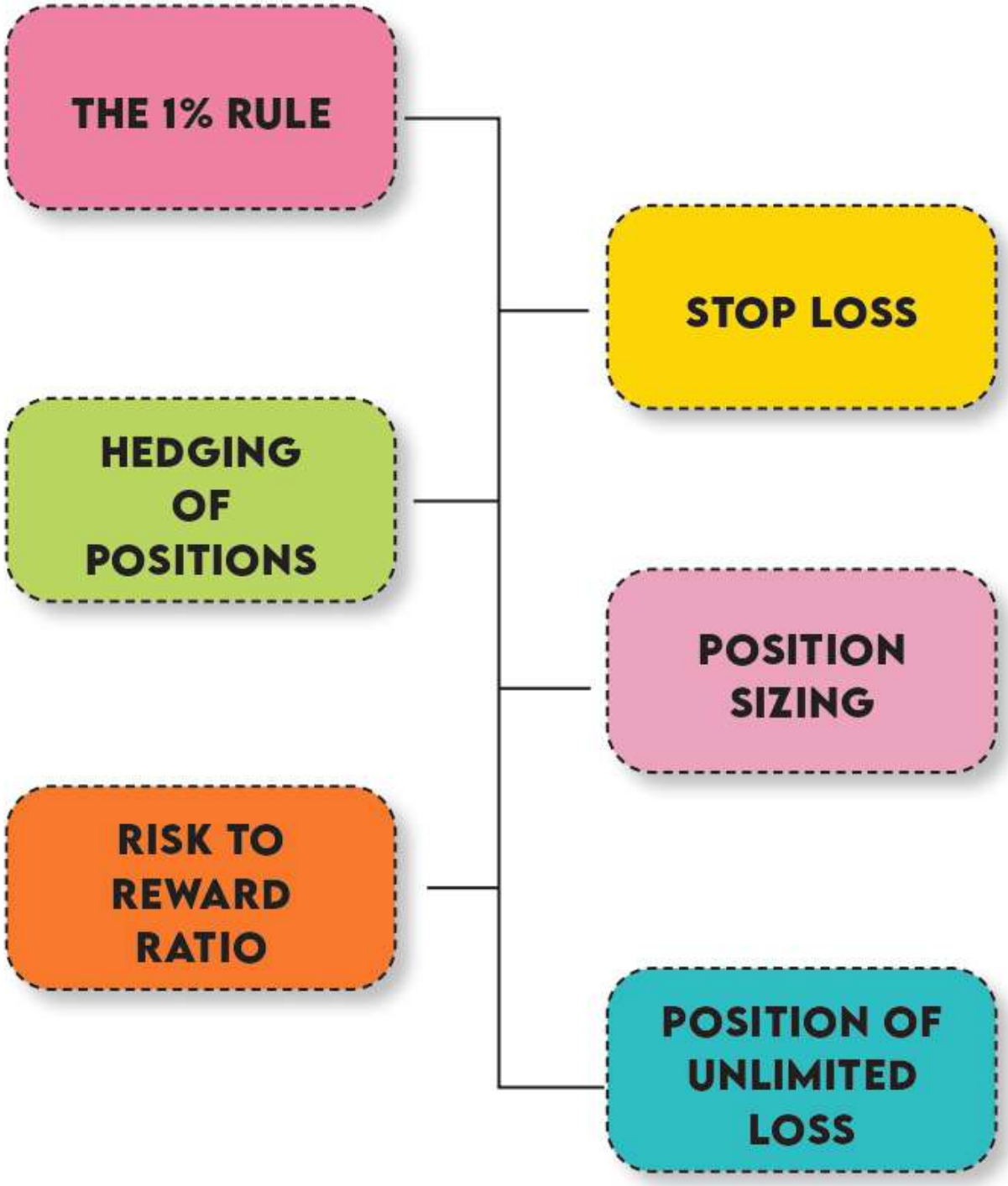
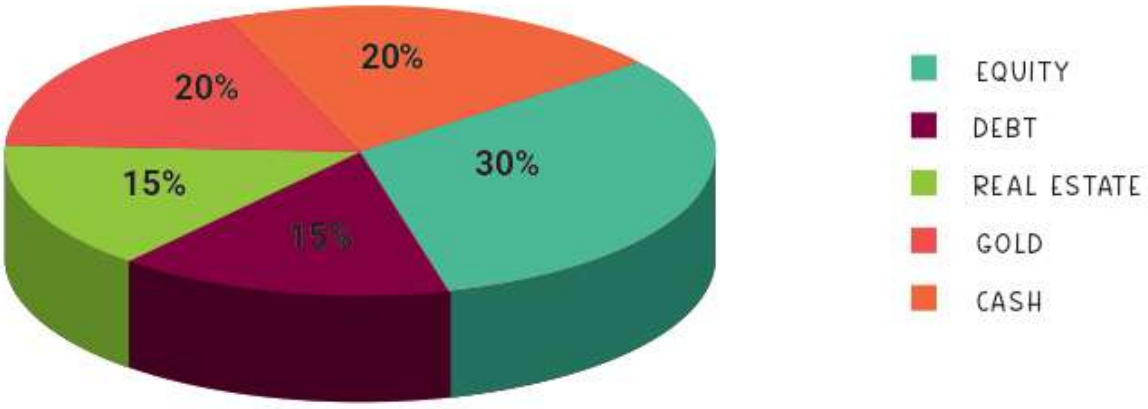
12.2 RISK MANGEMENT TECHNIQUES

