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MARKETS NEVER SLEEP®

Riding The Wave: Making Elliott Wave Simple

Introduction

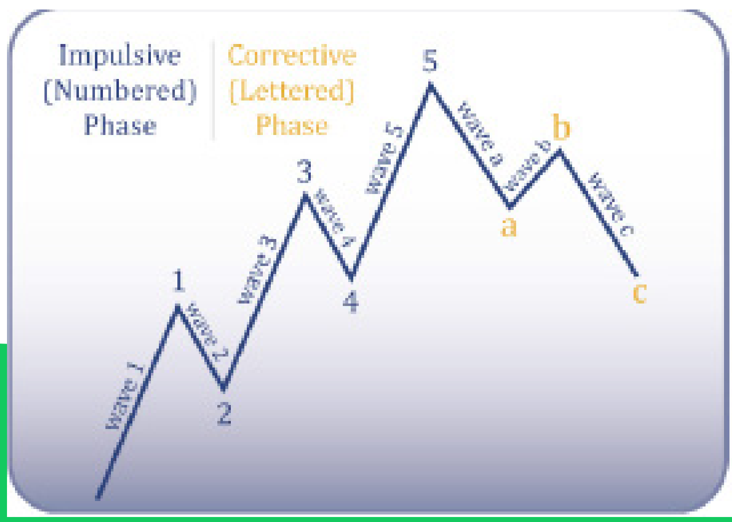
The Elliott Wave Principle of technical analysis has gained in popularity in the past 20 years. Even though it was first proposed as a way in which to forecast market trends in 1930, it's used among technical traders has increased in recent years as its principles become better known along past successes. Until recently, most of the wave analysis relied on the skills and experience of Elliotticians. Every Elliottician has his unique methods for spotting and counting waves, and as a result, Elliotticians do not always agree with the wave count of one another.

Elliotticians describe wave counting as an art rather than a science. Given the labor intensive nature of this practice, the number of stocks that can be analyzed is small, and the number of missed opportunities is large. Trading Central has developed a sophisticated yet easy-to-use Elliott Wave analysis solution that uses quantitative characteristics associated with the waves that appear in market data, to allow each wave to be uniquely identified. This solution scans through thousands of financial instruments across the worlds every day to identify Elliott Wave events from the of respective instruments. Investors can use a particular instrument for analysis, along with other technical indicators, oscillators and classic patterns to get a complete technical perspective on the chosen instrument. This paper discusses the various challenges faced by Elliotticians and investors while applying the guidelines of the Elliott Wave Theory and the solutions developed by Trading Central to address these challenges.

The Elliott Wave Theory

Ralph Nelson Elliott discovered that stock prices trend and reverse in recognizable patterns and that these patterns are created by underlying crowd behavior based on the fear and enthusiasm of investors.

Elliott used the data from the Dow Jones Industrial Average to discover that the ever-changing path of stock market prices revealed a structural design that, in turn, reflected a basic harmony found in nature. From this discovery, he developed a rational system of stock price analysis.
He isolated thirteen patterns or "waves" of directional movement that recur in markets and are repetitive in nature but are not necessarily repetitive in time or amplitude. He then described how these structures link together to form larger versions of the same patterns, how those, in turn, building blocks for patterns of the next larger size, and so on. His descriptions constitute a set of empirically derived rules and guidelines for interpreting market movement.



Business Challenges Associated with Elliott Wave Analysis

Elliott Wave theory is a well established methodology for stock analysis but it has some short comings with respect to its practical application and user adoption. Some of these are discussed below:

- The subjective nature of Elliott Wave theory and complicated wave counting rules make it difficult for typical investors to apply these principles to their individual research. Elliott Wave analysis requires a high amount of expertise and experience to interpret the trends and to be sure of the quality of analysis and results. Thus, it is perceived as a tool of institutional investors.
- The common investor perception associated with Elliott Wave analysis is that it is more focused on trends and not targets; hence, it is difficult to associate the analysis with trading action.
- Finally, one of the biggest challenges faced by technical traders is the dilemma of connecting the broader market picture at a macro- level with the day- to- day price movements in individual stocks at the micro- level.

