Fibonacci Retracement in Day Trading

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***Abstract*: Stock market prediction is used to assure entry and exit of the investor by predicting the future of current market trend. Traders often use the Fibonacci numbers for technical analysis. Historically, stock prices tend to obey the Fibonacci Retracements as levels of support and resistance.**

This study aims to test the validity of using Fibonacci as a technical analysis tool in intraday trading and optimise the Fibonacci trading strategy by combining the strategy with other indicators. The results of this study shows that trading using Fibonacci Retracements leads to profitable results, but in case of non-profitable results likely to get minor stop-loss points.

***Keywords*: Fibonacci Retracement, Trend in stock market, Intraday/Day trading, Range-Bound**

1. Introduction

Stock market gambling! You may not be able to predict trends in the stock market; the average person can't get good amount of returns from the stock market. We all experience such things in all sorts of people, even those who work in the financial services sector. Is this really the case? I would like to give simple answer on that it's not completely true. My opinion on that is it is not easy to make money from stock market from day one. Usually people do silly mistakes like they want lacs of rupees in a single day without following single strategy. This leads to burn their entire capital.

Generally identifying or predicting stock market behaviour and trend is not easy for a new trader. Sometimes it is applicable to experienced person too. The reason behind this is "Market is Supreme".

Still there are number of indicators which can help you to identify certain movements / behaviour of stock market. One of them is Fibonacci Retracement.

1.1 Fibonacci Retracement

Fibonacci retracements are popular among technical traders. It is a stock market tool which helps to find out trends and retracements in the stock prices which can help an investor to decide his / her entry and exit strategies for the particular stock for Positional Trading as well as for Intraday.

In this research paper, importance and use of Fibonacci Retracement in day trading in different market conditions like Range-bound day, Gap up and Gap Down, etc are discussed.

Let's start by discussing about the Fibonacci series and the golden ratio which is the foundation behind the Fibonacci Retracement for the stock prices.

1.2 Fibonacci Retracement

Fibonacci numbers are named after an Italian mathematician Leonardo of Pisa later commonly referred to as Fibonacci. In Fibonacci series, next number is sum of two previous consecutive numbers. For example: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89…… and so on.

- If we pick up any random number out of it, let's say 12.
- Now if we go backwards, we get 8 and 5 as two consecutive numbers.
- If we sum both of these numbers we get our original number i.e.
- 7 + 5 = 12
- Similarly, 5 + 12 = 17
- 12 + 17 = 29
- 17 + 29 = 46 ……….. And so on.

So basically Fibonacci sequence seems to be so simple yet it is way more powerful than it's simplistic explanation. It has many applications in various fields of science and technology.

Here we are not discussing where and how Fibonacci is applied in nature and its applications in cryptography; our main focus is to determine how Fibonacci numbers can help us to find a strong trend in the stock market.

1.2.1 Golden Ratio
The Golden Ratio is a special number whose value is around 1.618 approximately. It is represented by the Greek letter “Phi”. It is an irrational number, i.e., its decimal point numbers don’t have a pattern, they are randomly distributed. Golden ratio is applied in all sorts of fields from architecture to photography and so on.

1.2.2 Why Does Golden Ratio Matters
The golden ratio has been found in many old architectures, some paintings, nature and even in today’s modern lifestyle. We have photographs, website design, geometry etc, having golden ratio common in them. Golden ratio is present in many sorts of designs. Arts and mathematics fields make it an important ratio. It tends to reflect the principle of good design and structure.

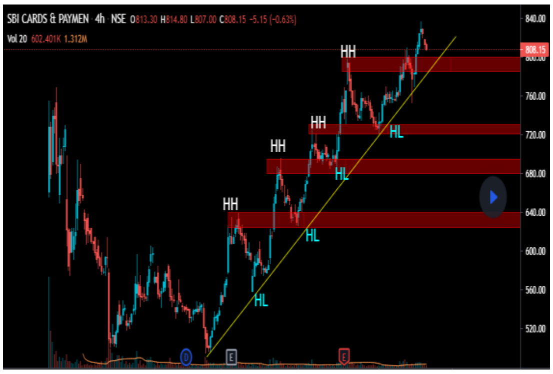
1.3 Stock Market and Fibonacci Retracement
Before going forward into the stock market and use of Fibonacci retracement for prediction of possible pattern in stocks, we need to understand fundamental terms used in stock market and their importance. Let us understand what is trend, intraday/day trading [6], Intraday Timeframe, uptrend [7], downtrend [8], range-bound trend [9] etc.

1.3.1 What is a Trend in stock market?
A trend is the overall direction of a market or an asset's price. They don’t necessarily move in a straight line. However, if you zoom out and look at slightly long-term price patterns, you will able to get a better picture of market trend.

In general understanding, a trend is the broad upward or downward movement of a stock’s price over time. Upward movement is called an uptrend, while those which move lower over a period of time are said to be in a downtrend.

1.3.1.1 Uptrend
A stock is said to be in an ‘Uptrend’ when the direction of the price movement is upwards. One of the easiest ways to identify an ‘Uptrend’ is to see if the stock is going above its previous high and not falling below its previous low. This is often referred to as ‘Higher Highs and Higher Lows’ – which is very similar to a staircase that goes up.

