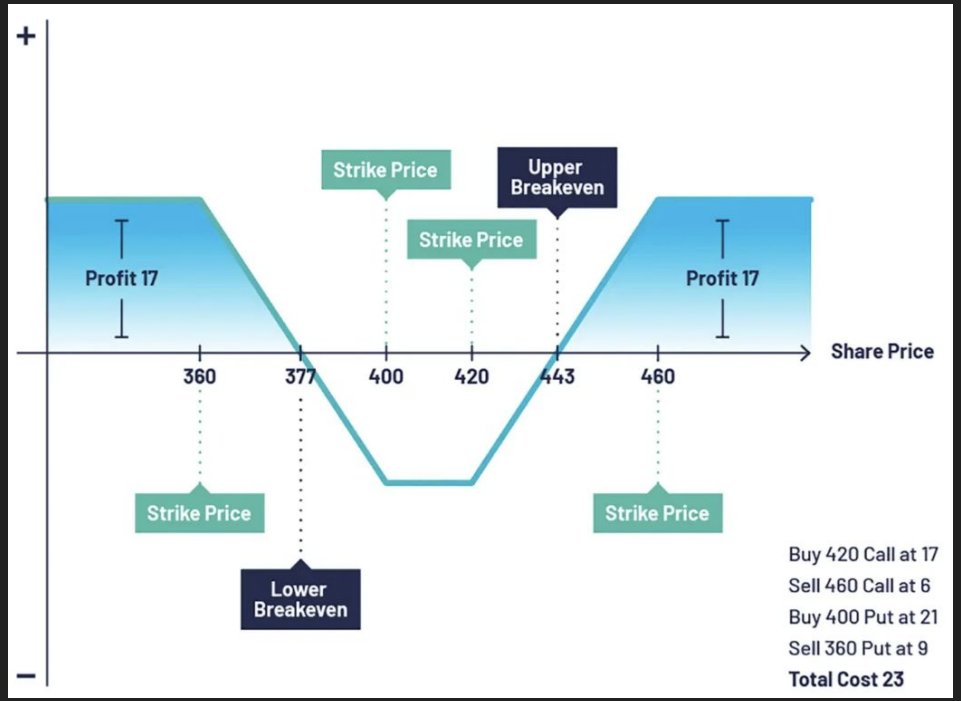


Unlike outright Calls and Puts, these structures have defined upside/downside. Why is that desirable?

Option Structures - Multi-legs

Iron Condors combine a Put Spread and a Call Spread

How many legs expire OTM / worthless?

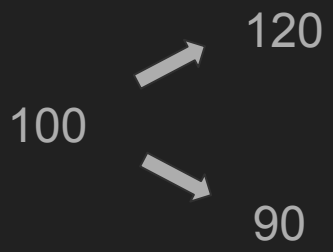


How NOT to price Options

The option’s buyer pays a premium upfront, to receive a potential payoff at expiry.

The buyer and the seller agree on a fair value for the premium.

Pricing using real-world probabilities: what if you knew exactly the terminal distribution?



The ruler sets the price using a (fair) coin flip. What’s the fair price of a 110 call?

This way of pricing leads to arbitrages, which the market eliminates. This is why there is an option market even there is a strong consensus on market direction. In this case, naive price = $5, but market price is $3.3.

The Black-Scholes Model

The model universally used in markets to price options is called the Black-Scholes formula.

The price of a call with strike K and time to expiry T-t is given by:

$$C(S_0, t) = S_0 N(d_1) - K e^{-r(T-t)} N(d_2)$$

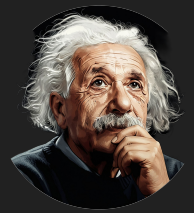
Where S0 is today's price, r is the risk-free rate, and N is the Gaussian cumulative distribution density, with mean 0 and std dev σ

$$\begin{aligned} d_1 &= \frac{\ln \frac{S_0}{K} + \left(r + \frac{\sigma^2}{2}\right)(T-t)}{\sigma\sqrt{T-t}} \\ d_2 &= d_1 - \sigma\sqrt{(T-t)} \\ &= \frac{\ln \frac{S_0}{K} + \left(r - \frac{\sigma^2}{2}\right)(T-t)}{\sigma\sqrt{T-t}} \end{aligned}$$

The underlying is assumed to follow a Geometric Brownian motion with volatility σ. Volatility is the key option pricing parameter.

Volatility - Implied vs Realised

As option sellers, we want to to screen for options with HIGH Implied Volatility (ie high price) relative to Realised



The price of an ATM put is roughly 0.4% of notional x vol x √t(years)

Example with vol = 40%: price = 2.2% for a 1w option

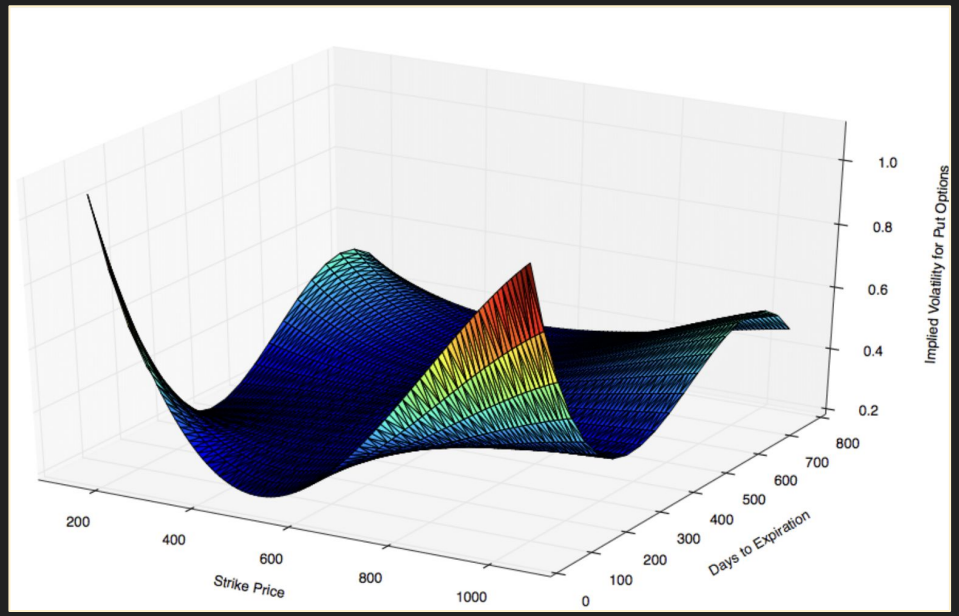
⇒ compounded over a year:

