ALGORITHMIC TRADING - AN ELIXIR FOR THE BUSY TRADER?

*Chaya Bagrecha   **Sagara R M   ***Pranit Oswal

BACKGROUND

Tiya is a novice investor in the stock market. She has gained a lot of interest in trading in the last few months. The lockdown helped her to monitor the stock prices throughout the day and trade in the stocks and indices of her choice. She made reasonable profit from her transactions during the lockdown period. She is upset today that she has to report to office in person, and she would not be able to trade in real time during the market hours because she would be busy there. It is in this context that she speaks to her friend Abhay who suggests her of algo trading. She had never heard about this concept. Abhay explains the modalities, the opportunities and challenges of algo trading to her.

CONCEPTUAL INSIGHTS

She now understands that it is a process where a trader can plan his/her own strategy based on price, volume, timing, moving averages and other indicators to trade or invest, and automate that into an algorithm. This algorithm can help in executing the buy/sell orders without being in front of the screen during the market hours. Instead, this automated process of trading makes use of complex formulae, combined with mathematical models and human oversight, to make decisions to buy or sell financial securities on an exchange.

She also understands that such methods can have their own advantages and disadvantages. To start with, the most significant advantages of algo trading is the speed it offers. They have the capability to analyze a variety of parameters and technical indicators in a split second and execute the trade immediately which in turn helps the traders to capture the price movements as soon as they occur. Another significant benefit of algo trading is that there is minimum human intervention which removes the possibility of errors drastically. It also enables the execution of large volumes of trade in a short period of time which helps to cut down the transaction cost. The automation of the trading process helps to reduce the rethinking of the decision-making process. Hence, making minimization of human emotions one of the most important advantages of algo trading. Algorithmic trading also helps in buying and selling large number of shares within a fraction of a second. As a result, the overall volume and liquidity of the market get increased and the trading process becomes more streamlined and systematic. To increase the efficiency, the new algorithms created are first back

Chaya Bagrecha
Professor in Finance
Faculty of Management,
JAIN (Deemed to be)
University, Bangalore

Sagara R M
Third semester
MBA (Finance)
JAIN (Deemed to be)
University, Bangalore

Pranit Oswal
Third semester
MBA
(Business Analytics)
JAIN (Deemed to be)
University, Bangalore

tested using historical data which helps to test whether the strategy will work or not. Algo trading deals with the volatility of the market and helps the traders remain consistent and disciplined in spite of the ups and downs. The rationality of the strategy remains upheld and does not get derailed due to the effect of impulses like fear and greed. Overall, with the help of algo trading, the entire process of asset selection, order execution, and entry and exit becomes systematic.

However, it is not free of challenges and risks. The investor has to be mindful of the disadvantages of algo trading. There is an immense amount of dependency on technology, which might get hampered due to the smallest reason such as a poor internet connection. This fails the entire ideology of algo trading. The automation of the entire process restricts the humans from making any last moment changes to improvise on their strategy. Once the program runs in a direction that the trader does not want to, there is no way to stop it and control the losses. Algo Trading comes with the requirement for traders to develop an algorithm. Not all traders are technically skilled which makes it difficult for general public to use it. There's always a possibility of the developed strategies going wrong. The fully automated process comes with a disadvantage bearing various expenses. The traders need to be equipped with high-end resources, must have an access to the server and must develop the algorithms using costly technology. Another big expense is the cost of data feeds that help in formulating intraday strategies. Another disadvantage of algo trading is that it is subject to a lot of regulations. The regulatory bodies of different countries have not been able to reach a consensus on whether algo trading should be legal or not. The formulation of

algorithms and strategies is a continuous process and it consists of regular monitoring, improvement, and reinventing. They require constant changes in the strategies to keep it running smoothly.

Trading platforms

After giving Tiya a brief of all the pros and cons of algo trading, he explains to her that there are various strategies which can be used based on her own experience as an investor and trader in the market. Another way could also be buying strategies from experts. Abhay tells her about the different platforms which are useful for algo trading, and which help the small and individual investors to come up with their own strategies. From Zerodha Streak, ODIN Diet, and Omnesys Nest to Presto ATS, Smart API, and AlgoTrader OEMS are the few platforms which provides various features to its users to develop and run their algorithm. Trading view is another platform which has in built programs, which can be modified to suit the requirements of the trader.

DESCRIPTION OF AN ALGORITHMIC STRATEGY- "ALWAYS–IN-TRADE"

Tiya requests Abhay to explain how an algorithm works, based on a simple back strategy. Abhay comes out with one example strategy which is offered by one of the algo strategy makers "TRADETRON" for the option market. This strategy is called as "ALWAYS–IN-TRADE STRATEGY". It takes position in ITM (In The Money) condition of a Nifty Option market at the current market direction.

It captures long trends in the market and 20-30 trades take place in the month on an average. Adopting this strategy has a higher risk as there is no stop loss in this to limit the investors' loss. This strategy is a long option strategy and

it is positional in nature. Always-in-trade strategy is a stop and reverse strategy which means that the trader can reverse his/her position, for e.g., (if a trader is in a long-trade and he/she wants to exit long trade and enter short trade at the same price at that time we use stop and reverse order).

