Trading Harmonic Patterns

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Chart Pattern recognition is the basic and primary ability any trader develops in Technical Analysis. It may be basic development, but the perfection of pattern recognition takes extensive practice and repetitive exposure. The expert recognition of patterns helps traders to quantify and react to the changing market environment. Chart patterns are categorized into “continuous” and “reversal” patterns and these categories are further classified as simple and complex patterns. The complex patterns structures may consist of collections of simple patterns and combination of prior swings. The knowledge of this classification of pattern recognition and its properties give traders greater potential to react and adapt to a wider range of trading conditions.

Why Do Patterns Form?

Market prices always exhibit trend, consolidation and re-trend behavior. They rarely reverse their trends and transitional phases to turn from a previous trend on a single bar. During this transitional phase, they experience trading ranges and price fluctuations. This ranging action defines identifiable price patterns. These consolidation phases occasionally favor prevailing trends prior to their formation and continue their direction. These are called “Continuation” patterns and a few examples of these patterns are: Symmetric Triangle, Flags and Cup and Handle. Some phases result in reversing the prior trend and continue in reversal conditions. These are called “reversal” patterns and a few examples of reversal patterns are: Head and Shoulders, Double Bottoms and Broadening Patterns.

Harmonic Patterns

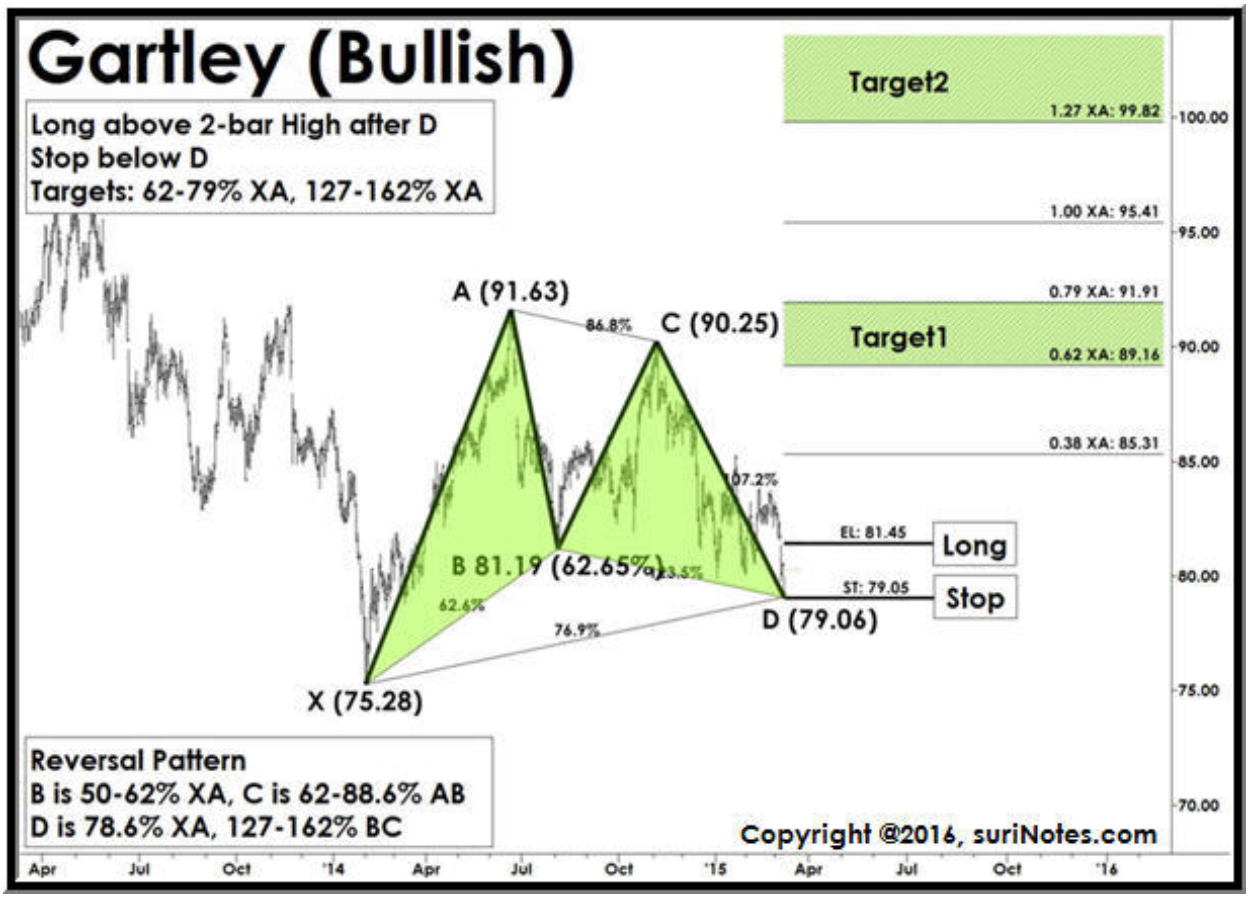
Harmonic Patterns foundation and trading concepts were laid by H.M. Gartley in 1932. H.M. Gartley wrote about a 5-point pattern (known as Gartley) in his book, Profits in the Stock Market. Larry Pesavento has improved this pattern with Fibonacci ratios and established rules on how to trade the “Gartley” pattern in his book, Fibonacci Ratios with Pattern Recognition. There are few other authors who have worked on this pattern theory, but the best work to my knowledge is done by Scott Carney in his books of “Harmonic Trading.” Scott Carney also invented patterns like “Crab”, “Bat”, “Shark”, “5-0” and added real depth of knowledge for their trading rules, validity and risk/money management. His pioneering work is truly impressive and the trading world should thank him immensely as he has opened newer trading styles and careers for many traders.

The primary theory behind Harmonic patterns is price/time movements which adhere to Fibonacci ratio relationships and its symmetry in markets. Fibonacci ratio analysis works well with any markets and on any timeframe charts. The basic idea of using these ratios is to identify key turning points, retracements, and extensions along with a series of the swing high and the swing low points. The derived projections and retracements using these swing points (Highs and Lows) will give key price levels for Targets or Stops.