To have an effective risk management system is an integral part of trading futures and options market. There is no right way to manage risks. It can be done in extremely creative ways. Some of the common ones are :



THE 1% RULE

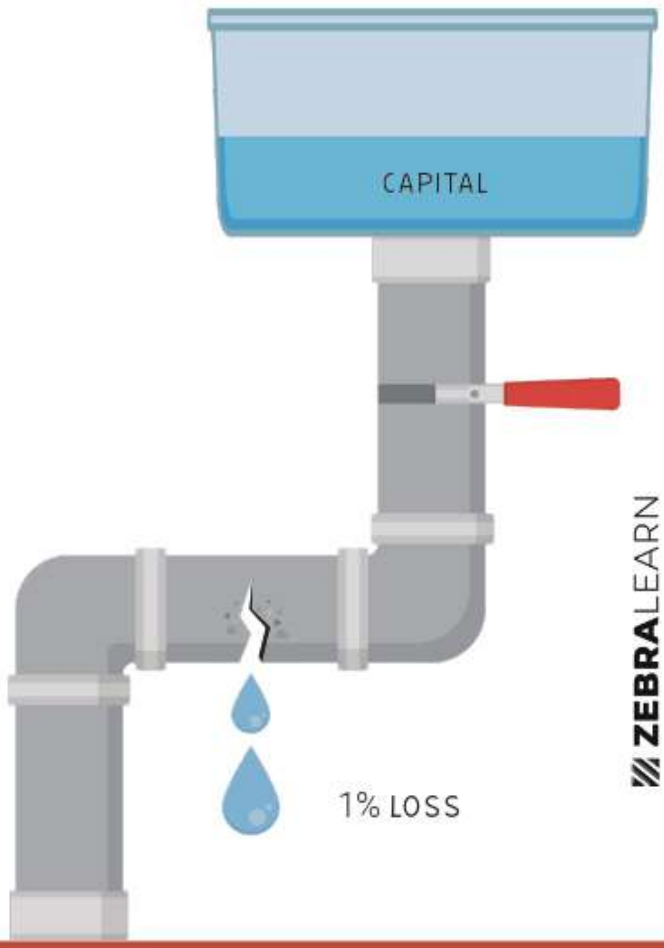


CAPITAL ALLOCATION

The 1% rule basically talks about appropriate capital allocation. It answers the question of how much to invest in a trade?1% rule says that you should never be in a position where you lose more than 1% of the portfolio on a single trade. This is something that will reduce the size of winners too but ensure survival in the market.

For instance,
if you have a capital of ₹10,000, you must not lose more than ₹100 in a single trade. This is a strategy to ensure survival by trading in limited quantities.
With this rule in place, we will have to consistently lose on a large number of trades to for our portfolio to be wiped out. This ensures survival in the market.

