# Risk Management

# Outline

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# General Remarks

- Survival is the priority
- This chapter will offer a basic framework, the rest is on you
- Focus is on being practical and accessible to noobs
    - Best-suited for discretionary traders
- Colloquially: as long as you don’t blow up, you have time to:
    - Figure out cool things that has an edge
    - Swing for the fences on really asymmetric setups
- Never risk your ability to take risk

# Invalidation

- Basic premise: you take a trade and risk money because you have an idea
  - Your idea may reach point at which it is most likely no longer correct
  - Or, at the very least, evidence suggests that the probability of the idea coming to fruition is reduced such that the risk is no longer justified
  - This is known as an invalidation
- If your idea doesn't have an invalidation, reconsider it
  - If your idea doesn't have a basis in the first place/there is no idea, back to the drawing board
- The invalidation is usually a product of the idea itself (built-in)
- Price-based
  - The idea is that X level is support, invalidation = X fails to act as support
- Time-based
  - The idea is that price should (consecutively) close above X to suggest a breakout, invalidation = closing below X
    - Candle close invalidation
  - The idea is that price usually moves X% within Y hours after Z takes place, invalidation = price not moving X% within Y time frame following Z
    - 'This thing isn't moving quickly enough for the type of setup it is' invalidation
  - The idea that the market usually does X within Y [time period/trading session], invalidation = price not doing X within Y [time period/trading session]
    - 'New York Open gonna moon it, wait, where on earth is the bid?' invalidation
- Volatility-based
  - The idea is that price usually moves X% within Y hours after Z takes place, invalidation = price moving less than X% within Y time frame following Z

# Stop Losses I

- Not all trades have an obvious/outright stop loss e.g. sometimes less clear with time-based/volatility-based examples
    - At the same time, some setups present a very clear place for a stop e.g. price-based failed breakout/breakdown setups
- Basic premise: stop loss is an order (often, but not always, a market order) to fully close a position at a certain price or loss threshold
    - Market order: guaranteed execution, fill price may be unfavourable
    - Limit order: if it 'skips' your price and the market teleports, your order will not execute
- TLDR version: stop placement should be where
    - 1) The setup obviously calls for it i.e. clear invalidation in line with the trade idea
    - 2) The idea is obviously wrong if price trades to the stop order
- 99% of complaints about 'stop hunting' or 'price wicked and reversed on me' = bad stop placement, not deliberate 'hunting'

# Stop Losses II

- As before, stop placement inextricably linked with the trade idea itself
  - bad idea = bad stop placement (most likely)
- If you don't know where to put a stop, that often means the idea itself is not defined very clearly or that the setup isn't particularly good
- Simple eye test: would I want to buy where my long gets stopped out / would I want to sell where my short gets stopped out?
  - If the answer is 'yes', consider revising!
    - Especially if you trade technicals

# Stop Losses III

- Strictness with stop usage and placement inversely correlated with the size of the move you're trying to trade
  - If you're trading low time frame, tight rotations with nearby invalidation and a lot of size, stop placement needs to be strict because the idea must be precise to be correct
  - If you're swing trading a higher time frame value area, especially if there are liquidations/an outsized move coming into the level, stop placement can be looser because trade idea is valid over a wider area
- Hard stop
  - Market order to close the full position at a certain price or loss threshold
  - Appropriate for clearly-defined setups and/or setups where entry is close to invalidation
- Soft stop
  - 'Mental' stop to start closing out the position (mix of limit and market orders) if invalidation criteria begin to be satisfied
  - Appropriate for swing trades/ideas less reliant on (short-term) precision
- Use hard stops if you're a beginner, because your ideas is probably bad
  - They'll also teach you more about stop placement by studying what the market does (if anything) after taking you out
- Read TradingRiot risk management blog post for some cool ideas on how you can incorporate both where appropriate