Harmonic patterns construct geometric pattern structures (retracement and projection swings/legs) using Fibonacci sequences. These harmonic structures identified as specified (Harmonic) patterns provide unique opportunities for traders with potential price movements and key turning or trend reversal points. This factor adds an edge for traders as Harmonic patterns attempt to provide highly trustful price entries, stops and targets information. This may be a key differentiation with other indicators/oscillators and how they work.

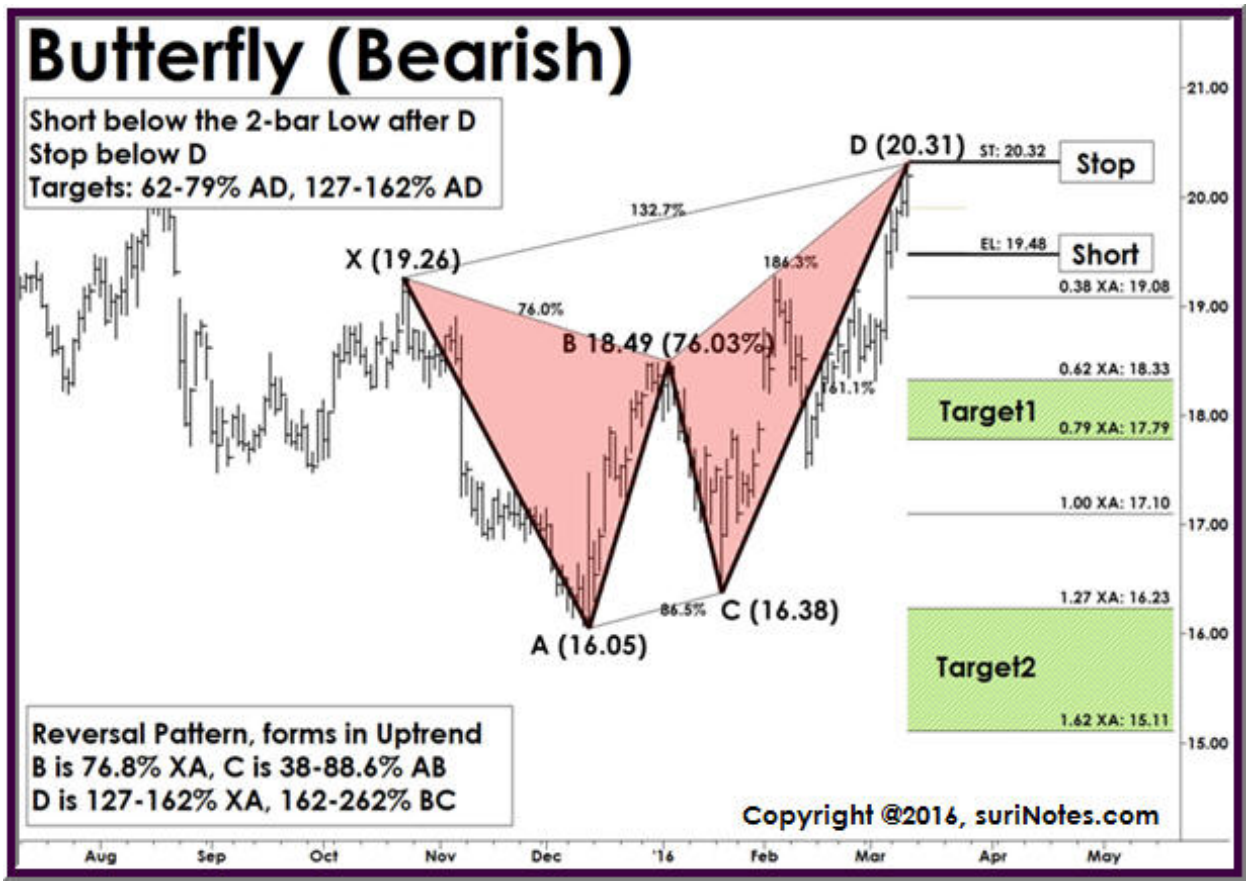
Examples of Harmonic Patterns

A 5-point pattern Gartley (Bullish) is shown below. These patterns resemble "M" or "W" patterns with 5 key pivot points define the harmonic pattern (Gartley). Gartley patterns built by 2 retracement legs and 2 impulse swings(legs) forming a 5-point pattern and all these swings are interrelated and associated with Fibonacci ratios. The center (eye) of the pattern is "B" defines the pattern and "D" is the action or trigger point where trades are taken. It shows trade entry (Long), stop and target levels from "D" level.



The following chart shows another 5-point Harmonic pattern (Butterfly Bearish). This pattern is similar to the above 5-point Gartley pattern, but in reverse. Here the pattern is "W" shaped with "B" being the center (eye) of the pattern. It shows trade entry, stop and target

levels from “D” levels using “XA” leg.



List of Harmonic Patterns

- ABC Bullish/Bearish
- AB=CD Bullish/Bearish
- 3-Drives Bullish/Bearish
- Gartley Bullish/Bearish
- Butterfly Bullish/Bearish
- Bat Bullish/Bearish
- Crab Bullish/Bearish
- Shark Bullish/Bearish
- Cypher Bullish/Bearish

Fibonacci Discussion

Harmonic patterns discussion must include Fibonacci numbers as harmonic patterns use Fibonacci ratios extensively. Fibonacci numbers are pervasive in the universe and were originally derived by Leonardo Fibonacci. The basic Fibonacci ratio or “Fib ratio” is the Golden Ratio (1618). Fibonacci Numbers are a sequence of numbers where each number is the sum of the previous two numbers.

The series of Fib Numbers begin as follows:
1,1,2,3,5,8,13,21,34,55,89,144,233,317,610….