For example, lets say our portfolio is ₹10,000. We buy a call option. We will never spend more than ₹100 for the entire lot of the option if we plan to hold it till maturity.
Similarly, when we short a futures contract, we may want to buy a call option in such a way that maximum losses are limited to ₹100. At times, this 1% bar can be raised to 2% per trade by a trader. The bottom line is that we don't risk survival under any circumstances.



The only drawback here however is that this rule is difficult to follow with small portfolios and leverage makes it difficult too. So, for instance, you are a future on a share of ₹100 for a margin of ₹15. This means that 1% change in price will be roughly 6.67% change in our portfolio.As per the 1% rule, you should manage risks in such a way that risks are limited to 0.16% of the portfolio so that after leverage, we do not lose more than 1%. Thus, we have to extremely careful when working with leverage.

Also, with small portfolios, 1 lot may be more than their portfolio. So following the 1% rule becomes impossible there.

Not Losing more than 1% of the trading capital in a single trade is an excellent method to ensure long term survival.

₹1,00,000 Trading capital → 100 Consecutive loss making trades → Get wiped out of the market

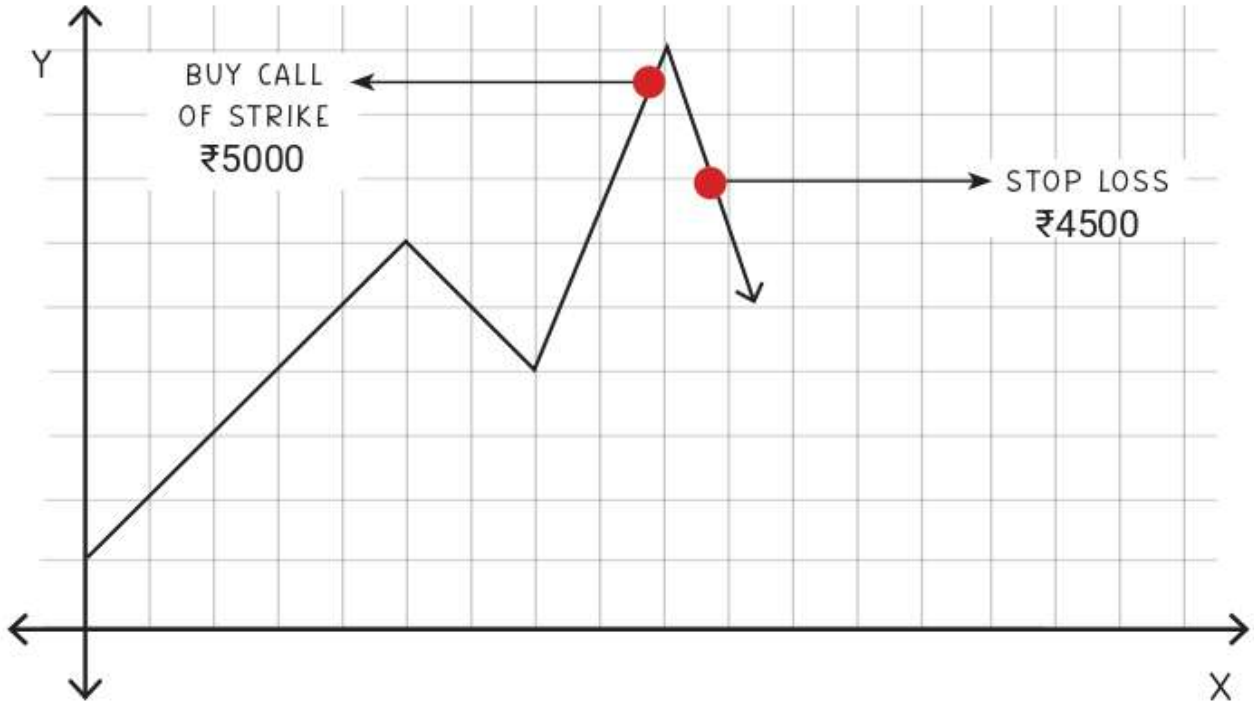
STOP LOSS

Before entering a trade, the maximum loss that you are willing to take is where you have your stop loss. Stop loss is a risk management tool that helps you exit a trade. As it hits the maximum loss mark where we set the stop loss, it exits the trade and stops our losses there.