In below example, We will see uptrend example in SBICARDS's chart. In this chart, there is clear formation of ‘Higher Highs and Higher Lows’.



1.3.1.2 Downtrend
A stock is said to be in a ‘Downtrend’ when the direction of the price movement is downwards. No stock moves straight in one direction. The price will often go up and fall. One of the easiest ways to identity a stock in a ‘Downtrend’ is to see if the stock is going down, rising up and then going below its previous low.

This is referred to as ‘Lower Highs and Lower Lows’ – which is very similar to a staircase that moves downwards.

In below example, we will see Uptrend example in GRASIM's chart. In this chart, there is clear formation of ‘Lower Highs and Lower Lows’.

Lower Highs and Lower Lows’ – which is very similar to a staircase that moves downwards.

1.3.1.3 Intraday / Day trading
Intraday Trading means, you buy and sell stocks on the same day. Intraday trading is also known as Day Trading. In other words, intraday trading refers to closing all your open positions that you bought at start of the day, before the closing bell.

You don’t get the ownership of stocks you buy and sell in intraday trading. The goal of intraday trading is not to own the stocks, it’s main objective is to make profit by getting the benefits of price movements during the day.

1.3.1.4 Intraday Timeframe

Charts are powerful tool to analyze data in few moments. They are helpful to the day traders to judge the market trends. Both long-term and short-term investments are directed by the day charts.

There are multiple timeframes to use in day trading. Here are the most common timeframes:

- **5 minutes timeframe**
- **15 minutes timeframe**
- **1 hour timeframe**

1.3.1.5 Range-Bound

A trading range occurs when a stock / index trades between consistent high and low prices for a period of time. The top of a stock / index' trading range often provides price resistance, while the bottom of the trading range typically offers price support.

In Range-bound trend, price movement gets stuck in a small range and price movs very slowly. In range bound market, trader may get very less opportunity of trading.

Here is an example of Range-Bound Trend:

1.4 Fibonacci Retracement in Intraday

In intraday, Fibonacci Retracement plays a very important role. Level 1.382 and Golden Level 1.618 help in decision making. They also help to identify the trend / direction of market for that particular day.

As we have noticed in live market, Fibonacci Retracement can be used in different scenarios of the market, such as Gap up and Gap down.

We will see successive use of Fibonacci Retracement in various conditions with use of charts.

1.4.1 Plotting of Fibonacci Retracement Tool

1. First select Fibonacci retracement tool from your trading platform.
2. Plot fib tool on first 15 minute candle of the day.
3. To plot Fib tool, place grid from high to low of candle for downside fib levels and plot from low to high for upside fib level.
4. Mark the level / plot horizontal line on 1.382 and 1.618 level on downside and on upside too.
5. After that, we can delete fib tool from chart.

6. As a final output we will get 4 horizontal lines on charts - two on the upside of the first 15 minutes candles, and two on the downside of the first 15 minutes candles.

In the above image, there are two separate plotting of grids for upside and downside. In the image, we can see the final output after plotting Fibonacci Retracement of first 15 minutes candles of the day.

1.6 Rules to use Fib Tool

- You must know the direction of market, and must know dynamic and static Support and Resistance.
- You can use this for exit or for entry purpose. This will help in identifying reversal or breakout.
- If any stock or index breaking 1.618 level and sustaining above for uptrending market and below for downtrending market then that trend will be strong for intraday.
- If stock or index breaking both the levels (1.382 or 1.618) in a single candle then consider it as a strong breakout, but in same case sustenance is must.
- Sustenance can be check on 5 min timeframe, 2-4 candles.
- For exit or safe profit booking, you can use this tool also for re-entry in case of breaking and testing 1.618 level.
- For example, you are using opening range breakout for entry, you can book profit at 1.382/1.618 level if any reversal sign found. In case of strong trend you can book half quantity and trail half open position.
- After breaking 1.618 you can go for 2.618 as a target or 50% between 1.618 and 2.618.
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1.6 Fibonacci Retracement Tool in Different Scenarios

It has been observed that fib tool playing important role in day trading. In most of the cases it act as a support and resistance on intraday chart. It saves trader from fake breakout or it can give good entry and exit points.

We will see on charts how this tool helping in day trading in different market conditions such as Gap Up , Gap Down, Range Bound, Fake Breakouts, etc.

1.6.1 Gap Up Case (Unfilled Gap)

When the price of a financial instrument opens higher than the previous day's closing price, then it is called as gap-up opening.

For example, suppose Tata Motor's today's closing price is Rs 300; and tomorrow morning, if it opens at Rs 305 level then it is known as Gap-up Opening.

We have observed that in such conditions Fibonacci Tool act as great saviour from wrong trades if it is trap.

What are the Possibilities after Gap up Opening?

(1) In gap up opening, first possibility after gap up opening can be - trend can continue its Uptrend from gap opening and can move further without filling the gap.

(2) Second possibility can be - it can move in fixed range without filling the gap.

(3) Third Possibility can be - it will behave like it is going to fill the gap, but in halfway, it can turn back.