# Position Sizing & Risk per Trade I

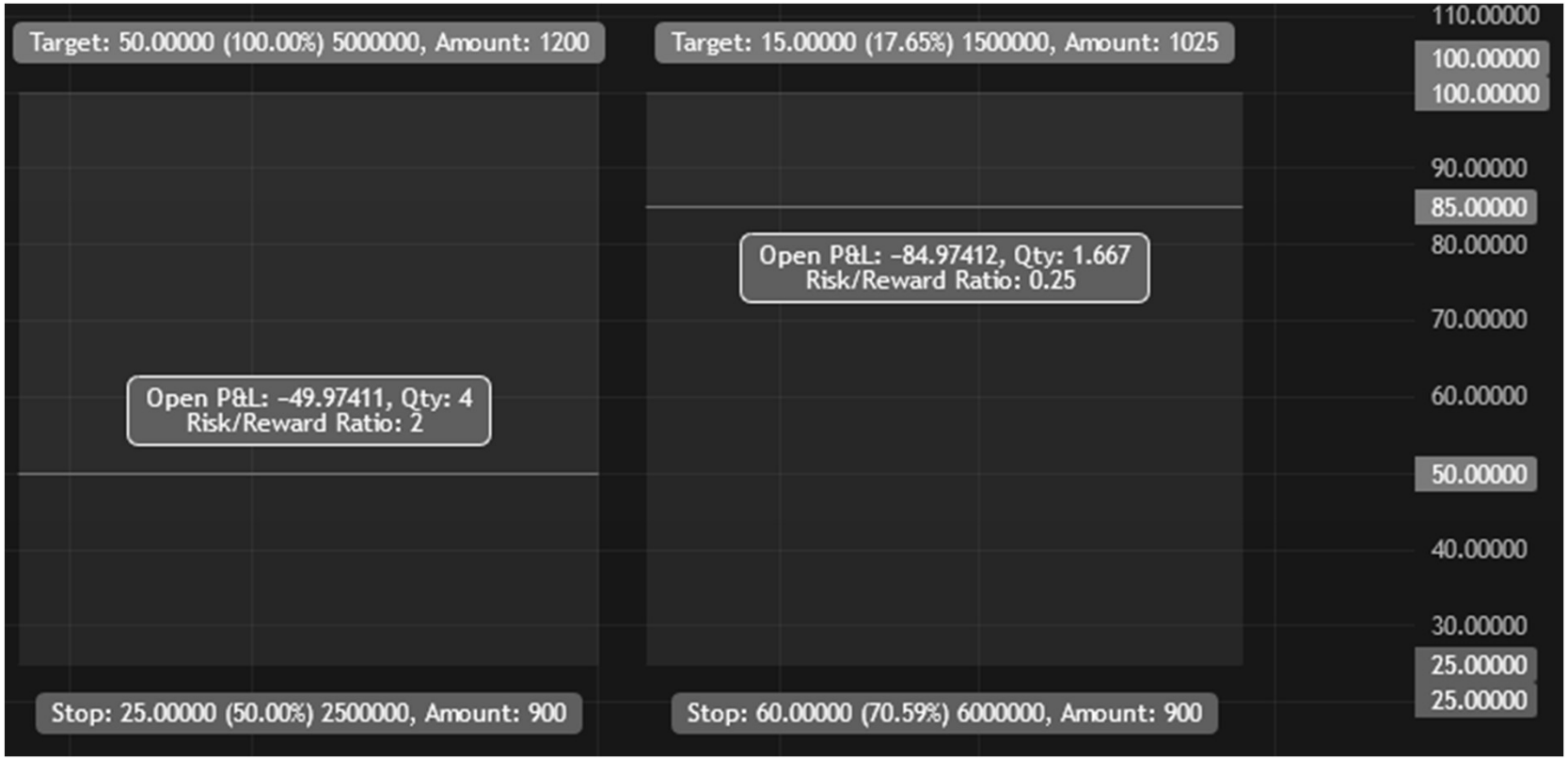
- Position size and risk per trade are two different things
  - Position size = the number of units of an instrument bought/sold
  - Risk per trade = % of portfolio/amount a trader stands to lose upon invalidation
- If you have an invalidation point, calculating position size is straightforward
- Position Size = (Portfolio x Risk %) ÷ Distance to Invalidation
  - Position size = number of contracts
  - Portfolio = total trading capital/equity
  - Risk % = percentage of your portfolio at risk (expressed as a decimal)
  - Distance to invalidation = distance between entry and invalidation (expressed as a decimal)
- For example, 100,000 USD equity, 2% risk, with invalidation 5% away
  - Position Size = (Portfolio x Risk %) ÷ Distance to Invalidation
  - Position Size = (100,000 USD x 0.02) ÷ 0.05
  - Position Size = 40,000 USD
  - Checking the maths: if 40,000 USD moves 5% and hits my stop loss = 40,000 USD x 0.05 = 2000 USD lost, which is 2% of 100,000 USD
  - this doesn't account for slippage, fees etc. (cost of trading and actual execution)