For instance, we buy

ONE WAY TO SET A STOP LOSS IS BASED ON THE UNDERLYING ASSET PRICE. FOR INSTANCE, A STOP LOSS WHEN UNDERLYING ASSET PRICE FALLS BELOW ₹4500.

ALERNTIVELY, YOU CAN HAVE MORE DIRECT STOP LOSS ON THE CALL OPTION PREMIUM AMOUNT. IF THE PRICE FALLS BELOW ₹15 FOR EXAMPLE.



The stop loss then will exit the position as price hit the stop loss. Advance orders are often placed with the broker that will sell the position as soon as the stop loss is hit. Stop losses help us limit the maximum losses that we can have in a position.

We may set it based on our percentage of loss also. For example, if we are investing ₹100 and we don't want to have a loss of more than 5%, so our stop loss will be at ₹95. This stop loss needs to be defined before entering the trade.

There are two major drawbacks with Stop losses:

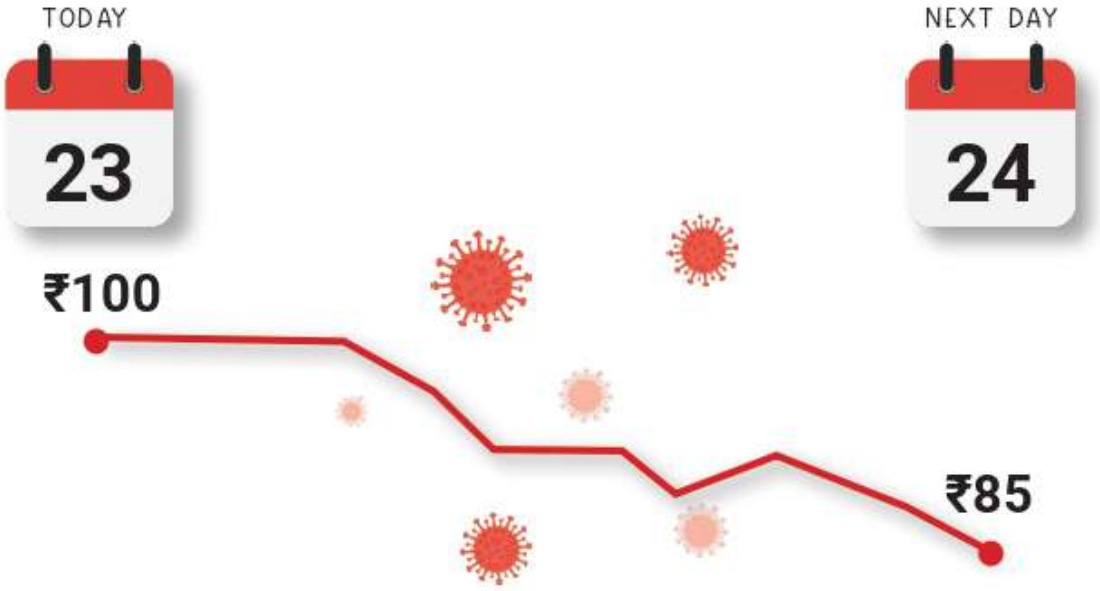
THERE ARE TEMPORARY FALSE MOVEMENTS IN THE MARKET WHERE WE MAY LOSE MONEY DESPITE BEING RIGHT.

For instance, the price may be fluctuating from ₹100 to ₹98, ₹97, and for a few seconds come to ₹95 but then get back to ₹100.

In such a scenario, the broker as directed will exit the trade as it touches ₹95 mark and we will have losses. We incurred a loss despite being right due to false movements in the market.

ANOTHER DRAWBACK OF STOP LOSS IS THAT IT DOES NOT WORK WITH OVERNIGHT RISK.

So, let's say the market closed at ₹100 today. Overnight there was some news that negatively affected the share. In this case, the markets would open the next day at a lowered price, say ₹85.



Our stop loss in such scenario would not work. It will not work while the markets are close. Such gaps are then borne by us as losses above our maximum loss bar.

