THE EXPIRY TREASURE HUNT

The word 'Treasure' invokes in us wonder and fascination when we encounter it in an adventure novel or movie. Most of us, at some point, have imagined possessing a treasure of our very own; I know I have. I have tried to be honest and sensitive while choosing the title of this article, as the FNO expiry is like treasure in many ways. The pressing need for the adventurer is to acquire the skills of Indiana Jones and know the secret code to the cave like Alibaba. As a treasure hunter, you must also be ready for a warlike situation, and the following things are mandatory – a map to treasure, arsenal & armour, the secret code, a strong mind, and some luck. The difference between a treasure and wealth is that the treasure is already there and one has to just gather it, while wealth has to be built over time.

THE LUCK

Let's begin with the shiniest object on the list. Smart traders may not believe in luck, but great traders do. We have to attain a state of getting systematically lucky by rigging the odds in our favour. From the outside, it might seem like we have lady luck by our side, but, from the inside, it would merely be a process, i.e. accounting for each and every signal of the system. Choosing the correct path and then being consistent is the stairway to heaven of luck. One can easily increase their probability of being lucky by putting themselves in an environment full of opportunities, and good systems pave this path. If the market is range-bound, you have a system. If the market is trending, you have another system. If the market is chopping around, you have something for that. Luck is not mastered by worshipping the Gods; it is done by worshipping the process. Casinos are always lucky, making fortunes every night.

THE MINDSET

It is probably the most talked about but the least delved-in topic in the trading fraternity. I covered this topic in the previous issue of this magazine. However, as an extension, I would like to share a few more findings here. One should always have a philosophical and spiritual inclination to visualize beyond the normal. In Indian Mythology, Arjun was perhaps the greatest warrior, but it was only when he internalized the philosophy of birth, death, and karma that he could fight his kin and emerge victorious. You must have noticed that athletes or actors

who are not very educated sometimes sound like philosophers during their interviews. This is probably because they are enlightened about the truth of life. Without this trait, one can be good but cannot be great. And surviving in this market requires greatness. Without understanding the philosophy, learning is not sustainable in practical life. While I write this article, I have no hesitation in admitting that I am also still striving for the same and nowhere closer to it. The second important thing I have understood is that to sustain oneself in this market one should follow the process of dumbing down a little bit. Knowing less is the new smart, especially when you are flooded with information. Furthermore, we all know that discipline is the most essential aspect of the mindset as the market mysteriously identifies the disciplined ones and rewards them with enormous profits.

THE MAP

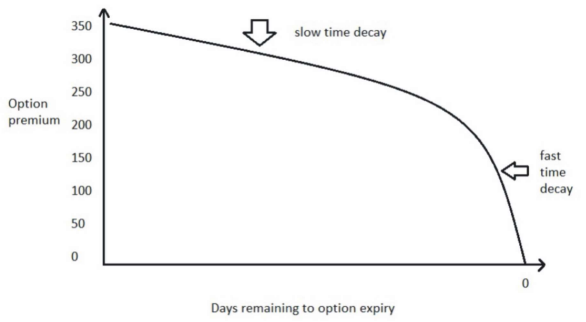
The map is required to understand the correct path to the treasure, the incorrect paths leading to swamps, and the obstacles that might come along the journey. So, let's begin to understand the anatomy of the expiry treasure. It is apparent that I will be discussing the options and weekly expiries here:

- **The Greeks-** In options trading, the 'Greeks' are but inevitable. I have seen people completely ignore the theory of the Greeks, even when they are fully engaged in options trading. I am not from that camp. A chauffeur and an automobile engineer both spend their entire lives with automobiles but are valued differently. The difference is that the engineer knows the backend functioning of an automobile. In a nutshell, there are five Greeks involved in options valuation. A detailed reading of the explanation and theory is a must afterward. I would also recommend reading about the Black–Scholes model.

1. **Delta-** Delta measures how much an option's price can be expected to move for every 1 point change in the underlying price. For example, a Delta of 0.40 means the option's price will theoretically move 0.40 for a change of every 1 point in the underlying price. So, in short, the delta is the rate of change.
2. **Gamma-** The rate of change of the rate of change, i.e. delta is not constant. Simply put, if delta is the speed, then gamma is the acceleration.
3. **Theta-** Theta tells you how much the price of an option should decrease per day as the option approaches expiration if all other factors remain the same. It is called time decay.
4. **Vega-** While Vega is not an actual Greek letter, it conveys how much an option's price should move when the volatility of the underlying increases or decreases.
5. **Rho-** Rho measures the price sensitivity of the options with respect to the prevailing interest rates and is of the least importance because the interest rates are not subject to frequent change.