There are plenty of materials and books about the theory of how these numbers exist in nature and in the financial world. A list of the most important Fib ratios in the financial world which are derived by squaring, square-roots and reciprocating the actual Fibonacci Numbers are depicted below:

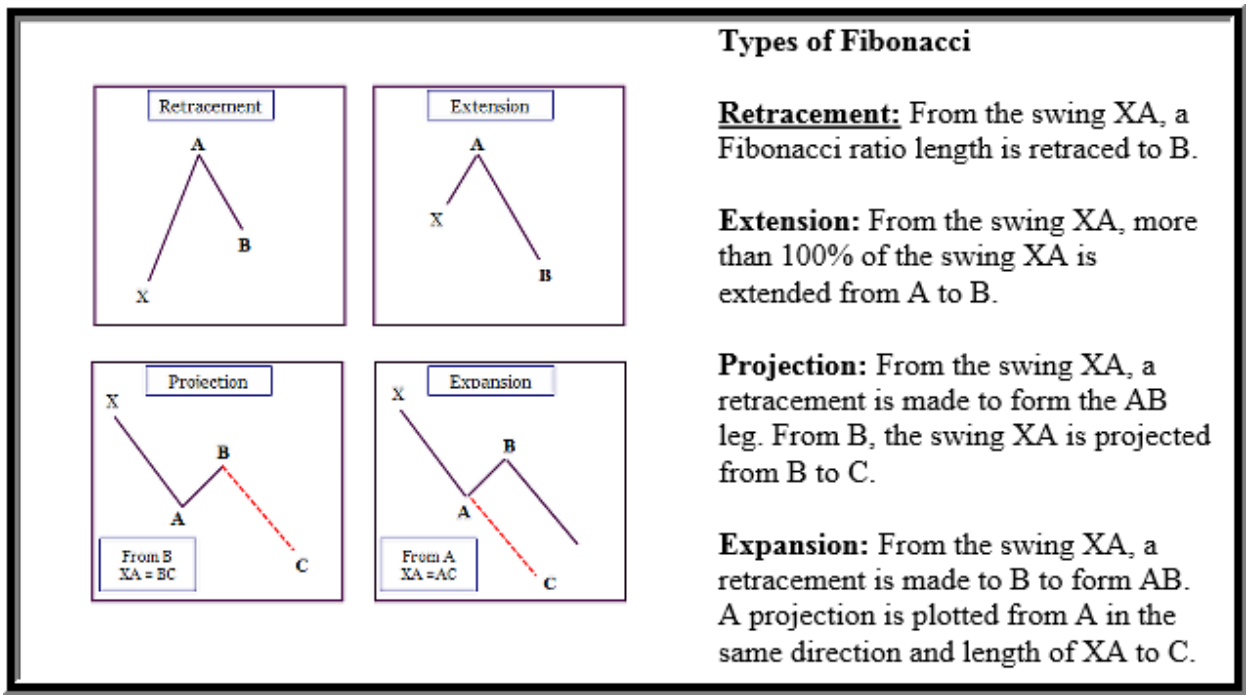
Key Set of Fibonacci Derived Ratios in Trading are: 0.382, 0, .618, 0.786, 1.0, 1, 1, 2.0, 2.62, 3.62, 4.62

Secondary Set of Fibonacci Derived Ratios in Trading are: 0.236, 0, 0886, 1.13, 2.236, 3.14, 4.236

There are many applications of Fibonacci in Technical Analysis. Some of the applications include Fibonacci retracements, Fibonacci projections, Fibonacci Fans, Fibonacci Arcs, Fibonacci Time Zones, Fibonacci Price and Time Clusters etc.

Most trading software packages have Fibonacci drawing tools which can show Fib retracements, Fib Extensions, and Fib Projections. In addition. Fib Numbers are also applied to “time” and to “price” in trading.

In the following graphic, Types of Fibonacci are shown to depict how retracement, extension, projection and expansion swings are applied using Fibonacci ratios.



Advantages & Disadvantages of Harmonic Patterns

Advantages:

1. Harmonic Patterns provide future price projections, stops in advance. This makes them leading indicators.
2. Harmonic Patterns are frequent, repeatable, reliable and do produce high probable

setups.

3. The trading rules are relatively standardized (Credit: Scott Carney and Larry Pesavento) using Fibonacci ratios.
4. Works well with defined Market Context, Symmetry, Measured Moves rules.
5. Work in all timeframes and in all market instruments.
6. Other indicator theories (CCI, RSI, MACD, DeMark…) can be used along with them.

Disadvantages:

1. Harmonic patterns are complex and highly technical to understand and master them.
2. Correct identification and automation (coding) of harmonic patterns is difficult.
3. Conflicting Fibonacci retracements/projections make them difficult to identify reversal or projection zones.
4. Complexity arises when opposing patterns form either from same swings or other swings/timeframes.
5. The risk/reward factors from un-symmetric and low-ranked patterns are pretty low.