The above are the two major limitations with stop losses. Other than this, it is a very widely used and popular risk management method.

HEDGING OF POSITIONS

To solve the issues faced with stop loss, hedging can be seen as an effective choice. Hedging refers to entering an opposite trade to our current trade to minimize our risk and losses.

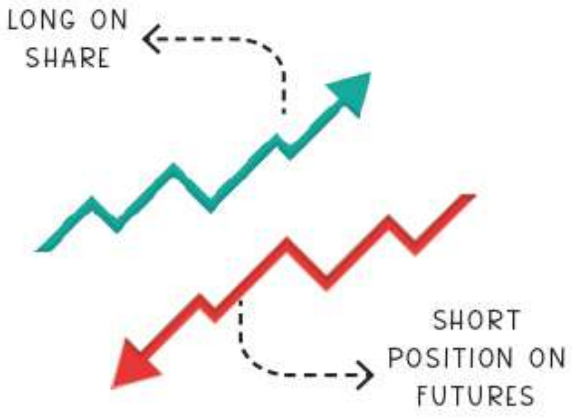
Meaning, if we buy a share then to protect ourselves from losses, we may even take a short position on the same using derivatives. This may add to our cost of a trade and therefore affect profitability but we do it for survival.

For instance, we buy a share at ₹1000 (original trade). To hedge ourselves, we may also buy a put option at a strike price of say ₹950 at a premium of ₹10 (opposite trade).

This opposite trade or position on the underlying asset will protect us against losses. Now, even if there is an overnight change, our position is hedged.

Our **maximum loss** will remain fixed. This is protective put strategy that we discussed in option strategies chapter.

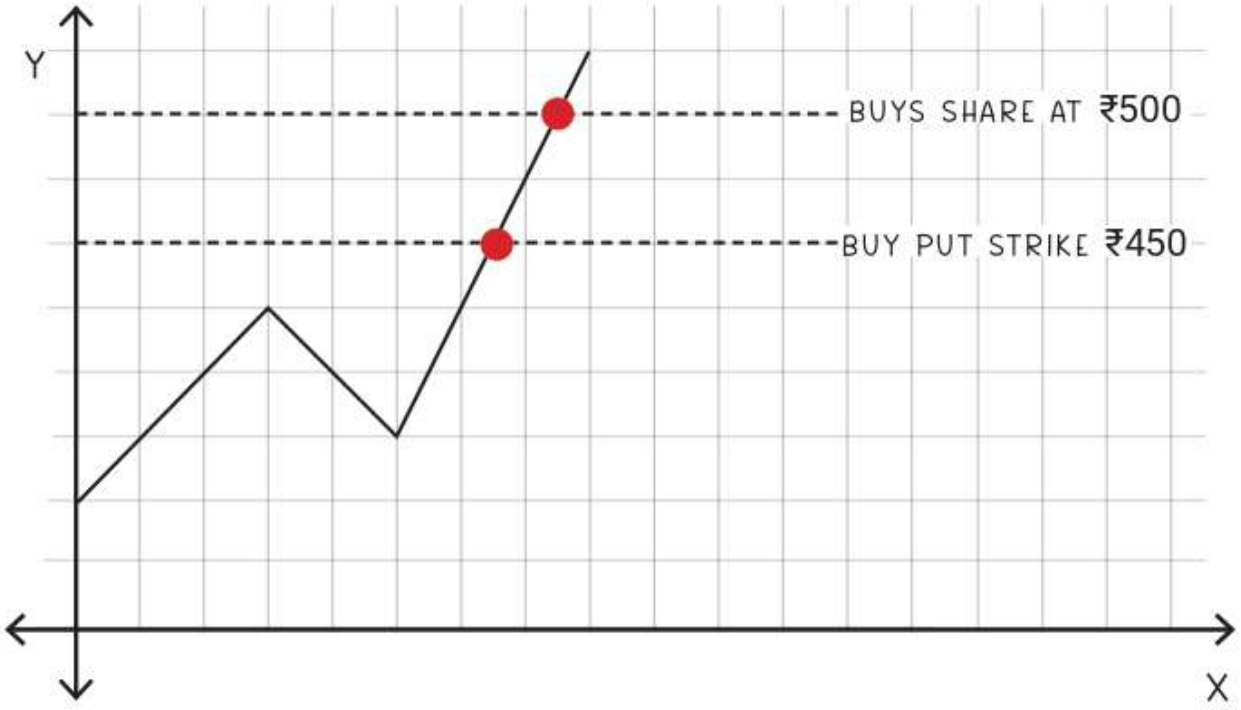
Ultimately, with hedging we protected against the downsides. We may even be long on a share and hedge ourselves by taking a short position with the futures. So, till the time to expiry of the futures, we will stay protected.



