



A Fidelity Investments Webinar Series

Identifying Chart Patterns with Technical Analysis

BROKERAGE: TECHNICAL ANALYSIS





Technical Analysis Webinar Series

Getting Started with Technical Analysis

Learn the assumptions that guide technical analysis, and get to know the basics of trend trading.

Understanding Indicators in Technical Analysis

Identify the various types of technical indicators, including trend, momentum, volume, volatility, and support and resistance.

Identifying Chart Patterns with Technical Analysis

Use charts and learn chart patterns through specific examples of important patterns in bar and candlestick charts.

Managing Risk with Technical Analysis

Manage your trading risk with a range of confirmation methods.



About Our Coauthor

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Charles D. Kirkpatrick II, CMT, is president of Kirkpatrick & Company, Inc., a technical analysis research firm that publishes the *Market Strategist* investment newsletter. A past instructor in finance at the School of Business Administration at Fort Lewis College and adjunct professor of finance at Brandeis University International Business School, he is a two-time winner of the Chartered Market Technicians Association's prestigious Charles H. Dow Award for research in technical analysis, winner of the MTA Annual Award in 2008 for "Outstanding Contributions to the Field of Technical Analysis," and winner in 2012 of the Mike Epstein Award from the MTA Educational Foundation for "Long-Term sponsorship of Technical Analysis in Academia."

He is a Chartered Market Technician, a past member of the board of directors of the Market Technicians Association, past editor of the *Journal of Technical Analysis*, past board member and vice president of the CMT Association Educational Foundation and a member of the American Association of Professional Technicians (AAPTA). He coauthored *Technical Analysis: The Complete Source for Financial Market Technicians*, the primary textbook for the CMT program and for university graduate courses on technical analysis, authored *Beat the Market* and, most recently, *Time the Markets: Using Technical Analysis to Interpret Economic Data*.

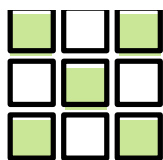
He is a graduate of Phillips Exeter Academy, Harvard College (AB), and the Wharton School (MBA) and lives with his wife in Maine.





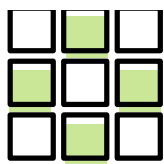
Understanding Patterns and Their Limits

Defining Patterns



- A pattern is bounded by at least two trend lines (straight or curved)
- All patterns have a combination of entry and exit points
- Patterns can be continuation patterns or reversal patterns
- Patterns are fractal, meaning that they can be seen in any charting period (weekly, daily, minute, etc.)
- A pattern is not complete or activated until an actual breakout occurs

The Limits of Patterns



Keep in Mind

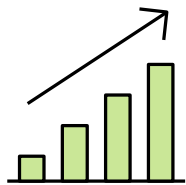
Some of our human tendencies can be dangerous for investors.

- See patterns where there aren't any
- Believe "market lore," technical and fundamental, without evidence
- Look backwards rather than forward
- Stick with original price targets of patterns after conditions have changed