# Position Sizing & Risk per Trade II

- Fixed risk per trade is mostly  wrong, because it assumes that all setups carry the same expected value
  - Strictly speeking: 1-3% per trade to be safe, but that range is useless without context
- Two things to consider:
  - What is the expected value i.e. average outcome of this (specific) setup?
  - What are my chances of ruin if I lose on this setup repeatedly?
- Example framework:
  - Frequent setups with marginal odds = marginal bets
    - Risk less on things that happens a lot and has a marginal edge
  - Frequent setups with good odds = bigger bets
    - Risk more on thing that happens a lot and has a clear edge
  - Less frequent setups with great odds = biggest bets
    - Risk most on thing which rarely happens but offers a massive edge
- Sorry for not giving a lazy % answer, but this is the reality of discretionary trading
  - Consider individual EV/odds of specific setups
  - Consider frequency with which that setup occurs
  - Place it on the spectrum between high frequency low EV (bad, risk less/nothing) and low frequency high EV (great, risk more)
    - High frequency high EV is the golden goose and often doesn't stick around forever, pedal to the metal if you ever spot something like that
- **THE BEST EDGES DON'T LAST LONG ENOUGH**

# Dynamic Risk to Reward/Evolving R

- Basic premise: the risk to reward ratio of a trade evolves as price moves away from your entry point
- Idea is to make sure you're not being complacent in trade management
- Example:
  - Buy at 50, target at 100, stop at 25
  - You're risking 25 (50-25) for a gain of 50 (100-50)
  - Reward ÷ Risk = 50 ÷ 25 = 2R
  - Suppose the market pushes from 50 to 85 and starts to struggle. Evolving R posits that, where appropriate, you should reassess the risk to reward calculation to assess if staying in position is justified in the absence of any management.
  - With the market at 85 and your stop and target unchanged, the risk to reward of the trade has become 0.25R → you're risking 60 points to gain another 15 (at an area where the market appears to be shifting)
- The point of evolving R isn't to ensure that your trade always satisfies some arbitrary ratio
  - Instead, it's there as a wake-up call or trade management signal once the market approaches your take profit (or stop)
  - Common remedies to address poor evolved R: close position and/or move stop closer
- Works to the downside as well i.e. don't always have to wait for the market to take your stop if there's compelling evidence that probabilities have shifted against you
- Best guide here will be your trade journal i.e. looking at whether, on average, your trade management decisions improve your results or if you're better off relying on set-and-forget
  - Beginners are usually better-served learning via conservative targets and set-and-forget
  - Early on, overmanaging much more likely than undermanaging
  - The emphasis should be on making sure trades that are near completion don't round trip and come back to stop you out.


Target: 50.00000 (100.00%) 5000000, Amount: 1200
Target: 15.00000 (17.65%) 1500000, Amount: 1025
Open P&L: -84.97412, Qty: 1.667
Risk/Reward Ratio: 0.25
Open P&L: -49.97411, Qty: 4
Risk/Reward Ratio: 2
Stop: 25.00000 (50.00%) 2500000, Amount: 900
Stop: 60.00000 (70.59%) 6000000, Amount: 900
110.00000
100.00000
100.00000
90.00000
85.00000
80.00000
70.00000
60.00000
50.00000
40.00000
30.00000
25.00000
25.00000

# Streaks

- Streaks: consecutive wins/losses
- Streaks can offer information about changes in the market regime and/or the EV of a specific setup
- Dumb things to avoid
    - Risking more when losing to make it all back
    - Risking more on losing setups while other setups are doing well
    - Risking less when winning for not being greedy
    - Risking less on winning setups following a losing streak on a different setup
    - Ditching a profitable setup after a small string of losses
- Smart things to consider
    - Which setups are working well/no longer working? E.g. trending setups start losing while ranging setups start printing = change in conditions/regime
    - If something is working well, trade it more frequently and/or with bigger size
    - If something is not working well, trade it less and/or with smaller size and/or be more selective with it
    - If a novel, short-term edge stops printing, bin it → they usually don't come back
    - Short-term streaks don't necessarily mean a setup is trash/fantastic
        - Variance
        - Incorrectly identifying setups
        - Shift in conditions
        - Bad thing happens
- Be nimble, some variance is expected; try to think about what the streak is telling you
    - Sometimes it's nothing, but other times you'll get clues as to a shift in conditions when staple setups stop printing
    - Impossible to do any of this without a journal