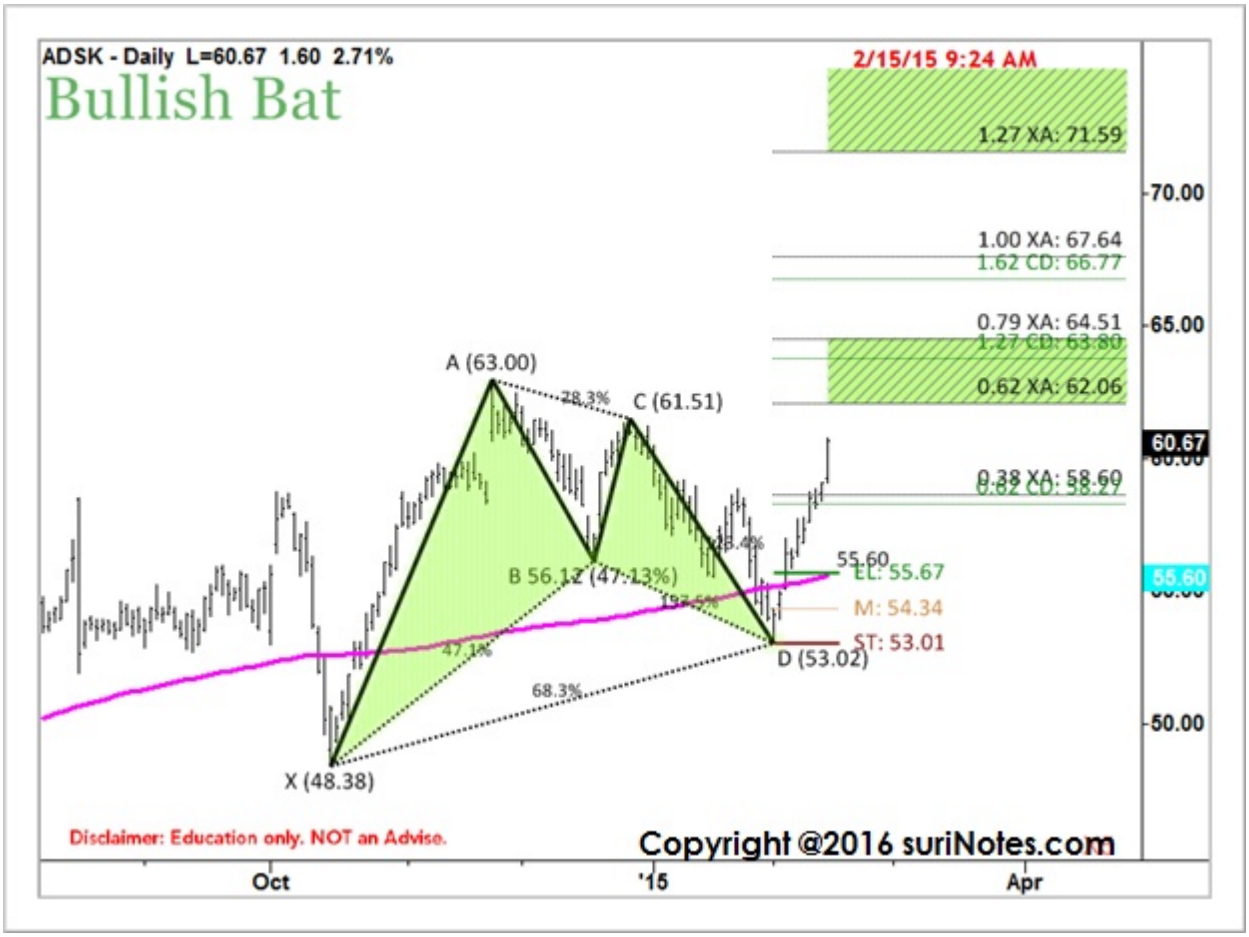
How to Trade Harmonic Patterns

Pattern Identification

Harmonic pattern identification can be a bit hard with the naked eye, but once a trader understands the pattern structure it can be relatively easily spotted by Fibonacci tools. The primary Harmonic patterns are 5-point (Gartley, Butterfly, Crab, Bat, Shark and Cypher) patterns. These patterns have embedded 3-point (ABC), 4-Point (ABCD) patterns. All the price swings between these points are interrelated and have harmonic ratios based on Fibonacci. Patterns are either forming or completed “M” or “W” shaped structures or combinations of “M” and “W”, in the case of 3-drives. Harmonic patterns (5-point) have a critical origin (X) followed by an impulse wave (XA) followed by a corrective wave to form the “EYE” at (B) completing AB leg. Then followed by a trend wave (BC) and finally completed by a corrective leg (CD). The critical harmonic ratios between these legs determine whether a pattern is a retracement-based or extension-based pattern and defines its names (Gartley, Butterfly, Crab, Bat, Shark, and Cypher). One of the significant points to remember is: All 5-point and 4-point Harmonic patterns have embedded ABC (3-Point) patterns.

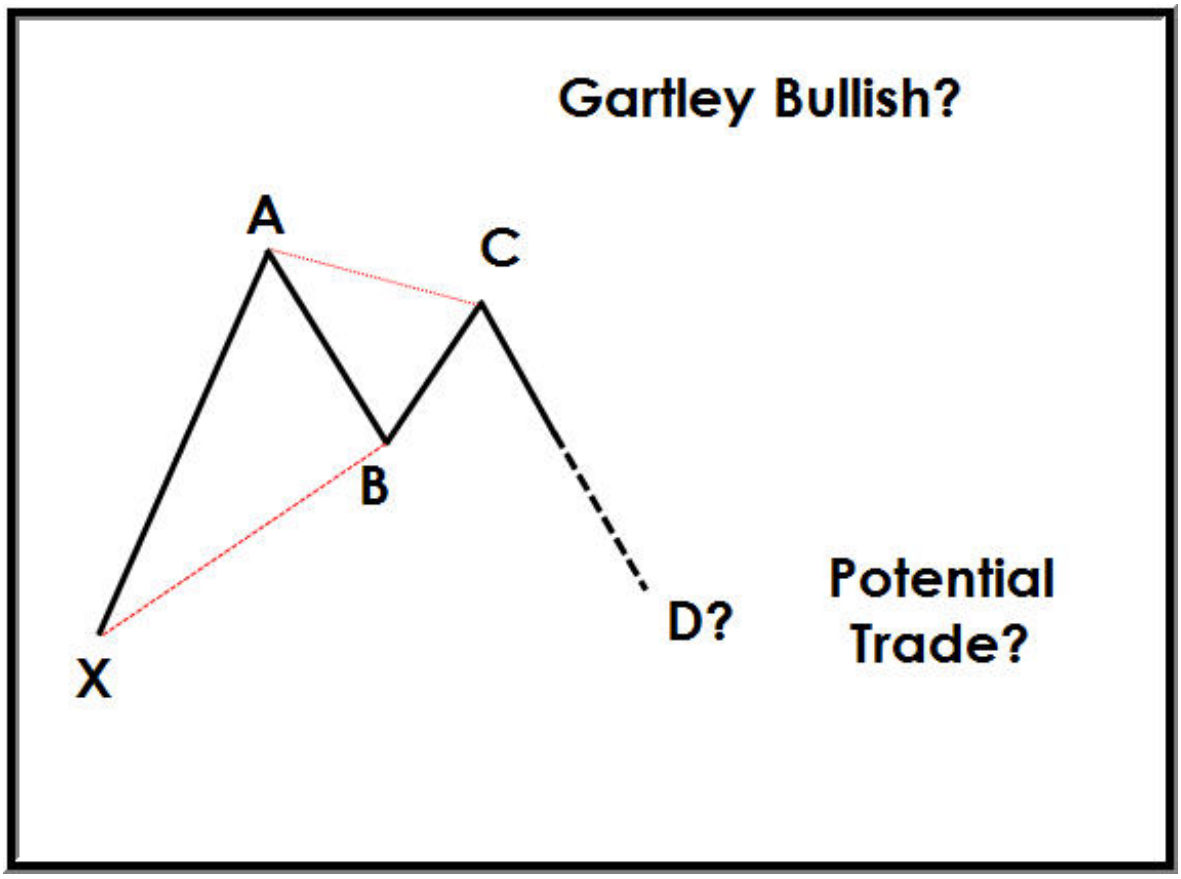
All 5-point Harmonic patterns (Gartley, Butterfly, Crab, Bat, Shark, Cypher) have similar principles and structures, and they differ by their ratios to identify them and locations of key nodes (X, A, B, C, D) but once one of the patterns is understood it may be relatively easy to grasp knowledge of others. It may help for traders to use an automated pattern recognition software to identify these patterns than using naked eye to find or force these pattern identification.