Techniques for Trading Patterns

Techniques for Trading Patterns

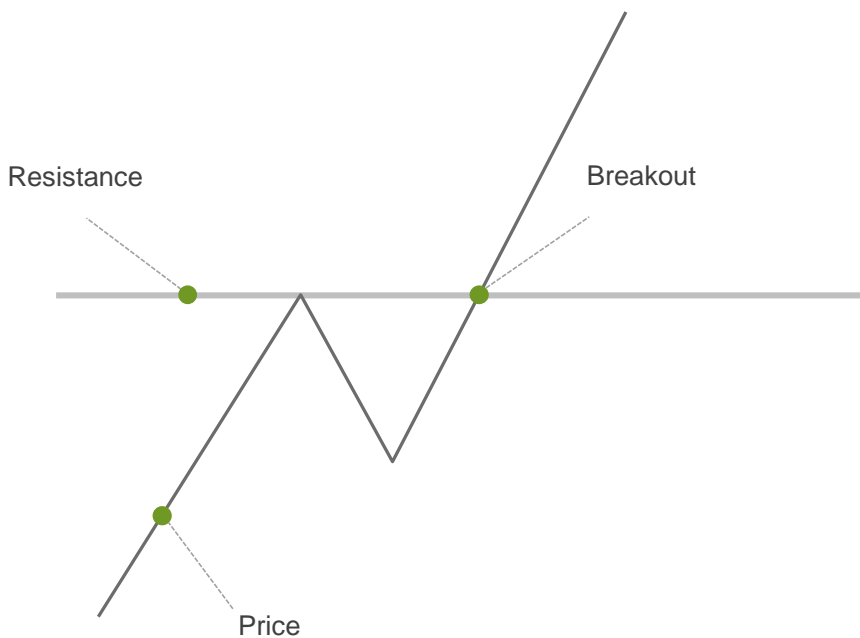


- Breakouts
- Entry Stops
- Protective Stops
- Retracements

Breakouts

Violation of Trend Line, Support or Resistance, or previous reversal point

It signifies that a change in buyer and seller behavior and signals the beginning or end of a trend.



Confirmation Filters

Confirmation Filters

Apply a confirmation filter to determine whether a breakout has taken place.

Types of Filters

- Intrabar
- Multiple closes
- Time
- Percentage or point
- Money

Entry Stops

Entry Stops

Buy stop orders are used to enter trades once the price breaks out.



False and Failed Breakouts

False Breakout

Price breaks out but almost immediately returns back through its breakout price.

Failed Breakout (Trap)

False breakout occurs and the price then breaks out in the opposite direction.



Protective Stops

Protects Capital

Determines the amount of capital risk before entry

Types of placement

- Filters, such as percent, points, or money
- Trend line, support or resistance level with filter



Trading False Breakouts Using Protective Stops

Example

- Enter on breakout
- Place protective stop outside breakout bar opposite from breakout direction
- Place entry stop at same level (called a "stop and reverse" order)
- If price continues in direction of breakout, profit from breakout entry
- If breakout is false, profit from stop and reverse



Retracements

Counter Trend Correction

Types

- Pullback (on breakout down)
- Throwback (on breakout up)

Waiting for

- Don't always occur
- Performance can suffer when they do





Construction of Common Chart Patterns

Common Chart Patterns

Multi-Bar Patterns

Horizontal Congestion

- Double and Triple Tops/Bottoms
- Rectangles

Triangles

- Symmetrical
- Ascending and Descending
- Wedges

Other

- Head and Shoulders
- Cup and Handle

Candlestick Patterns

- Doji
- Harami
- Hanging Man/Hammer
- Shooting Star/Inverted Hammer
- Engulfing
- Dark Cloud/Piercing

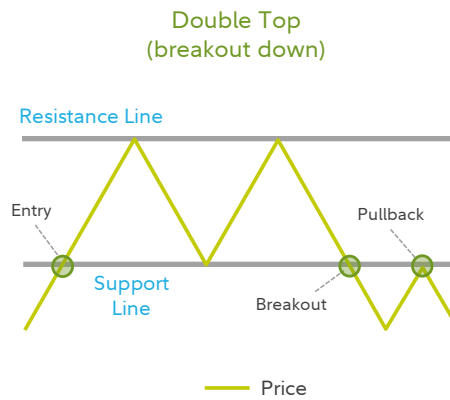
Short-Term Patterns

- Pennant/Flag
- Gaps
- Pipe Bottom
- Narrow Range

Horizontal Congestion: Double Top

Characteristics:

- Two successive peaks separated by an opposite reversal point
- Either rounded or pointed peaks that are usually at roughly the same price (resistance level)
- Price must break out of middle reversal point



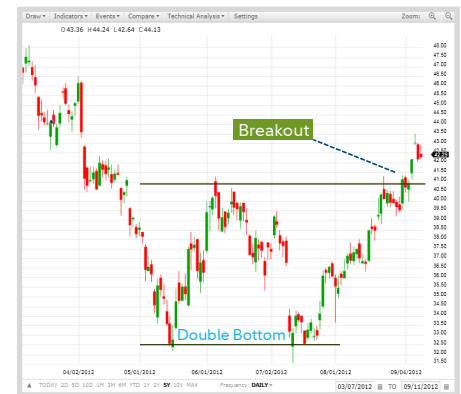
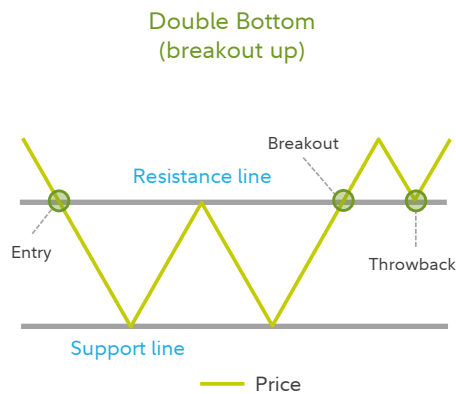
Calculate target price:

Taking the height from the highest peak to the trough and then subtracting the amount from the breakout price to the downside.

