Fibonacci Retracements

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What is Fibonacci Retracement?

Fibonacci retracement is a popular method in technical analysis that uses ratios to determine support and resistance levels. These ratios are derived from the Fibonacci sequence, which consists of key numbers identified by mathematician Leonardo Fibonacci. Fibonacci retracement is based on the idea that markets will retrace a portion of its original move in price before continuing its original trend. Whether they are trading stocks, commodities or even day trading the forex market, the Fibonacci retracements pattern can be useful to swing traders in identifying potential reversal levels and setting price targets and stop losses.

Popular Fibonacci Ratios

There are many different Fibonacci ratios that technical analysts use to determine retracement levels. However, the popular Fibonacci ratios are 0%, 23.6%, 38.2%, 50%, 61.8% and 100%. Technical analysts use Fibonacci ratios to identify retracement levels and predict the extent of a correction or pullback.

How do we come up with these ratios? First, it helps to have some knowledge on the Fibonacci Sequence. It is unnecessary to examine the mathematical properties behind the sequence but we will cover the basics as to how the ratios are derived.

What is The Fibonacci Sequence?

The Fibonacci Sequence is a series of numbers where each number is simply the sum of the two preceding numbers. The sequence is 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89 and so on. A significant characteristic of this sequence is that each number is approximately 1.618 times greater than the preceding number. The approximation becomes closer to 1.618 as the numbers increase. 1.618 is actually referred to as the Golden Ratio. This common relationship between each number is the basis of the popular ratios used in the Fibonacci retracement method.

How Are the Fibonacci Ratios Derived?

Some traders avoid using the Fibonacci analysis because they think it involves complex mathematics. However, I will break the method down for you step-by-step and you will see that it's not that complicated after all. For your knowledge, here is how the common Fibonacci ratios are derived:

61.8% - A number divided by the next highest number approximates 0.618 (13/21=0.6190, 21/34=0.6176, etc.

38.2% - A number divided by a number two places higher approximates 0.382 (13/34=0.382, 21/55=0.3818, etc.)

23.6% - A number divided by a number three places higher approximates 0.236 (13/55=0.2363, 21/89=0.2359, etc.)

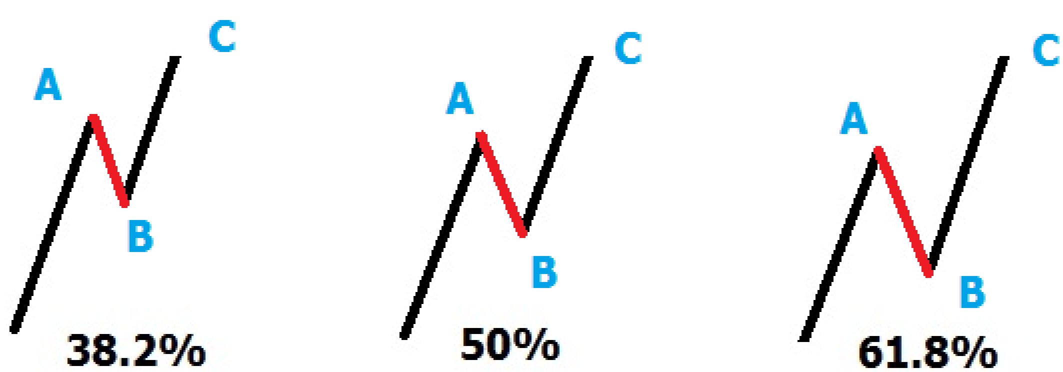
The 50% ratio does not relate much to the Fibonacci sequence, but traders use this level because of the tendency for stocks to reverse after retracing half of the previous move, as assumed by the Dow Theory.

There are many other ratios that traders use, such as 47.2%, 76.4% or 78.6%. The decision to use a certain ratio is a personal choice. You should test different ratios and decide which ones work for you.

Fibonacci Retracements Pattern

Retracements are based on prior moves. In a downtrend, a bounce retraces a percentage of the decline. In an uptrend, a correction retraces a percentage of the rally. Once a pullback occurs, technical analysts can determine specific Fibonacci retracement levels to monitor.

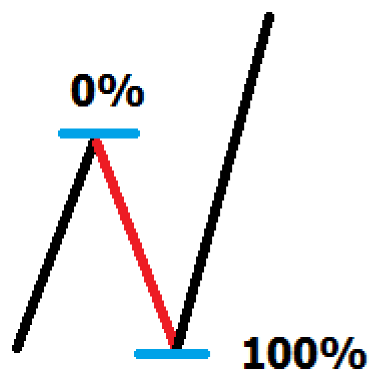
The below picture depicts the Fibonacci retracements pattern. When a stock uptrends (A), it can retrace part of that move (B), before moving on in its original trend (C). Swing traders watch these retracements, or pullbacks, for opportunities to buy and sell. However, just because a stock retraces 38.2% does not mean you should automatically buy the stock! How do you know the stock won't go down further and retrace 50%? Instead, plot the Fibonacci retracement levels and look for signs of reversals before making any purchasing decisions. Check out further examples on how to identify Fibonacci Retracements.