Example: *The following chart shows an example of Bullish Bat pattern with embedded ABC Bearish pattern. The identification pivots and ratios are marked on the pattern. The pattern also shows the Entry, Stop and Target levels.*



Trade Identification

In harmonic pattern setups, a trade is identified when the first 3 legs are completed (in 5-point patterns). For example, in Gartley Bullish pattern, when XA, AB, BC legs are completed and it starts to form CD leg, you would identify the potential trade may be in works. Using the projections and retracements of XA, BC legs and Fibonacci ratios we build a price cluster to identify potential Price completion zone (PCZ) and D point of the pattern.



Pattern Completion Zone (PCZ)

All Harmonic patterns have defined Pattern Completion Zones (PCZ). These PCZs are also known as price clusters formed by the completed swing (legs) confluence of Fibonacci extensions, retracements and price projections. Pattern supposed to complete its CD leg (also complete D) in this zone (PCZ) and reverse. Trades are anticipated in this zone and entered on price reversal action.

As an example, Pattern Completion Zone (PCZ) for Bullish Gartley pattern is constructed using following Fibonacci extensions and projections:

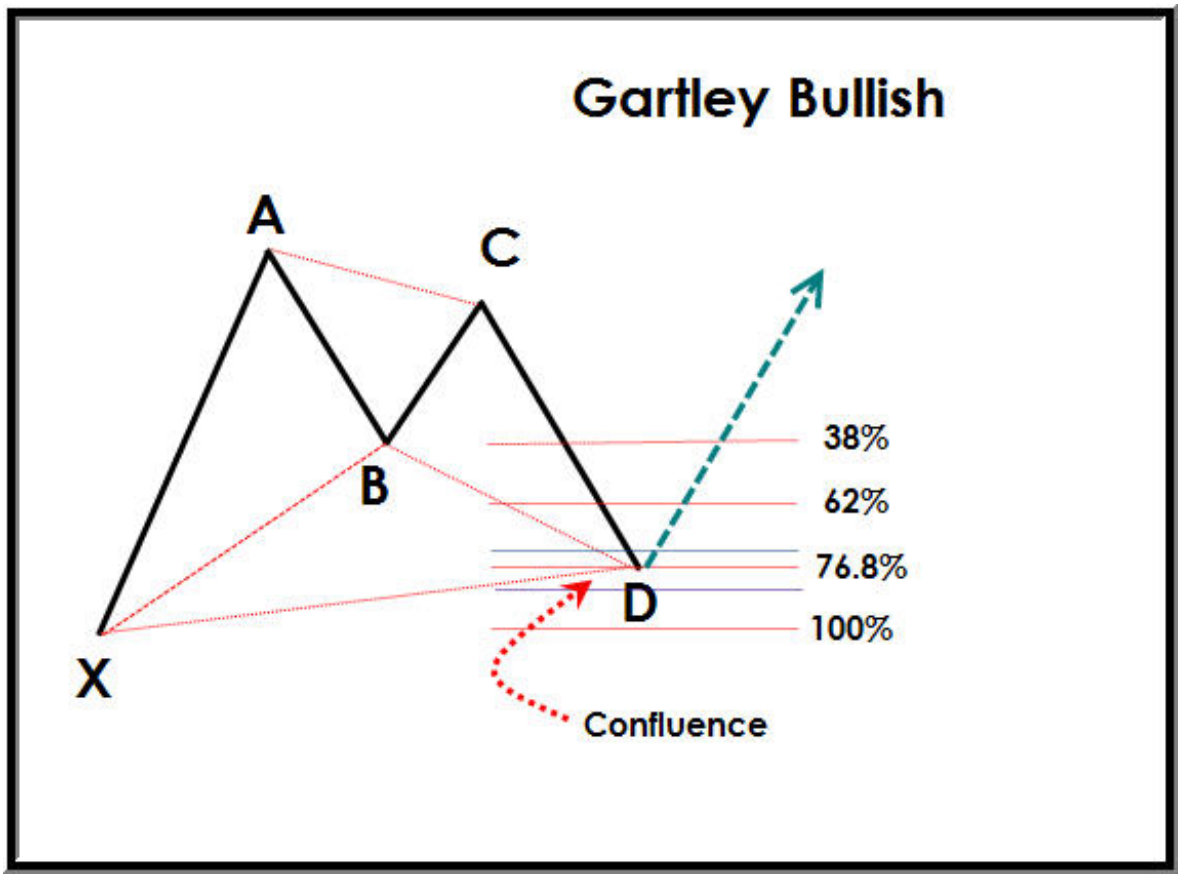
0.78 XA

1.27 BC