FOR THAT MATTER, EVEN THE FALSE MOVES RISK IS ADDRESSED WITH THIS RISK MANAGEMENT TOOL. WITH HEDGING YOU ALSO KNOW EXACTLY HOW MUCH YOUR MAXIMUM LOSS CAN BE. WE HAVE DEFINED MAXIMUM LOSS POTENTIAL WHEN IT COMES TO USING DERIVATIVE CONTRACTS.

We may buy a put option. Our maximum loss here will be the premium, while we still enjoy the upside of the share that we own.

For example, a man buys a share with current market price of ₹500 and at the same time buys a put option at strike ₹450.



IF PRICE ⇧	✓ SHARES WILL BE PROFITABLE
IF PRICE ⇩	✓ PUT OPTION WILL BE EXERCISED

The challenge with hedging is that it is too **EXPENSIVE**. The cost of an hedge is too high for us to keep our portfolio too hedged. We can only have hedges during uncertain times which are hard to predict. However, if done well, hedging is one of the most important methods of risk management.

POSITION SIZING

Position sizing basically tells us about how much to trade or invest. We should not over trade, we should not under trade. We should not over invest or under invest.

POSITION SIZING BASICALLY MEANS QUANTITY, THE SIZE OF A PARTICULAR POSITION IN A PORTFOLIO.

For instance, if the portfolio is of ₹1 crore, then how much should be the value in each trade - ₹5lacs, ₹10 lakhs or ₹20 lacs. This is where position sizing comes into the picture.

We should ideally not be using the entire capital that we have for trading purposes. We should be using a part of the entire portfolio for trading even if we are a full time trader and use the rest as back up capital in case we face losses. We do not want to in a position where we may face survival risks in the market and properly sizing positions and trade size ensures that we survive in the market.We need to ascertain, what should be our trade size with respect to the loss that we are willing to take.

For instance,

We might have a capital of ₹10 lakhs.

And for a particular trade we may be expecting that if we put our ₹2 lakhs, it may go up to ₹3 lakhs or come down to ₹1 lakh.

While the risk that we are willing to take on portfolio is 5% (say). In this case, we would invest only 1 lakh from our capital.

This is because, even if the ₹1 lakh goes down 50% to ₹50,000, our overall loss will not be more than 5%. This is how we know how much to trade or invest with.

Had we traded with ₹5,00,000, our return could have gone up or down by ₹2.5 lakhs. In such a scenario, our portfolio could potentially go down by 25%. Having 2-3 trades like this will make us sit with an exceptionally low capital in a brief period. This will take our trading journey back by many years.

Similarly, if we trade with a very low amount, say ₹1000. Even if this ₹1000 becomes ₹2000, it will not have any significant impact on our overall portfolio return. Therefore, sizing the trade correctly is very important.

However, such calculations may be relatively easy to do with hypothetical examples but in real scenarios it is difficult. We must work with approximations and rough numbers therefore. We are aiming to have a systematic approach to risk taking while we trade using this risk management tool.

OVER TRADING OR UNDER TRADING, ARE BOTH BAD FOR US. WE WANT TO ENSURE THAT OVERALL, THE PORTFOLIO GROWS AND LOSSES STAY MINIMAL.