Horizontal Congestion: Double Bottom

Characteristics:

- Two successive troughs separated by a peak
- Either rounded or pointed troughs that are usually at roughly the same price (support level)
- Price must break out of middle peak



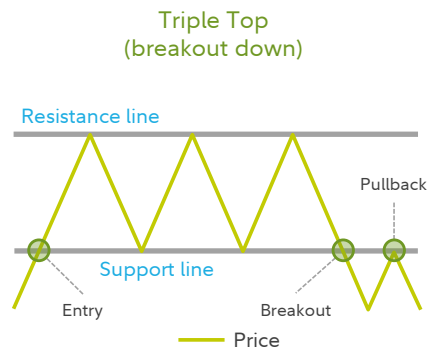
Calculate target price:

Taking the distance from the troughs to the peak and then adding that amount from the breakout price to the upside.

Horizontal Congestion: Triple Top

Characteristics:

- Three distinct peaks at roughly the same price level separated by two intermittent troughs
- Breakout occurs when price exceeds the extreme of the intermittent trough or a trend line connecting those points



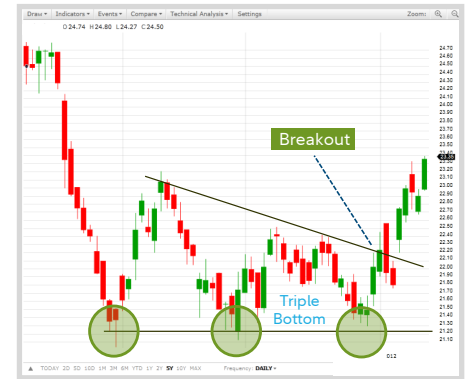
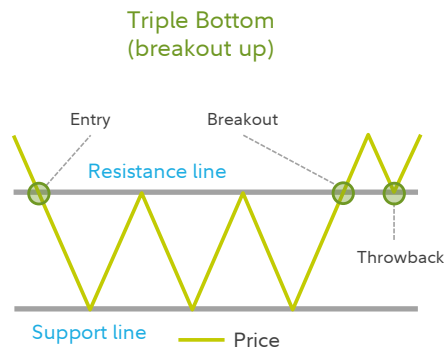
Calculate target price:

Take the height from the highest peak to the lowest trough in the pattern. Then subtract that amount from the lowest trough in the pattern to generate a price target.

Horizontal Congestion: Triple Bottom

Characteristics:

- Three distinct troughs at roughly the same price level separated by two intermittent peaks at any level
- Breakout occurs when price exceeds the extreme of the intermittent peaks or a trend line connecting those points
- Best performance may be after a sustained decline*
- An average performance, but watch for failures*



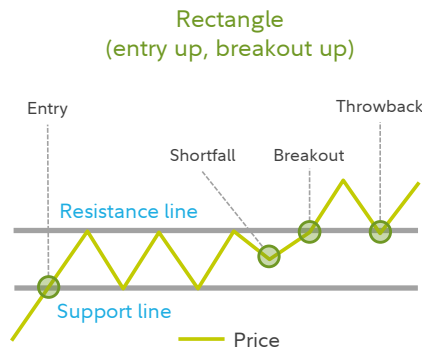
Calculate target price:

Take the height from the highest peak to the lowest trough in the pattern. Then add that amount to the highest peak in the pattern to generate a price target.

Horizontal Congestion: Rectangles

Characteristics:

- Trading range with support and resistance levels bounding price action
- Slight tilt, similar to horizontal channel
- Often has many false breakouts*
- Things to consider:
 - Confirm a breakout
 - "Shortfall" often indicator of eventual breakout direction
- Best occurrence may be bottom breaking upward*



Calculate target price:

Take the height from the resistance line to the support line. Then either add that amount to the resistance line to generate a price target for an upside breakout, OR subtract that amount from the support line to generate a price target for a downside breakout.