~300% return

ROI: depends on broker margin

The (Implied) Volatility Surface

We can determine an Implied Volatility for each Expiry and Strike ⇒ this results in a dynamic Volatility Surface, which points to the market's risk expectations



Sensitivities: the “Greeks”

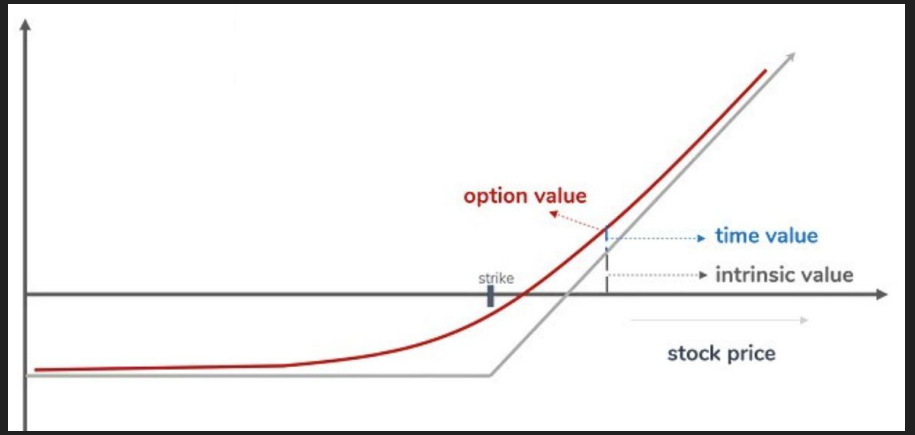
MODEL INPUTS

Stock Price: **$150.00**	Strike Price: **$155.00**
Time (years): **0.25 (3 months)**	Risk-free Rate: **3.25%**
Dividend Yield: **0.00%**	Volatility: **22.5%**

The option buyer loses Theta (time value) daily.

Intrinsic Value - Time Value

The option buyer loses Theta (time value) daily as the option value converges towards the intrinsic value (= terminal PNL).
This Theta decay is largest at the strike.



The red line shows the Black-Scholes option prices as a function of spot value. How could you read the Delta? Gamma? Vega?

Optimal Trading Strategies

Buying Options outright is either a hedging tool, or implementation of a Macro view. Rarely a stat arb systematic strategy.

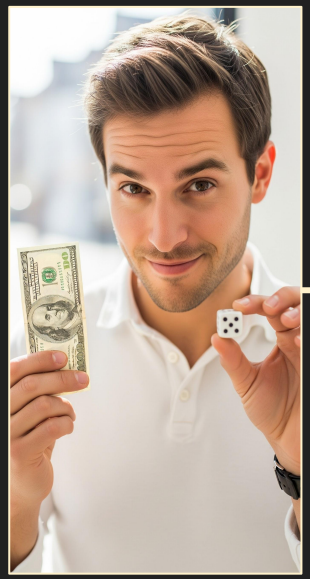
We focus on selling options for income generation (“premium collection”), with:

- optimal entry points: high price vs volatility
- low bid/offer cost
- defined downside: put spreads, call spreads, condors
- sound risk management
- proper selection of expiries and strikes

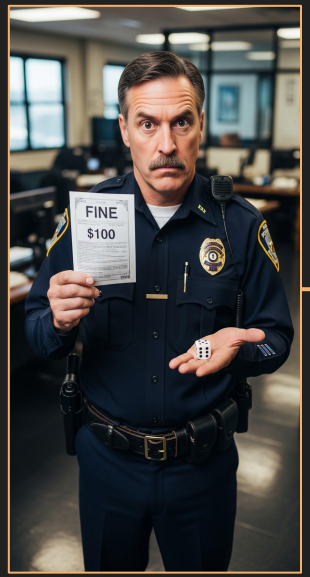
Risk Management

- Anchoring bias impacts decision-making significantly.
- Initial information acts as an anchor.
- Subsequent judgments are biased towards this anchor.
- It can lead to irrational trading decisions.

Psychological Bias - Fear of loss

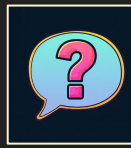


Scenario 1: you're offered $100, or chance to win $200 if you roll a 4, 5, or 6, or nothing



Scenario 2: you're fined $100, or chance to pay nothing if you roll a 4, 5, or 6, or pay $200 otherwise

Retail traders tend to hold on to losing trades, and take profit too early.



Risk managers would take the fixed gift/fine in both cases. Why?

What’s a “good” strategy?

I have a strategy that returns $10k/month net. You are allowed ONE question, and then make a decision whether to invest?

What would you ask?

- *What’s the win rate?*
- *How much capital do you invest?*
- *What signals do you use?*
- *Can I get out at any time?*
- *Other?*