The capital requirements in order to execute this particular strategy are minimal. An initial investment of ₹25k – ₹35k for one lot at the start of a monthly expiry is required and 20% of the profit is paid to the platform/strategy provider for the utilization of their resources. In any trading, exit strategy plays a very prominent role in the market. This strategy will take exit trade only on the trend reversal as per the condition which means this strategy will exit only when the maximum drawdown reaches to ₹31k (fixed by the strategist/trader) on 1 lot. The output of this algo strategy is presented in the next pages. Chart 1 shows the profit or loss from the strategy-Always In Trade for the period 28th August 2022 15th April 2021. The chart shows daily profit or loss and cumulative profit or loss for the said period. As can be seen from the chart, the investor by staying in the trade, can earn huge profits. The summary of monthly trade output, monthly profit and losses, drawdown and other details are presented in Table 1. The strategy gives an indication to exit when the dropdown is above 31000. Aggressive investors can continue if their expectation from the future price movements is positive.
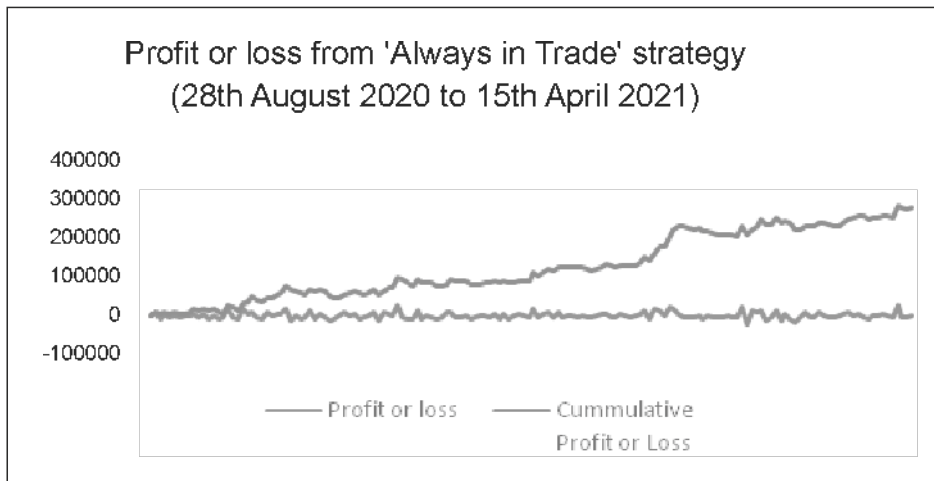

Figure 1-Summary of Profit or loss during the study period

Table 1-Monthly Trade Output

Month	PNL	Max 1 day profit	Max 1 day loss	Max Drawdown	Trading Days
Aug-20	13440	10965	2475	0	2
Sep-20	23610	18484	-7028	13151	22
Oct-20	20340	18244	-12829	**31448**	21
Nov-20	31313	27000	-11198	24375	20
Dec-20	38468	21529	-9326	19196	22
Jan-21	53160	19519	-9581	10496	20
Feb-21	69964	24398	**-21386**	24345	20
Mar-21	7725	16073	-15660	**31965**	22
Apr-21	23310	**28950**	-6743	7583	10

CONCLUSION:

Finally, Abhay mentions that there are many other strategies that are available in market, or can be developed based on the trader's understanding of the condition of the market. Learning algorithmic trading is not an overnight task. It needs a lot of learning and practice to be successful in the market in the long run. Incomplete knowledge of the challenges and risks will lead to erosion of initial investment. Hence, it is better to have good understanding of market and algorithms before starting the algorithmic trading journey.

REFERENCES

Advantages of trading in nifty future and nifty option find reason to trade. (2018, August 18). OurNifty.com. https://ournifty.com/trading-benefits-nifty-futures-nifty-options.html

Algorithmic trading definition. (n.d.). Investopedia. https://www.investopedia.com/terms/a/algorithmictrading.asp#

Go. (n.d.). Algo Trading strategies - TradeTron. https://tradetron.tech/strategy/60347

I know first |Algorithmic trading strategy: Case study. (2019, January 29). Stock Forecast Based On a Predictive Algorithm | I Know First |Stock Forecast Based On a Predictive Algorithm | I Know First | - Stock Forecast Based On a Predictive Algorithm. Contact Us: contact@iknowfirst.com. https://iknowfirst.com/algorithmic-trading-strategy-december-2014-case-study

ODIN review. (2020, June 18). Latest IPO Information | Stock Broker Reviews | Chittorgarh. https://www.chittorgarh.com/trading-platform/odin/review/13/

Samuelsson. (2020, November 16). 10 pros and cons of Algo trading. THE ROBUST TRADER. https://therobusttrader.com/pros-and-cons-of-algo-trading/

Volatility considerations for swing trading. (n.d.). Premier Trader University – Online Trading Courses. https://www.premiertraderuniversity.com/volatility-considerations-for-swing-trading

Zerodha streak review 2021 - Charges, features & strategy. (n.d.). Best Stock Broker. https://www.thebeststockbroker.com/trading-platforms/zerodha-streak/

✣ ✣ ✣ ✣ ✣