Solution to Investing Challenges

- Trading Central's solution reduces the subjective aspect of Elliott Wave analysis. Trading Central does the hardest part (i.e. wave recognition) and presents the result in a way that is easy to understand and interpret for trading. With pre-calculated wave counts for any stock, investors can easily consider the impact of Elliott Wave analysis in their trading decisions. The key value proposition of this solution is time savings. With such a tool an investor can now consider hundreds of stocks in a day compared to a much smaller number using manual wave counting.

Trading Central's Elliott Wave solution bridges the information gap between institutional and retail investors by presenting advanced analytical information in an easy-to-understand format.

- Elliott Wave analysis, when used in conjunction with other technical analysis methods such as indicators, classic patterns, gives very powerful insights into potential investment opportunities. This is a unique capability that Trading Central offeaars in its flagship product Technical Insight™ where investors can validate day- to- day Technical Events in a specific stock against the macro-level trends in the particular stock or market in general. This helps traders make effective trading decisions by ensuring they are not on the wrong side of the trend. For example, if the overall Elliott Wave trend is bullish then a trader may decide to neglect bearish indicators and trade only bullish indicators.

- Trading Central's Elliott Wave solution also provides investors with the target prices based on Fibonacci levels associated with an Elliott Wave Event which to weigh the risk and reward before making a trading decision.

Although Elliott Wave analysis has well-established any other stock analysis methodology, converting them into is not easy. The following are some of the technical challenges associated with automated Elliott Wave recognition.

- **Ambiguity in distinguishing between waves:** In Elliott Wave analysis, rules for recognizing different waves are similar. For example, wave 3 and wave 5 extensions are effectively extremely difficult to these two different events.

- **The problem of revisions:** As more data emerges previous waves sometimes need to be revised. For example, a wave 3 initially looks like a wave 5, and will probably be classified as such. In the light of later data, that wave 5 may have to be reclassified as a wave 3 extension.
- **The consistency of wave count with different bar sizes:** It is important that the wave count for different chart resolutions; e.g. weekly, daily etc. The smaller the time frame, the more waves are to randomness in the behavior of market participants and many Elliott Waves are missed on low-resolution charts.
- **Asset class specific problem:** There are fundamental differences between commodities and stock wave patterns. With stocks, the expectation is that wave 3 is the longest and the most likely to have extensions. With commodities, wave 5 is the most likely to have extensions. With commodities using the nearest contract data, a price change caused by a rollover could trigger a spurious wave count.

Solutions to technical challenges

At first sight, Elliott Wave recognition seems to be similar to technical pattern recognition but in fact, it is very different. Mathematicians at Trading Central found that rules-based pattern recognition was not effective for Elliott Wave analysis and a probability-based approach was adopted. On average, wave counts found using the "most probable current wave" approach results in more correct waves than the pattern recognition approach. Mixing a mathematician's approach to developing an algorithm with a trader's approach to picking trade set-ups resulted in an effective and scalable algorithm.

A solution to the problem of revision also lies in the probability outcomes and most probable waves. If previous wave counts are presented probabilistically, it becomes easier to do revisions when needed. Traders learn to recognize that the wave count presented is the best one currently available but not necessarily the only answer as new bars become available.

From a business standpoint, analysis of posterior probabilities of wave counts acts as a differentiator between other Elliott Wave software in the market and the Trading Central product. Trading Central 's solution to the problem of consistency with different charting timeframes was to make the subways available as an advisory second level of information.

The key point to set minimum standards for acceptable sub waves. For example, the intermediate wave might be somewhere between 0.246 and 0.382 of the primary wave, and an impulse corrective wave between 0.246 and 0.382 of the primary wave. Practically, subways can only exist if the range of a weekly bar is sufficient to satisfy this kind of criteria. Effectively, this tells us when we should stop looking for a higher resolution data.