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General Article

Investing in Stock Market using Fibonacci Series

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Abstract

Money does not retain its value over years, hence just saving won't help one to meet his/ her financial goals and/ dreams. Along with saving, investment is vital to ensure that inflation does not take away one's saving. However market is an unpredictable phenomenon for most of the investors. Predicting markets is an empirical task however analyzing them can prove a boon to make investment decisions. The paper illustrates how Fibonacci series can be used by investors to take appropriate decisions on investing.

Keywords: *Fibonacci, Investment, Correction, Extension*

1. Introduction

Lifestyle changes and the need to upgrade oneself in every walk and sphere of life has made it vital for the current human population to not just save but **i**nvest. The primary goal of investing is earning huge profits. However price extensions in Equity markets are exuberant price movements that result from runaway market, opening gaps, or limit moves, up or down, at high volatility. Most extensions occur when unexpected news, such as weather information, crop reports, or interest rate announcements by the Reserve Bank is made. It may reverse major market trends within seconds. When news runs counter to investor's expectations, market situations emerge with strong trading potential. However, investors can only take advantage of these situations if they follow sensible, definitive rules in carrying out analysis. Extensive market moves can be very dangerous for investors who get caught by surprise with a wrong position in the marketplace. The paper illustrates how a mathematical technique can be employed to study such extensions and make appropriate investing decisions for meet the set financial goals as well as minimize losses.

2. Fibonacci: Origin and financial application

Fibonacci (1170–1240), an Italian mathematician was the founder of Fibonacci series, which runs as follows: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144...

This series of numbers is derived by starting with two 1 and then adding 1 + 1 to get 2, the third number. Then, adding 1+2 to get 3, the fourth number, and so on. The mathematical series tends asymptotically (approaches slower and slower) toward a constant ratio. If each number, as part of the series, is divided by its preceding value (e.g., 13 ÷ 8 or 21 ÷ 13), the operation results in a ratio that oscillates around the irrational figure 1.61803398875 . . . , being higher than the ratio one time and lower the next.

This Fibonacci ratio, 1.618, is also referred to as "divine proportion", "golden section" and "golden mean." Algebraically, it is generally designated by the Greek letter PHI:

PHI = 1.618

If we divide any number of the Fibonacci summation series by the number that follows it (e.g., 8 ÷ 13 or 13 ÷ 21), the series asymptotically gets closer to the ratio PHI′, with PHI′ = 0.618

3. Fibonacci Corrections

Corrections work equally well long or short, to the upside or downside of the markets. However, trending markets may run away without correcting enough and without leaving a valid signal. Hence trading with corrections is a preferred short-term strategy. The goal is to have many trades, of which a large number are profitable. Likewise, there should be a low number of losing trades, and these should be small losses.

Correction levels: 0.382, 0.500, 0.618

- 0.382 is the result of the division 0.618 ÷1.618.
- 0.500 is the transformed ratio 1.000.
- 0.618 is the result of the immediate ratio 1.000÷1.618.

In general, for Fibonacci corrections, an impulse wave that defines a major market trend upward or

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downward will have a corrective wave before the next impulse wave reaches new territory. This occurs in both bull market and bear market conditions.

Trading with corrections is a trend-following strategy. It is based on the assumption that after a correction of an impulse wave up or down, the next impulse wave will follow in the direction of the first impulse wave after the correction is finished. Thus, we generally expect a minimum of a three-swing price move, and in many cases, which is usually correct. Therefore, working with corrections is a valid investment strategy.

Corrections are closely related to the Fibonacci ratios through the swing size and the volatility of a product. The ratio choice depends on the product and the time intervals selected. Weekly data might need different ratios from daily or intraday data. The safest way to find the best ratio for products and time spans is to test them on historical data with a computer. The most common approach to working with corrections in research and practical trading is to relate the size of a correction to a percentage of a prior impulse wave.

The fig.1.below illustrates the Fibonacci correction levels, with swing low of about $71.31 and Swing High at about $89.83. The expectation is that if the market retraces from this high it will find support at one of the Fibonacci Levels (marked in green), because traders will be placing buy orders at these levels as the market pulls back.

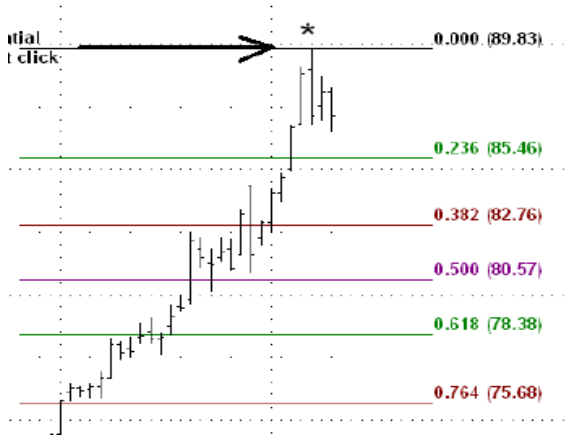

Fig.1 Fibonacci Correction

4. Fibonacci 3-step extension pattern

Extensions take place primarily in the third wave of a 3-wave price pattern. In a regular 3-wave pattern in an uptrend, the correction does not go lower than the bottom of wave 1. In extensions out of a bear trap formation of irregular bottoms, the correction can go lower than the low of the first impulse wave (opposite in a bull trap). The two basic chart formations for price extensions are illustrated in Figure.2

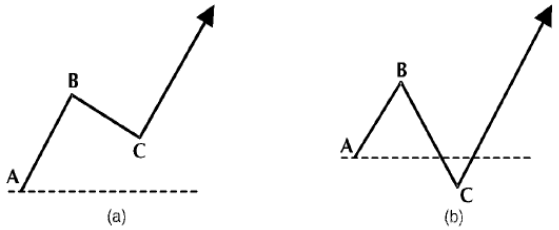

Fig.2 Extensions out of a regular 3-wave pattern and a bear trap chart formation

Exploring price extensions means investing against major trend directions. Working with extensions is usually for quick profits by taking advantage of imbalances in the marketplace. Therefore, it is important to know in advance not only when to enter a position, but also when to exit it. Entry rule, stop loss rule, and profit target always must be integrated to achieve long term investment strategies that are consistently profitable. Three consecutive analytical steps are needed to calculate price targets in price extensions of the third wave out of a 3-wave chart formation, illustrated in fig.3, below.

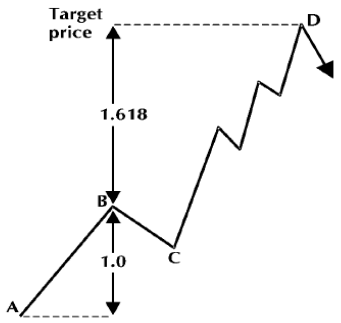

Fig.3. Steps Illustration

Step1: A minimum swing size has to be defined for the sizes from peak to valley (or valley to peak) of the first impulse wave of the 3-wave pattern.
Step2: The swing size has to be multiplied by the Fibonacci ratio 1.618.
Step3: The resulting value is added to the size of the initiating swing to define the price target.

Conclusions

Thus two important investment analysis techniques evolved from Fibonacci series has been illustrated in this paper. It does not act as a whole and sole strategy for investment but does provide a vital and crucial point in investment decision making and analysis.

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