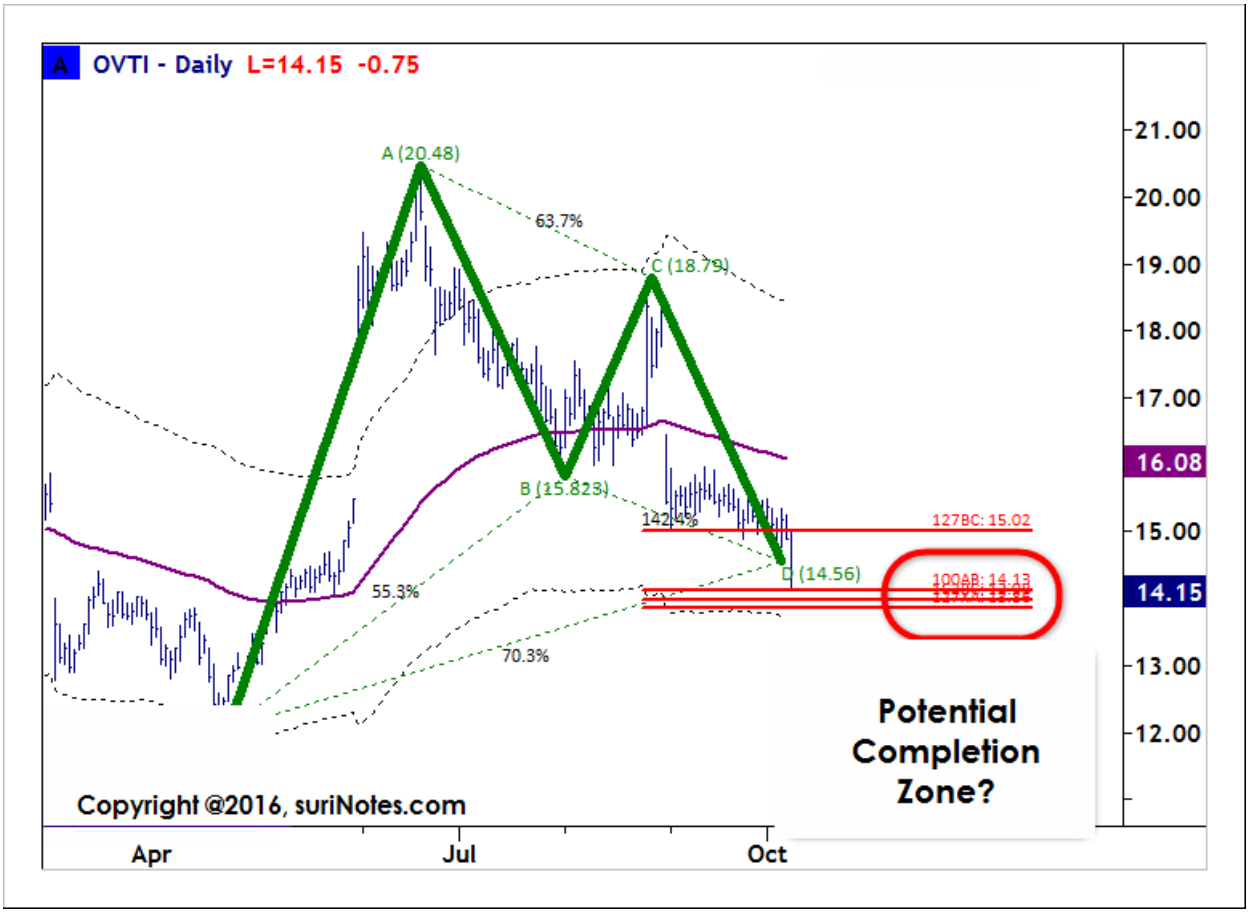
1.62 BC

AB = CD

Here is an example of Potential Completion Zone (PCZ) formation:



Here is an example of Potential Completion Zone (PCZ) formation:



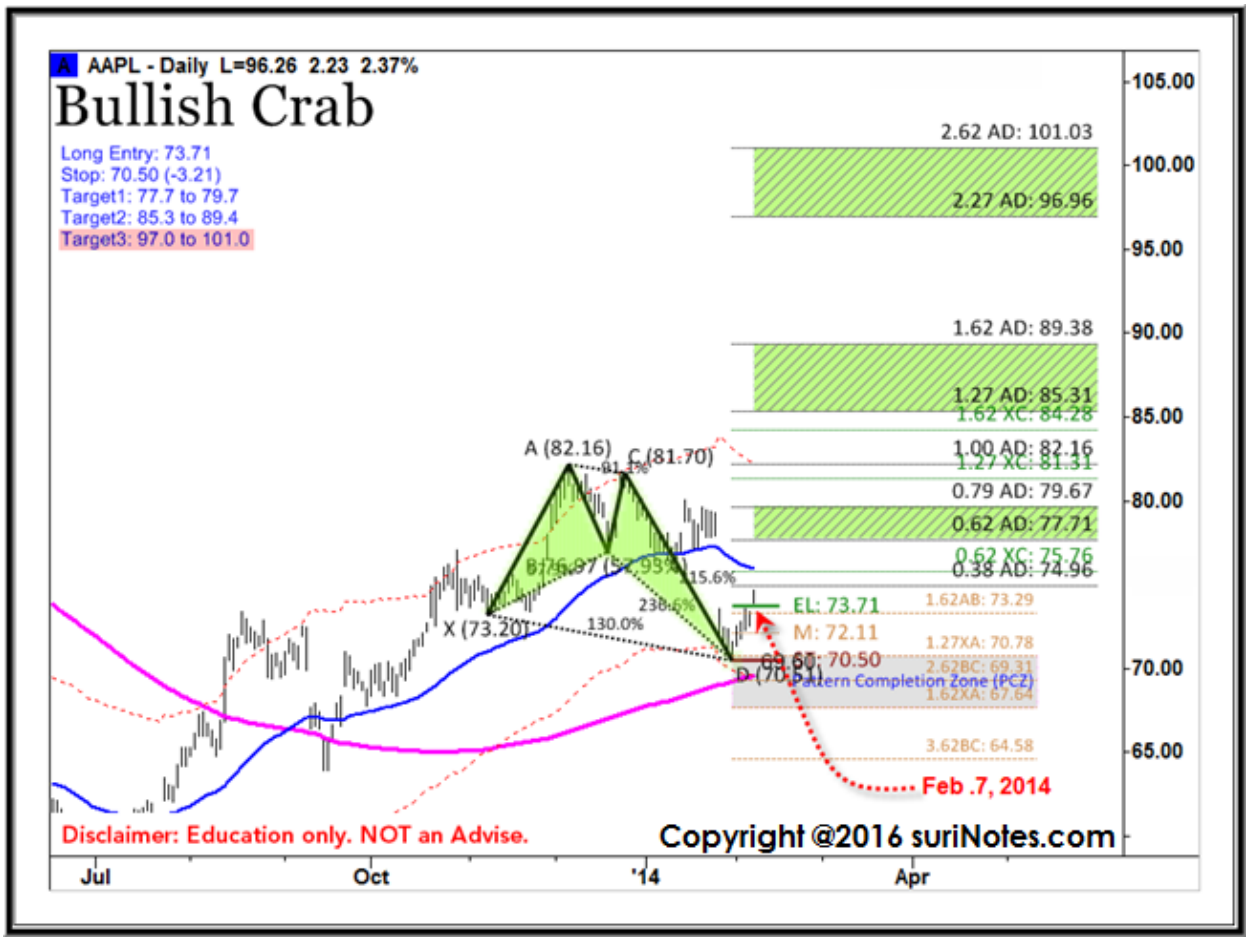
Market Context Conditions

Most technical traders use chart analysis with market context concepts to trade. Market context concept is described as how current price is reacting to certain levels (pivots, support, and resistance, MAs) and how indicators are performing relative to historic price conditions (like oversold, overbought) and where/how patterns are developing in the current timeframe or multiple timeframes, etc. Each trader develops his own market context to trade. One of the elegant ways to define market context is through a Fib. Grid structure. Fib. Grid consists of Fib. Bands (showing price reaction, trends), Pivot levels (to show historic Support/Resistance areas) and Market Structures (to show potential turning points). All these patterns are well explained in my book with clear examples. On any trading chart, Fib. Grid layout is plotted to understand how the current price is reacting to the Fib. bands and if the price is exhausted, and price trading above/below the extreme bands and how the price is reacting to the support and resistance levels defined by Pivots etc.