# Break Even Stops and Partial Profits I

- "Stop to break even, free trade now." → Wrong
- "Took some off here, can never go broke taking profit!" → Wrong
- Most break even stop and partial profit decisions are made to achieve psychological comfort, not because those decisions improve trade outcomes in the long run
    - It's not the market's job to make you feel cozy, seek therapy instead
- Break even stops
    - Trade management decisions should never be arbitrary and should almost always be derived (to some extent) from the trade idea itself
    - There's probably nothing special about your exact entry and the specific unrealised PnL derived therefrom → not a good basis for making trade management decisions
    - It's not a 'free trade' → the cost is sacrificing the potential gain from your trade idea by not letting it play out properly!
    - For technical traders:
        - Break even stop on a long = I am bearish in the same place that I bought previously
        - Break even stop on a short = I am bullish in the same place that I sold previously
        - Sometimes that will be true and reasonable, but more often than not, it's just a coping mechanism and an attempt to avoid uncertainty in the market
            - E.g. can be justifiable where revisiting entry invalidates the idea/makes the setup very likely to fail

# Break Even Stops and Partial Profits II

- Similar reasoning regarding partial profits: can be justified in certain situations e.g. evolving R examples, but arbitrarily closing trades early based on non-market factors like PnL alone will likely harm you in the long run
    - Good trading is process-oriented, not being a slave to the short-term red or green on your screen
- Cost to break even stops: in the long run, you probably perform better by letting your setup logic play out
- Cost to taking profit early: in the long run, you probably perform better by letting your setup logic play out
- Even if this^ is **not** true, if you manage trades according to a system or somewhat objective criteria, you can at least review that data and optimise your trade management
    - Randomly closing trades does not give you any useful or actionable information
- Best case: closing early isn't harming you in the long run but you can't optimise it because the decision itself is arbitrary in most cases
- Worst/base case: closing early is harming you in the long run, and the decision-making process is too arbitrary and opaque to be helpful
- You have to commit to being process oriented
    - Process should be based on certain re-adjustable principles

# Leverage Trading

- Basic premise: can put on positions with a fraction of the notional amount as collateral
  - E.g. In spot markets, if you want to buy 10,000 USD worth of Coin A, you need 10,000 USD.
  - If you're trading leveraged products and trying to put on the same position, you can have a fraction of 10,000 USD, post it as collateral (margin), and 'borrow' the remainder from the exchange.
    - E.g. With 5,000 USD in my account, I can put on a 10,000 USD position by levering my 5,000 USD 2x.
- One of the primary risks of leverage trading is getting liquidated
  - Liquidation = your position is forcibly closed by the exchange when you run out of maintenance margin (collateral required to maintain the position)
  - Liquidation can apply to your specific position (isolated margin) or your trading account as a whole (cross/portfolio margin)
- Cranking up the leverage slider does not increase/decrease your PnL, your PnL is dictated by your position size. Leverage affects how collateralised you are for that position size.
  - E.g. Long 10,000 contracts of linear ALT/USD futures at 2x leverage + market gains 5% = 5% gain.
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  - Leverage = collateralisation
    - Low leverage = more margin (collateral) = liquidation further away from price
    - High leverage = less margin (collateral) = liquidation closer to price
- In theory, leverage is cool for: keeping less money on exchange, trading coins that you don't own in spot
- Evil tool
  - Do not do that ever!

# Crypto-Specific Considerations

- Correlations
  - When Bitcoin and Ethereum nuke, the rest of the market tends to nuke with them → strong positive correlation to the downside
  - You might think you're diversified with 5-6 different positions in different 'sectors', but if your big picture read is wrong, you'll likely lose on all those positions
  - So be careful when 'stacking' risk
    - Better to have high conviction trades (often just 1-2) rather than trying to bet on direction with a basket of coins that will, on average, behave quite similarly anyway
- Counterparty risk and exchange downtime
  - Sometimes exchanges go down and/or crash during volatility
  - Consider keeping coins spread across different credible exchanges
- Security
  - Unique emails and non-SMS 2FA for all sign-ups
  - Do not reuse passwords
  - Keep coins on well-secured, credible centralised exchange or on a hardware wallet without the backup being somewhere easily accessible (like your desktop)
  - Favourite/bookmark all the main websites you use to avoid phishing
  - Never share your seed phrases with anyone or input them anywhere
  - Be aware of impersonators