- **The Math-** Let us understand why expiry day is so important. Whether you are an option buyer or a seller, expiry holds an inherent edge for both types of traders. Say you are an option buyer, for whom the most dangerous thing is theta. On expiry, however, if you go for a slightly in-the-money strike, you will get it at a low premium with an almost negligible amount of theta. You can also buy an ATM option if you have high conviction without even placing a stop loss as the premium value is too low, and there is not much to lose in the position. You can generate a strong edge by skipping the placement of stop loss. The biggest issue with SL is that sometimes the price resumes in our anticipated direction after it gets triggered. However, this is only advisable when you have a high degree of conviction in your foreseen movement. On the other hand, edge by selling options on expiry is quite well known. The theta decay is at its peak on an expiry.

  Please refer to the illustration given below-



Let's understand this with an example. If you sell a weekly option straddle (pair of ATM call and put) of Nifty on a Friday, it will be around 200 Rs. but if you sell a weekly option straddle on a Thursday, it will be around 90. So, the decay of the first six days is almost equal to the potential decay that will happen on the expiry day.

The third edge resides in the Gamma movement. On expiry day, gamma sensitivity increases many fold as a minor fast-paced move on any side can add a lot of intrinsic value to an OTM strike by converting it to an ITM strike as the premiums are pretty low. This is why some analysts give 'Hero or Zero' calls on an expiry day. Multiplying your option's value by 20x or 50x is a practical possibility if done with proper risk management.

- **Other Expiry edge**s- Impact cost is at its minimum as liquidity is highest on this day, and taxes are at a minimum because of the low premiums. There are other edges too, but the laundry list is for another day.

The ARSENAL & ARMOUR

- **Taming the three Greek horses**- Unlike the lone Trojan horse, three of the five Greek ones are relevant from the expiry trading point of view - delta, gamma, and theta. If we can tame these three horses, we are close to achieving our aim. Mentioned below are a few tools for the same :

- **The Arsenal**- To win over expiries, one needs different tools to tackle different situations. These tools are mainly the types of strikes or pairs of options with different characteristics.

1. **ATM / Straddle**- An ATM is a strike at a given time with the highest value of theta. If we divide the equal probability of market movement into three directions, i.e., up, down, or stagnant (sideways), there is a 66.66% chance that selling an ATM option would end up giving us money. If we sell a straddle, it is a 100% probability that one has to expire worthless (zero) out of the call and put option. This weapon effectively tames the third Greek, i.e., theta.

2. **OTM / Strangle**- The features of OTM and strangle are quite similar to that of ATM / straddle. The only difference is that if you are selling an OTM, the premium collected will be lesser, but this comes with higher chances of ending up in profits than the ATM. OTMs can also be used to tame gamma as the effect of gamma moves is highest in the deep OTMs by being on the buying side. Therefore, OTMs are effective in capturing theta as well as gamma.

3. **ITM / Guts (inverted strangle)**- We have already discussed using ITMs to take advantage of delta moves on an expiry day. The other method of effectively using the ITMs is capturing delta and theta simultaneously. For example, you sell a slightly ITM PE option of Banknifty of strike 40000 @180Rs when the spot is trading at 39900. In this case, the spot has to move just 100 points above, and you will be able to capture 180 points from a move of 100 points. If the spot doesn't move at all, you'll be able to take home at least 80 points even then. In this way, you are capturing the trend and the time decay both at the same time.

While these three weapons might look similar in nature, they possess entirely different characteristics when deployed.

- **The Armour**- This process discussed above is more challenging than it seems. The market is out there to surprise us, to hurl dragons (unimaginable circumstances) at us. This is where our armour (the defence shield) will come into the picture. The best armour we have is the stop loss and you can use this in several different ways. We have to imagine all kinds of market movements that can happen throughout the day and imagine all the probabilities in which our strategies can go wrong. Once we have listed out all the possibilities, we have to find out how to combat those situations with the help of the map. In the options world, this is known as firefighting. There are multiple ways to firefight which you can find over the internet and in books. Always remember that firefighting is most effective on the expiry days and can easily be avoided on other days. Once we have considered every scenario, a thorough analysis of the data is required to ensure that our biggest enemy, the drawdown, is well under our control.