Characteristics:

-
- Symmetrical Triangle (breakout up)**
- The chart illustrates a symmetrical triangle pattern where the price (yellow line) moves between two converging trendlines (grey lines). The pattern is characterized by a series of peaks and troughs that narrow as the price converges. Key points labeled on the chart include:
- Entry:** The point where the price first enters the triangle from below.
 - Breakout:** The point where the price breaks out of the triangle, moving upwards.
 - Throwback:** A temporary retracement of the price after the initial breakout.
 - Cradle:** A point where the price retraces after a throwback, finding temporary support before continuing its upward movement.
- The legend indicates that the yellow line represents the **Price**.



Take the height from the highest peak in the pattern to the lowest trough in the pattern. Then either add it (for upward breakouts) to the breakout price or subtract it (for downward breakouts) from the breakout price to generate a price target.

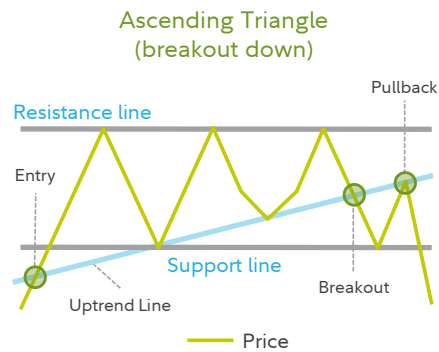
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*Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Triangle: Ascending

Characteristics:

- Bounded by a horizontal upper trend line and an upward sloping lower trend line. Each bound is a straight trend line
- Prices can break in either direction, but more commonly upward*
- Breakout usually occurs in pattern. About average failure rates but many small false breakouts*
- Post breakout performance average on upside but above average on downside*



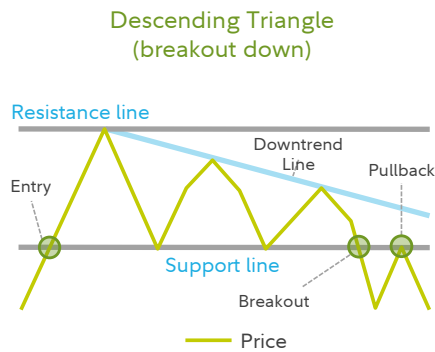
Calculate target price:

Take the height from the highest peak in the pattern to the lowest trough in the pattern. Then either add it (for upward breakouts) to the breakout price or subtract it (for downward breakouts) from the breakout price to generate a price target.

Triangle: Descending

Characteristics:

- Bounded by two trend lines; the lower is horizontal and the upper slopes downward
- Prices can break in either direction but most commonly downward*
- Above-average performance on upside break; retracements occur often*



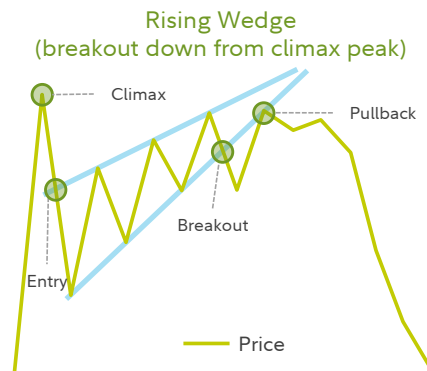
Calculate target price:

Take the height from the highest peak in the pattern to the lowest trough in the pattern. Then either add it (for upward breakouts) to the breakout price or subtract it (for downward breakouts) from the breakout price to generate a price target.

Triangle: Wedge

Characteristics:

- Bounded by two trend lines, each headed in the same direction; Price must touch a trend line at least five times (3 times on one and 2 times on the other) before a breakout
- Often occur following a panic (declining wedge) or bubble (rising wedge)
- Performance in both types is below average, and retracements are very common*



Calculate target price:

For downward breakout, the lowest trough in the pattern is the price target. For upward breakouts, take the height from the highest peak in the pattern to the lowest trough in the pattern and add that amount to the breakout price for a price target.