Calculating Fibonacci Retracement Levels

To calculate Fibonacci levels, take the range of two extreme points, such as a major peak and a major trough and multiply the range by a Fibonacci ratio. Then, subtract the result from the price of the major peak. This will give you the Fibonacci level. For example, assume the lowest price of a stock was $15 and the highest was $29. The range between these two extreme points is $14. Multiply the range of $14 by the Fibonacci ratio of 38.2% and subtract the result from $29. This will give you $23.65, which is one of the Fibonacci levels. If the stock continues to retrace its move to 50%, the stock price will go down to only $22. Similarly, the 61.8% level would be $29 – (0.618 x $14) = $20.34.

The 0% level is considered to be the start of the retracement, which would be $29 and the 100% level is a complete reversal of the original move, which would be $15.



The Golden Ratio

A 23.6% retracement is relatively a short pullback. Retracements in the 38.2% - 50% range are considered moderate. The 61.8% Fibonacci ratio is referred to as the Golden Ratio or the Golden Mean. Although shallow retracements like a 23.5% retracement can occur, 38.2% – 61.8% covers more possibilities.

Keep in mind that retracement levels do not equal reversal points. Instead, they simply signal a potential reversal. Traders can use other technical signals, such as candlesticks or volume, to confirm the reversals points. The more technical indicators signal the same thing, the stronger the signal.

Eventually, you will be able to just look at a chart and estimate where the levels are. However, physically draw the lines on a chart if it helps you to better visualize the Fibonacci levels.

Fibonacci analysis provides traders a way to forecast support and resistance levels and set price targets and stops. Given their popularity and widespread usage by technical analysts, it is helpful to understand the Fibonacci trading strategy. Although there are many Fibonacci ratios that traders use to determine **Fibonacci retracement** levels, the common ones are 23.6%, 38.2%, 50%, 61.8% and 78.6%. For further details on the history and mathematics of Fibonacci, you can check out our post on how the Fibonacci ratios are calculated. The decision to use a certain ratio is based on your personal preference and experience.

How to Identify Fibonacci Retracements

The Fibonacci retracement pattern can be applied to different trading markets, including stocks, ETFS, currencies, commodities, and futures. **Fibonacci retracements** can also be used on any time frame; however an important aspect to remember is that a Fibonacci retracement pattern on a weekly chart is more significant than one on a daily chart. For example, the below shows Microsoft stock trading at a low point of around $22 in December 2011 and it peaked to around $30 in March 2012, as indicated by the orange arrows.

To calculate Fibonacci levels, you need to take the range of two extreme points, such as a major peak and a major trough and multiply the range by a Fibonacci ratio. In this case, we would draw two lines, one at the price level of $22 and the other at $30. The line at $30 represents the 0% Fibonacci level and the line at $22 represents the 100% Fibonacci level. This means that if the price reversed at $30 and kept trending downwards towards $22, it would have retraced 100% of its prior movement.

For your information, here is how we calculate the remaining retracement levels. Let's use $30 and $22 as the approximate prices for easy calculation.

(\$30 - \$22) x 0.382 = 3.06
This means that the stock has retraced \$3.06 of its prior advance. Subtract this amount from the peak of \$30 and the price hitting this level would be around \$26.94. This is represented by the 38.2% retracement level shown on our chart above.

(\$30 - \$22) x 0.50 = 4
This means that the stock has retraced 50% of its prior advance, or down \$4 from its peak of \$30. This level is at a price of around \$26, as indicated by the 50% retracement level line. In addition, the three green arrows show that prices actually hit this level three times.

(\$30 - \$22) x 0.618 = 4.94
The 61.8% retracement level is at a price of around \$25.

Trading the Fibonacci Retracements Pattern

Based on the above chart, Microsoft stock broke the 38.2% retracement level and continued down to the 50% retracement level, as shown by the first green arrow. It bounced back up in June, only to hit the 50% retracement level again in mid-July. At this point, the 50% retracement level is also establishing itself as a support level. Once the price bounced up again from support, some traders will use this as a signal to buy shares, while setting a stop loss just below the support level. If the support level is broken, it could signal a potential downtrend. Setting a stop loss below the support level will help to minimize potential losses.

I typically set my stop loss with a little room for false breaks. For example, there was a false break when price hit the support level the third time. The stock finally did break support later in November when there was a gap down to around \$25.

Fibonacci Trading Strategy

Although many traders use Fibonacci Retracements, others argue that the Fibonacci pattern is more of an art than science. Keep in mind that technical analysis is subjective and it is an art itself. It is helpful to learn as many strategies as possible and test them to see which ones work the best for you. Many traders use multiple technical indicators to confirm a signal before making any decision.

Free Trading Ebooks

The following are 3 ebooks on how to trade using technical analysis and stock chart patterns.

1. Most Inspiring Trading Strategies

Learn the 3 strategies that expert traders are using to beat the Forex and the stock markets. These trading strategies may give you inspiration on how you trade the market.

2. Technical Analysis Ebook

Learn how technical analysis work and how to use trend lines to recognize profitable trade setups.

3. 10 Keys to Successful Trading