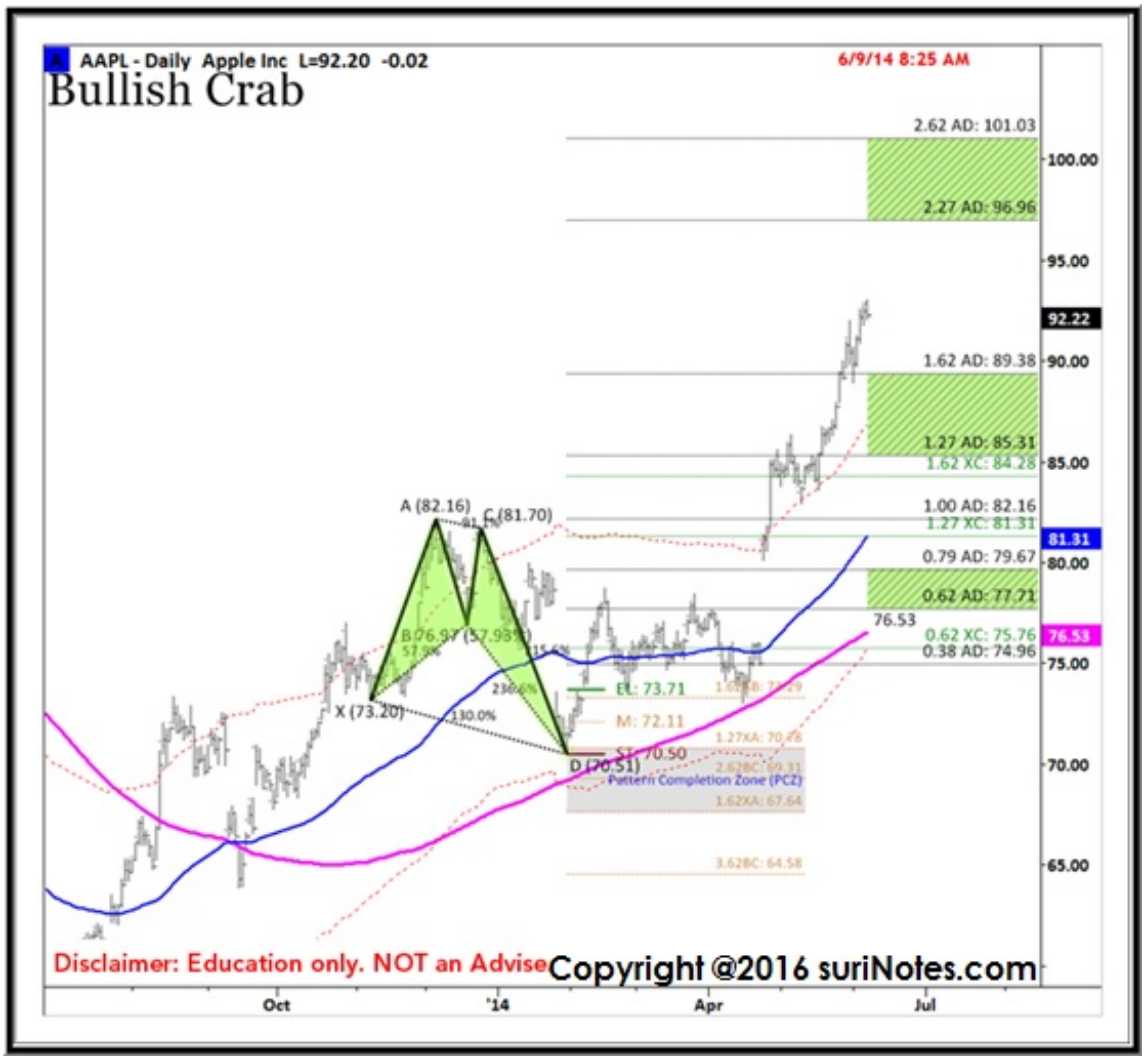
The Confluence of these levels in the Fib. Grid structure along with emerging pattern structure (and pattern target/stop levels) helps a trader make a clear trade decision. Pattern trading is very precise as each pattern has specific rules to entry/stop and targets. When combined Harmonic Pattern analysis with market context gives a great edge to trade. Harmonic Patterns also fail but their failure levels are well defined and that information is clearly known prior to the trade. Hence, Harmonic pattern trading has much more advantage than trading other trading methods.

Other Market Context/confirmation conditions and indicators: Divergence, Multiple Timeframes, Fib. Bands, Andrew's Pitchfork Analysis, Moving Averages, Pivots, Channels, Trendlines, Volume, Volatility etc.

Example: *The following example shows how Market Context is used with pattern analysis. This example shows AAPL (date: Feb. 07, 2014) formed a Bullish Crab pattern above 200-SMA and outside the Fib. Bands (A, C points) and D point is formed near lower Fib. Bands with Crab pattern. Also, notice the pattern traded below mid-Fib. Band level and trading near lower Fib. Band to signal a potential exhaustion setup. After completing Bullish Crab setup, price traded above the EL to signal a Long entry to the setup. The overall trend of APPL is also Bullish as price slope is positive above 200-SMA. On Feb. 07, 2014, a Long bullish trade is entered above 73.71 with a Stop below 70.50 (-3.21). Target levels are 77.7 to 79.7 for the Target Zone1, 85.3 -89.4 for Target Zone2.*



The following chart (June 9, 2014) shows APPL Bullish Crab pattern progression and completion of targets.