Head and Shoulders: Top

Characteristics:

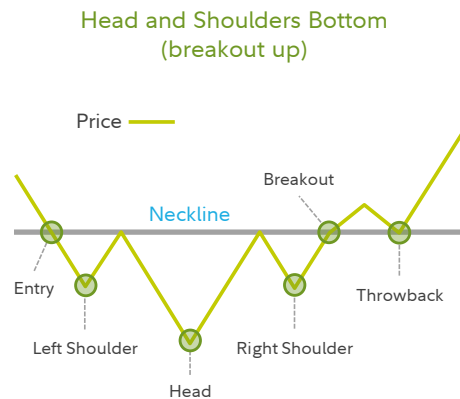
- Three peaks with center peak higher than the other two
- Shoulders should be at approximately the same level and the head higher
- Line connecting the two troughs between the peaks is called the "neckline"
- Pattern is only complete on breaking the neckline
- Target is the distance from the head to the neckline projected from the neckline
- This is a standard pattern for tops and has one of the lowest failure rates



Head and Shoulders: Bottom (Inverse)

Characteristics:

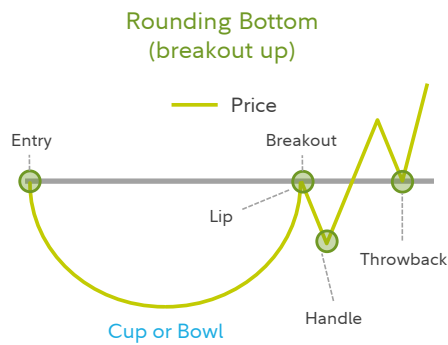
- Inverted but otherwise identical to a top pattern except not as profitable*



Cup and Handle (also "Saucer")

Characteristics:

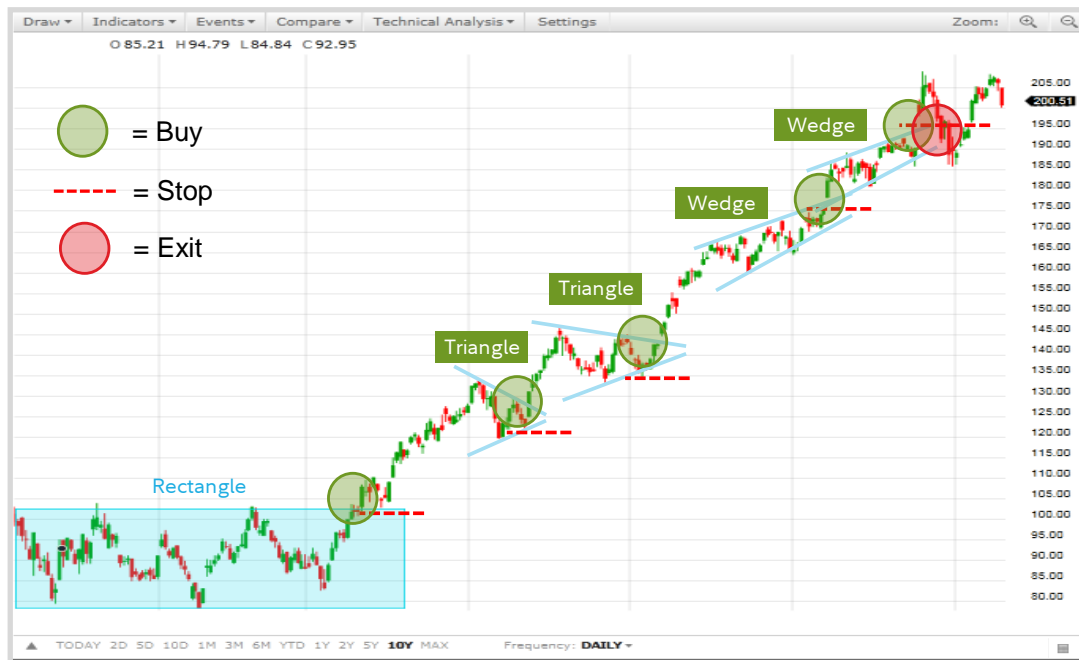
- Pattern consists of a rounded bottom (not a "V" bottom), two "lips" at each end, and a "handle" (similar to a flag pattern) from the handle
- Pattern is complete with breakout above both lips
- Often have a throwback
- The pattern's performance ranks about average for bottom patterns*



Calculate target price:

Take the height of the right cup lip to the bottom of the cup, then add that amount to the breakout price.