With the use of Fibonacci Tool, trader can save himself from third possibility. Now we will understand this scenario with the help of the chart. So one can get better picture of this condition. See the below chart for example:

Here, Nifty 50 index opened with gap up, and for the first hour, it remained in an opening range of first 15 minute candle, i.e., high and low of 1st 15 minute candles. After few hours, it tries to break downside, and trend was behaving like it is going to fill the gap. But once it touches **1.618** level in very next candle, it comes back inside the Fib range. Later throughout the day it remains in a range and never fill the gap after first attempt.

Here it is like a trap for sellers, because they will assume that price is moving towards gap, and so they will make sell position. Here Fib tool has very crucial role by saving the trader from this trap.

1.6.2 Gap Down Case (Filled Gap)

In this case stock / index opens gap down and fills the gap between previous day's Close and present day's Open.

After gap-down opening, we can see downtrend without filling the gap as we discussed earlier. There can be a case where stock / index can fill the gap and reverse from 1.618 fib level if it is clashing with gap down range.See below example of such a case:

Here in above chart price Nifty 50 index open gap down after that it gives up side move fill gap between previous Day's Closing and fresh opening. After filling that gap it reversed from 1.618 level and remain in a range throughout the day.

1.6.3 Range-Bound

Range bound market, or we can say range bound trend, is also known as choppy market. Where stock / index moves between certain ranges, that too, very small range.

Fib plays very very crucial role in range-bound trend. In range bound market, trend will not cross Fibonacci golden level 1.618 either upside or down side. Throughout the day, it can remain in a range of 1.618 on upside and 1.618 on downside.

If in case of any fake breakout or breakdown on 1.618 level, trend will come in a range on very next candle or next few candles.

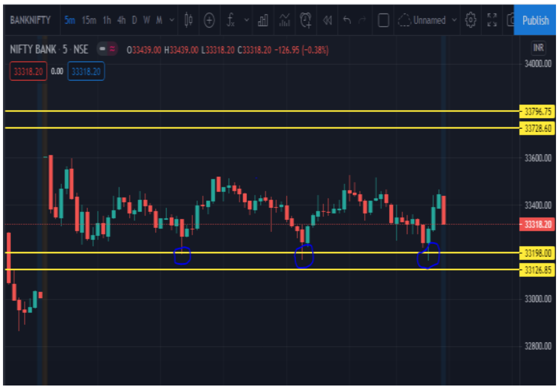
Breakout means - breaking of certain range on upside after remaining in a range for a long time. Whereas, Breakdown means - breaking of certain range on downside after remaining in a range.

We will see the example of Fibonacci level in Range-Bound Market:

In above chart, Nifty 50 index trend remain in a fixed range since opening; and after one hour, it tries to break the range on upside but fails and comes inside the range. After that, it attempted many times but failed. Throughout the day it never broke the range.

This is how Fibonacci retracement work like a magic in range-bound market.

Example-2



Here is one more example of index Bank Nifty. Since opening, it was in a range; after few minutes it tries to break on down side but fails and reverses from 1.382 level thrice and not even touches the **golden level of 1.618.**

1.6.4 Trending Day

A trend day is a typical day on which price moves in the same direction with strong trend starting from day's open and closes strong in the direction of the trend.

On trending day, price will not stuck in fixed range. It will move further up or down according to the market's trend.

What are the Possibilities on Trending Day?

- On trending day, as we mentioned in rules, after breaking 1.618, it is strong intraday trend. On a trending day, after breaking 1.618, you can further go for target of 2.618 and 3.618.
- After breaking 2.618, if you find trend is strong then you can calculate price difference between 2.618 and 3.618 and divide it by two, and whatever answer comes, you can set your target at that point. We can call it as - mid-point.

Example: In a downtrend, if price is 12,400 at 2.618 level and 12,300 at 3.618 level, hence price difference between 2.618 and 3.618 is 100 Rs. So, 100 / 2 = 50. You can set target of 50 points after breaking 2.618 level where market price is 12,400. Hence, 12,400 - 50 = 12,350. You can set target of 12,350.

We will see example with the help of chart:

In above scenario here it is one side clear trend; and after breaking 1.618, it reaches to 2.618, and ever broke 2.618. After breaking 2.618, it reaches to midpoint.

Price at 2.618 (12,261) and at 3.618 (12,197)
12,261 - 12,197 = 64
64 / 2 = 32

Hence we get midpoint of 2.618 and 3.618
= 12,261 - 32 = 12,229

At 12,229, price is closed at the end of the day.

Example-2

Conclusion

It is observed that in all scenarios of market, how well Fibonacci Retracement is giving result. Earlier in stock market, Fibonacci Retracement was only used for positional trading or short term trading to decide the further stops of market or to identify how much fall it can give after an uptrend is ending.

But in day trading also, Fib tool can work like a magic. It can give profitable results to day traders. By using Fib Retracement in day trading, traders can save themselves from fake moves. In range bound market, they can save themselves from getting wrong entries and making loss. On a trending day, it can also maximize profit.

With Fib Retracement, other tools of stock market or other technical indicators can be used.

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