THE SECRET CODE

- **A System**- To give you an example of how to structure your thought process, I am sharing an extremely simple vanilla expiry system here. Sell a Banknifty straddle at any point in time, keep a Stop Loss of 80% above the cost on each leg, and carry the position till the closing of the market. For example, sell an ATM CE @150 Rs. and an ATM PE @150 Rs. Now place a stop loss of 270 Rs. on each leg. Now imagine the probable outcomes of this strategy.

  Outcome #1- Neither stop-loss gets hit at the market's closing. In this case, if you have understood the features of our weapons, you can quickly realize that you will end up in profit.

  Outcome #2- One stop-loss gets hit, and we carry the remaining leg, which now becomes an OTM and eventually expires worthless; this will also undoubtedly give us some money.

  Outcome #3- One of the stop-loss gets hit, we carry the remaining leg, and the market reverses, but at the closing time, the SL of the other leg still didn't trigger but expires as an ITM, either leaving us at breakeven or with minuscule losses.

  Outcome #4- Stop-loss of the first leg got triggered, and then the market turned to the opposite side and took away the SL of the second leg as well, causing reasonable damage to us.

  This was a very simple strategy which has an edge. I have used only one weapon and one armour variant in this strategy, so you can imagine the kind of variants you can form. The other stats of the strategy have to be analyzed deeply to improvise this and manage the drawdowns. In this case, you will also have to think about an antidote for the scenarios which have gone against us. Try to visualize as farther as possible. For instance, in this example price has to move sharply in both opposite directions to make you lose money. This is a massive piece of information you can take advantage of. You can plan to deploy a strategy that shall profit from strong trends. If the theta capture is in a compromising situation, you are ready to take advantage of the delta move that will happen. This is how uncorrelated strategies are deployed to minimize the drawdowns.

- **The Time Machine**- On an expiry day, different time slots have their own characteristics. Moreover, these characteristics are not formed by random movements but are backed by historical data analysis. This can be proven via thorough back-testing. Here, I am sharing a few of my findings. These are just observations as per the laws of probability and should not be considered as rules. The maximum theta decay on an expiry day are in the 1st, 4th and the last hour (the last hour has the largest theta decay, almost equal to the first and fourth combined). To make a sound trading plan, these edges must be well identified through testing. Delta movements are lowest in the third and fourth hour of the day. Gamma movements usually occur during the last two hours of the expiry day, mostly when the vast majority of strikes are worthless and the time value is almost finished.

- **The Sorcery Maze**- By now, you must have been given enough food for thought on the approach towards an expiry day. The salient art here is to create a maze or Chakravyuh of several strategies with the help of different weapons and defense mechanisms so that the expiry outcome takes place almost entirely inside the periphery of your logical sorcery. These can be uncorrelated strategies set in different weight ratios compiled into one bucket of systems. Always remember, to beat a particular strategy, the market has to give away something in other strategies. The market can not beat all uncorrelated strategies simultaneously. Like some people trade 2 lots of theta capturing strategies for every 1 lot deployed on delta capturing strategy. This doesn't mean that you can create something in which losses won't happen but something in which most factors are accounted for and the risks are well within acceptable statistical parameters.

- **The Final shot**- Once you are sure that your back testing and execution is fool-proof, it is time for you to boost returns by taking advantage of leverage. You can buy a hedge in case of selling options and considerably boost your returns. Say your final system is giving you a return of 15% at a drawdown of 7%, then through leverage, 27% can easily be achieved with 16% MDD (these figures are normalized). Imagine trading for just 52 days a year (if one expiry is considered in a week) in a year and making 25-30% returns.

FINAL WORDS

My mentors have taught me not to wear the 'Genius Hat', which is the biggest hurdle in following the process and being a consistently successful trader. Catching the outliers is just a process and not luck. Try to remove impulsiveness, guesswork, speculation, and fallacies from your process. All of us would be better off in most spheres if that advice is followed. Currently, there are four days of options expiries in a week in Indian markets, Tuesday- Finnifty, Wednesday- Nifty Midcap, Thursday- Banknifty and Nifty, and Friday- Currency. Now imagine the kind of money lying within your reach, hiding behind the dragons in your mind. Success is waiting on the doorstep, waiting for you to be more accepting of the required changes to your process and to devote yourself to the philosophy by which this market is driven.

About the Author

Sannidhya Agrawal is a systematic algo Trader who has traded in almost every liquid asset class in India. He has first-hand Trading experience in the financial markets of more than 12 years. He is an internationally rated chess player as well. Sannidhya is an NSE-certified technical and derivatives analyst. Apart from Trading, he is also a co-founder in a Publishing House, an Edtech Company, and an IT LLP. He is also a member of the Advanced InvesTrade Forum.