Trading with Patterns



*Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Best Multi-Bar Patterns

Upward Signals

- Descending Triangle
- Rectangle
- Pipe Bottom

Downward Signals

- Flag
- Head and Shoulders top
- Island Reversal

General Information about a Candlestick

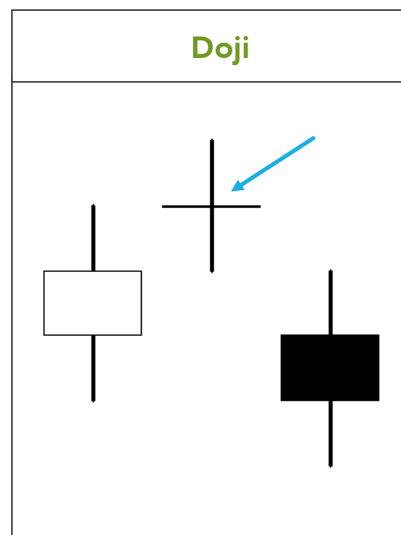
Characteristics:

- Traditionally, candlestick patterns are reversal patterns, meaning they are used to identify when a trend is ending
- Candlestick patterns are often used with longer-term trends, thus, upward reversal patterns after a correction in a longer upward trend show the best performance, and vice versa for downward reversal patterns in a long downward trend
- Be careful not to act on a perceived candle pattern until the pattern has formed and is activated by a breakout in a certain direction

Doji

Characteristics:

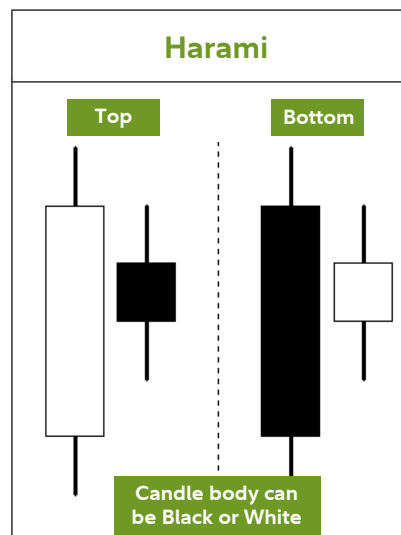
- A one-candle pattern formed when the open and close are the same price, and the high and low are roughly equidistant from the open and close
- Extremely common
- Indicates indecision in the marketplace and thus is a possible warning of price change



Harami

Characteristics:

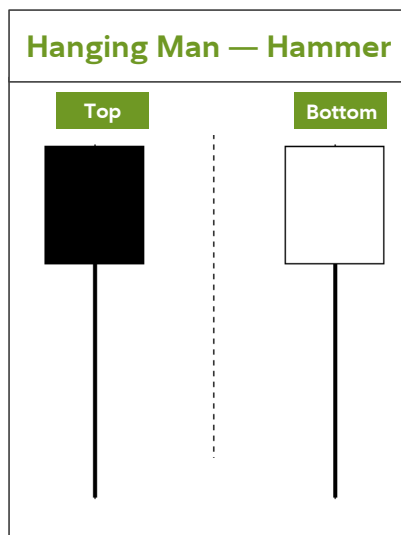
- A two-candle pattern of a large body of either color followed by a small body of the opposite color; The second body is completely within the body of the large body and is called a "spinning top"
- Although common belief is that the harami is a reversal pattern, many report that it has the potential of breaking either way
- A variation that has a doji instead of a spinning top as the second candle has equally average performance and random breakout*



Hanging Man and Hammer

Characteristics:

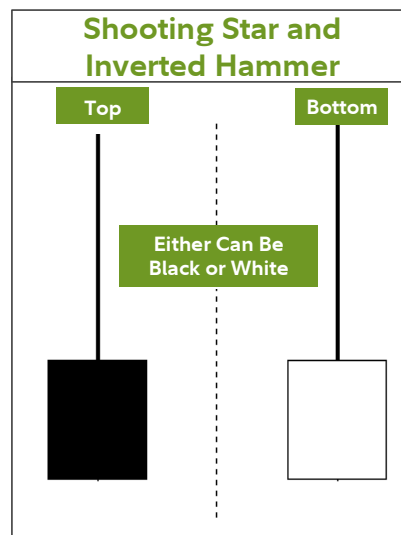
- One-candle patterns differentiated by the color of the body. Each pattern has a high that coincides with either the opening or closing price
- Hanging man, thought to be a continuation pattern, actually breaks in either direction randomly with a slight upward bias. Its overall performance is below average*
- Hammers occur relatively frequently but have below-average performance*