RISK TO REWARD RATIO

RISK TO REWARD RATIO IS A MEASURE OF RISK UNDERTAKEN FOR A SPECIFIC REWARD TARGET IN A SPECIFIC PERIOD OF TIME.

$$\text{RISK REWARD RATIO} = \frac{\text{POTENTIAL RISK OF LOSS IN A TRADE}}{\text{EXPECTED RETURN}}$$

Let's say, we have a trade in which the potential loss (downside) is of ₹150 and expected upside is of ₹50. The risk to reward ratio here will be of 3:1. Similarly, if the potential loss is of ₹50 and expected profits are of ₹150, the ratio will be 1 : 3.

In markets, we don't get the potential loss or expected return like this. We assume them based on our experience and understanding of the markets. Traders also do backtesting for this.

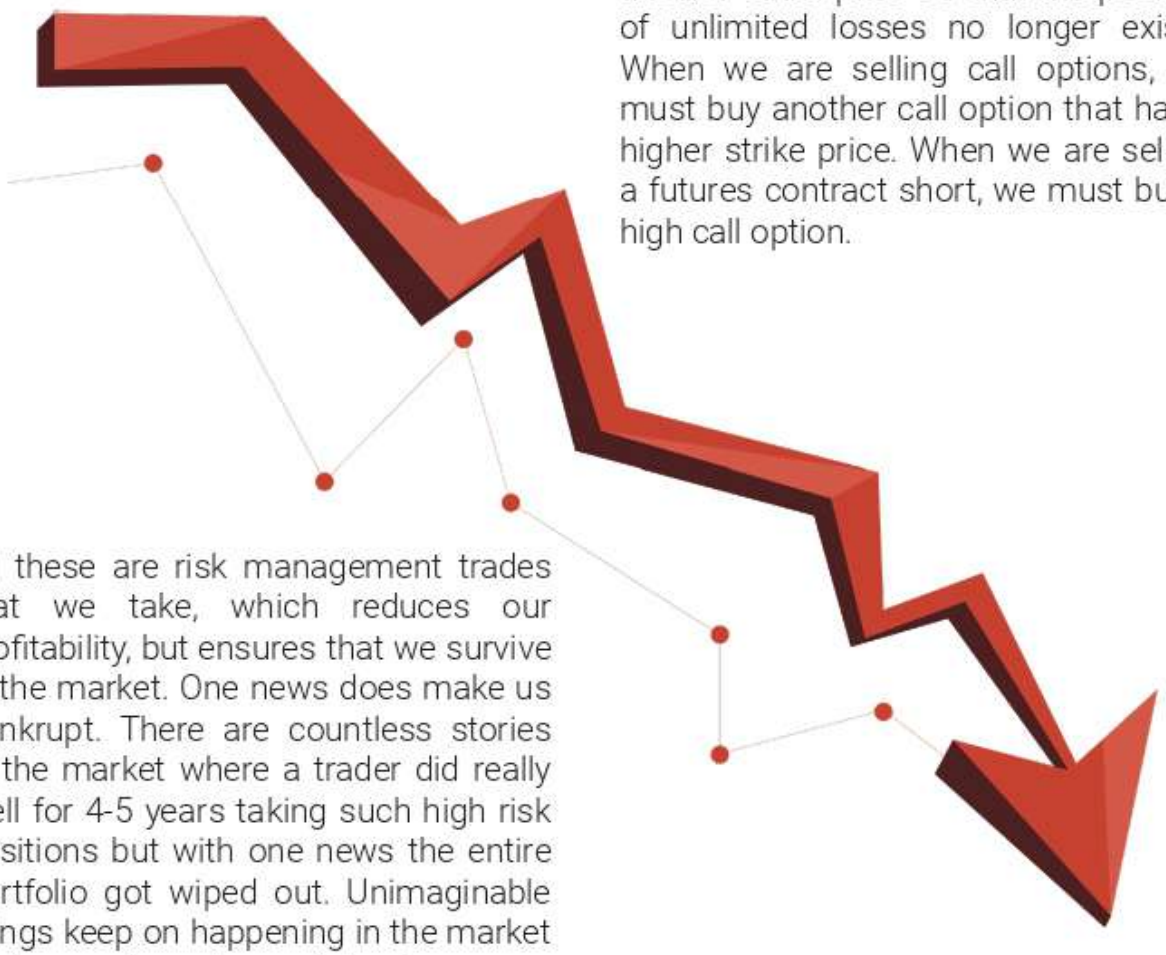
For instance, let's say today is 1st January 2011. To back test, we go to 1st January 2012 and start applying the strategy that we are using currently. Then write down the trades and calculate, average profit : average loss. Secondly, calculate how many of the trades were profitable or how many times we made profits : how many times we made losses. Say we have average losses ₹300 and average profits ₹500. This means historically we had a 3 : 5 ratio.
Similarly, if while investing we expect that our ₹100 might come down by ₹20 and expected profit is also of ₹20, the ratio will be 1 : 1.