Trade Entries and Stops

Trading Harmonic patterns with computed entry levels are this author's preference rather than trading them blindly at retracement levels or reversal zones advocated by Harmonic trading pundits. Most Harmonic traders anticipate the pattern to reverse and attempt to trade these patterns in the “reversal zone” and end up taking contrarian (counter trend) trades. To enter a trade, I prefer a confirmation of reversal price-action combined with a reversal trend change from the “reversal zones.”

Most Harmonic Pattern trade entries occur around “D” point within the reversal zone. It could be a Buy (in bullish patterns) or a Sell (in bearish patterns). Usually, “D” is identified by a confluence of projections, retracements, and extensions of prior swings (legs), universally called as “reversal zone.” In my view, when prices started to reach this zone, it is signaling an opportunity for potential trade, not a signal to trade yet. The entry criteria and pattern validity are determined by various other factors like current volatility, underlying trend, volume structure within the pattern and market internals etc. If the pattern is valid and the underlying trend and market internals agreeing with the Harmonic pattern reversal, then Entry levels (EL) can be calculated using price-ranges, volatility or some combination. Stop is placed above/below the last significant pivot (in 5 and 4-Point patterns it is below D for the bullish pattern, above D for bearish patterns).

Target Zones

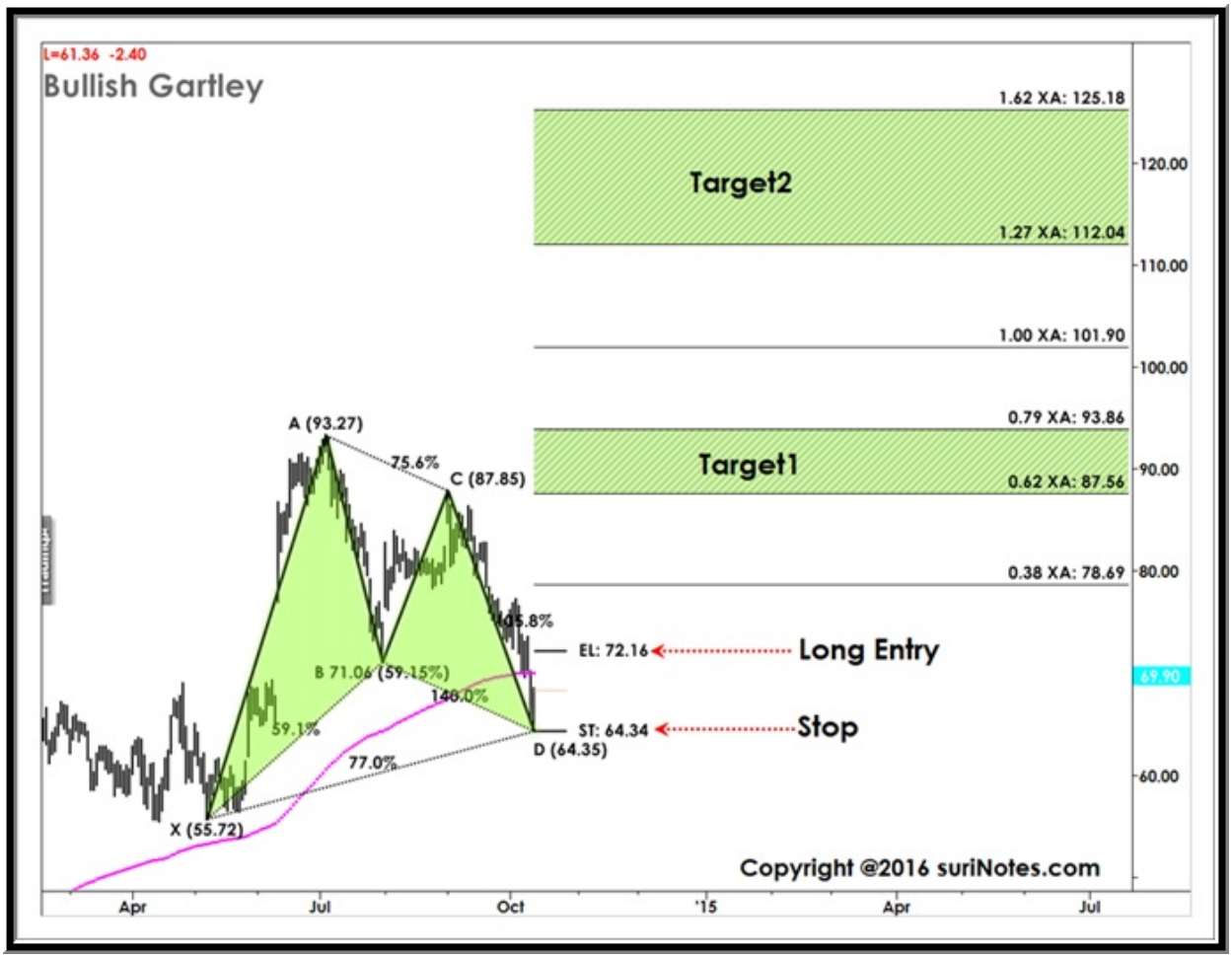
Target zones in Harmonic patterns are computed based on the retracement, extensions or projections of impulse/corrective swings and Fibonacci ratios from the action point of the pattern structure. For example, in Gartley bullish pattern, the target zones are computed using XA leg from the trade action point (D). The projections are computed using Fib. ratios like 62%, 78.6% of XA leg and added to the action point (D). The extension ratios like 1., 1.27, 1.62, 2., 2.27, 2.62 are computed for potential target levels. The primary target zones are marked computed from D as 62%-78.6% of XA leg as the first target zone and 127%-162% as the second target zone.

Target Zone1: (D + XA*0.62) to (D+XA*.786)

Target Zone2: (D + XA*1.27) to (D+XA*1.62)

It is important to note that potential target zones in harmonic patterns are computed from probability standpoint and not from the certainty. Strong money and risk management rules and full working knowledge of the pattern are necessary for any pattern trading success.

Example: *The following chart shows a Bullish Gartley Pattern, entry level, stops and target zones. The Target zones are projected using XA swing length and Fibonacci ratios from D. Ranges of 62%-79% is TargetZone1 and 127%-162% is TargetZone2.*



About the Author

This article was written by Suri Duddella, a private trader who uses proprietary mathematical and algorithmic models and pattern recognition methods. For more information about Suri or to follow his work, visit SuriNotes.com or click here.