Shooting Star and Inverted Hammer

Characteristics:

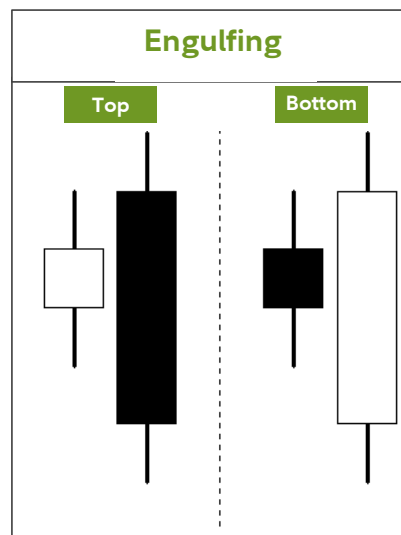
- A one-candle inverted hanging man or hammer pattern. Hammers by themselves have white bodies and shooting stars have black bodies
- As a one-candle pattern, the shooting star has average performance. The same is true for the single inverted hammer*



Engulfing

Characteristics:

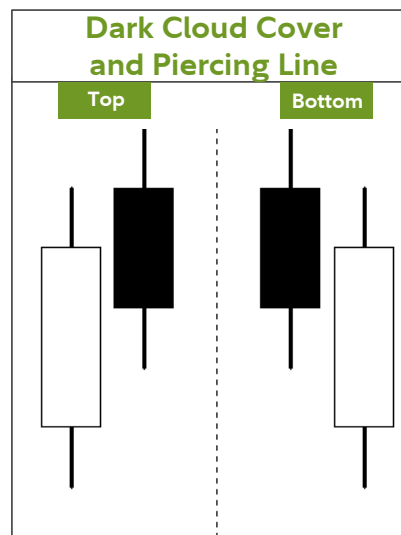
- A two-bar pattern in which the second bar body completely engulfs the first bar body*
- A bottom engulfing pattern, with a short black body followed by a tall white body, is thought to be an upward reversal pattern and actually has very good performance on a downward breakout in a downward trend*



Dark Cloud Cover and Piercing Line

Characteristics:

- The dark cloud cover is a two-bar pattern where the second bar closes higher than the first and is black versus white in the first bar
- The piercing line is the opposite of the dark cloud cover in that the second bar is white and lower than the first bar which is black
- The dark cloud is thought to be a downward reversing pattern
- The piercing line pattern is thought to be an upward reversing pattern*

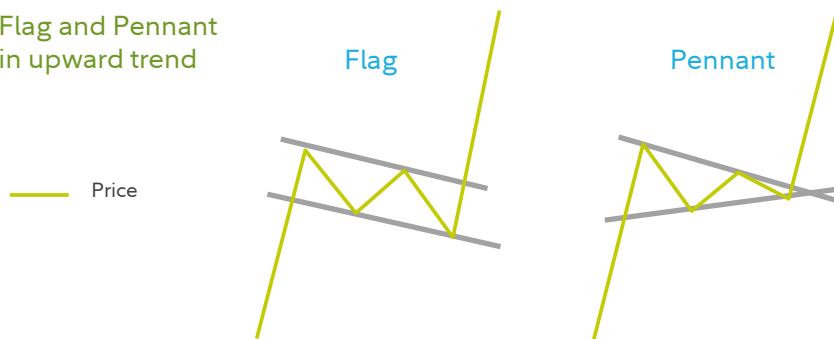


Pennant/Flag

Characteristics:

- Pennant and flag patterns are variations of the same pattern
- These patterns are often preceded by a steep, sharp price change, up or down, and form a short consolidation that appears like a triangle or flag. Generally, the pattern slopes slightly in the direction opposite from the trend
- The breakout in either direction is often followed by a move that equals the earlier steep, sharp price change into the pattern

Flag and Pennant
in upward trend



Calculate target price:

Take the height from the start of the "flag pole" to the highest peak in the pennant. Add that amount to the bottom of the pennant for an upward price target.