An ideal risk to reward ratio should be 1 : 3. But even with a 1 : 1 ratio if the winning rate is 75%, the overall profitability with the trade is good to have. Risk to reward ratio helps us analyse that we are not taking out sized risks to generate average returns in the market. It forces us to think in terms of risks and how much risk are we taking in each trade. It forces discipline in a trader.

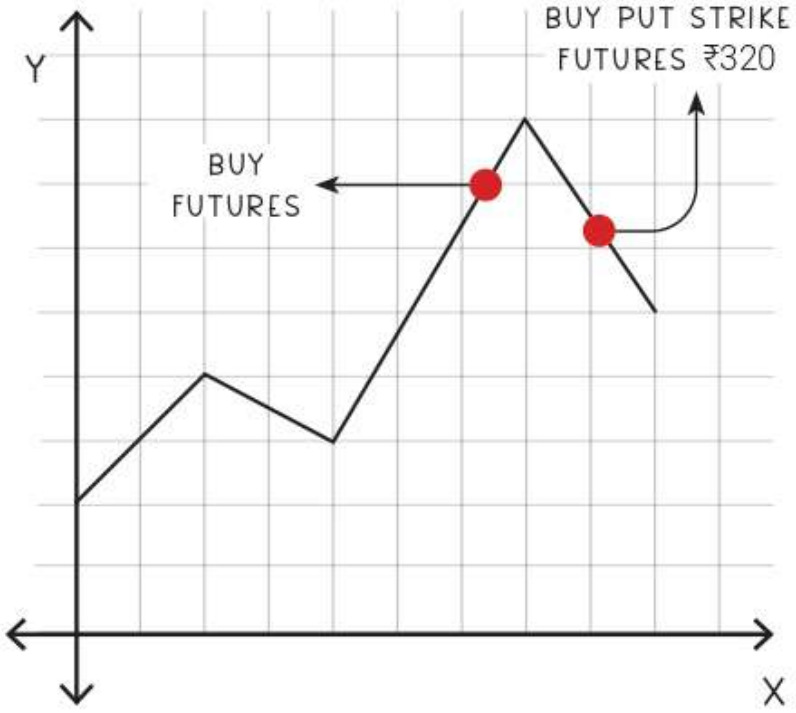
POSITION OF UNLIMITED LOSS

Position of Unlimited losses is whenever in derivatives we have a position where there is no limit to how much loss we might have to pay. For example, when we short a Futures contract, or when sell options, there is no limit how much we may incur as loss. These are called Positions of unlimited losses. As a risk management practice, these are to be strictly avoided. Whenever, you are selling options that must be accompanied by buying another option at different strike price to limit losses.

If we sell a put option, it must be accompanied by buying a put option at a lower strike price so that the position of unlimited losses no longer exists. When we are selling call options, we must buy another call option that has a higher strike price. When we are selling a futures contract short, we must buy a high call option.



All these are risk management trades that we take, which reduces our profitability, but ensures that we survive in the market. One news does make us bankrupt. There are countless stories in the market where a trader did really well for 4-5 years taking such high risk positions but with one news the entire portfolio got wiped out. Unimaginable things keep on happening in the market and you do not want to lose your portfolio to that.



For example:

Suppose we have sold a futures contract at ₹350. he contract is leveraged 6 times.

To protect ourself from unlimited losses, we may take an opposite position here. Say we buy a call option at strike price of ₹380. So any price increase beyond ₹380 will be compensated by the call option. This way we have converted our unlimited loss position to limited loss position as the losses from short selling would be compensated by profits from the call option.