Gaps

Characteristics

- Definition – no trading (gap) at specific prices
- Gaps can be considered “up” or “down”
- Gaps are caused by appreciable changes in supply and demand from one close to the following open

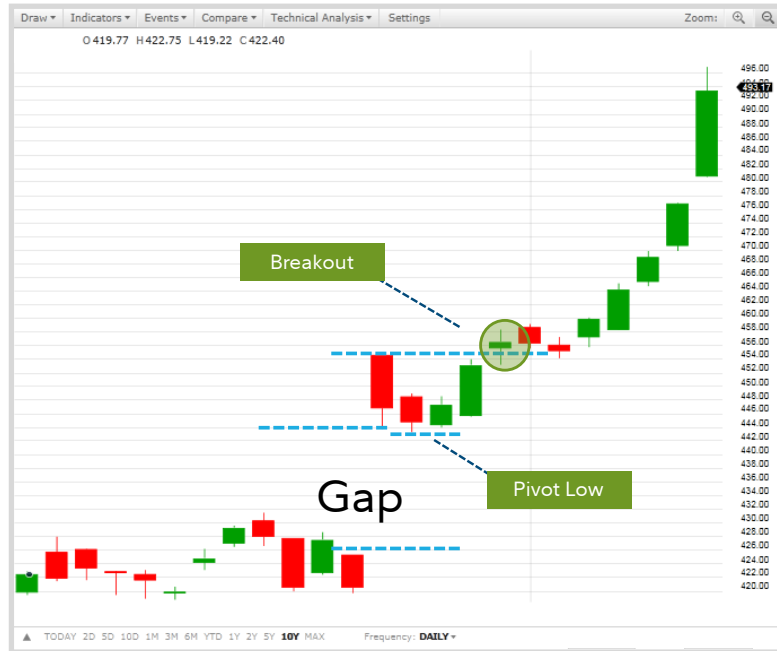


⁴⁰ *Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Gaps

Characteristics

- Gaps are generally profitable on breakouts from patterns, trends, support or resistance
- A method of trading a gap is the "explosion gap pivot." It assures that the gap is valid
- After the gap, wait for "throwback." If throwback "covers" the gap, no action. If the throwback stops, this is called the "pivot low." Place buy entry above high of the gap bar
- "Pivot" is the lowest level of the post-gap breakout
- Protective stops initially placed at gap low and then below pivot low



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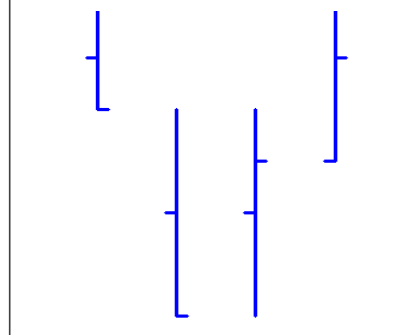
*Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Two-Bar Reversal Bottom or Pipe Bottom

Characteristics:

- Two bars and occurs at the end of a large trend, up or down trend. Ideally, the first bar, in a bottom pattern, closes at the low, and the second bar closes in the upper half of the range. It is more reliable in weekly data
- Bar ranges are larger than preceding bar ranges
- Action occurs on breakout through second bar

Two-Day Reversal Bottom (or Pipe Bottom)



Calculate target price:

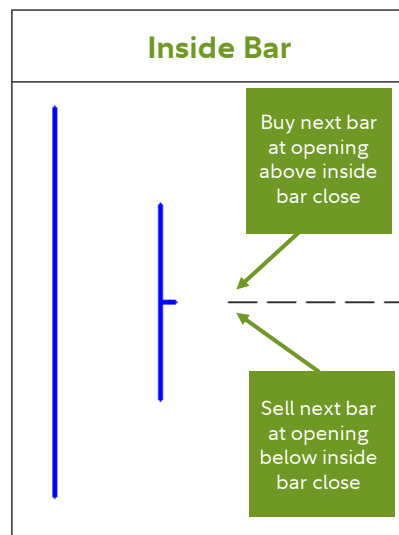
Take the height from the taller of the two bars to the lower of the two bars. Add that amount to the taller of the two bars to get a price target.

⁴² *Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Volatility Patterns

Characteristics:

- Dull activity is known as "low volatility." New trends often begin from periods of low volatility
- One way to look at volatility is to observe the relationship between price bars
- "Range" is the spread between high and low in a price bar
- If a bar is followed by a bar with less range, volatility is declining; the second bar is called a "narrow range" bar
- When this second bar's range is contained within the range of its preceding bar, it is called an "inside bar."

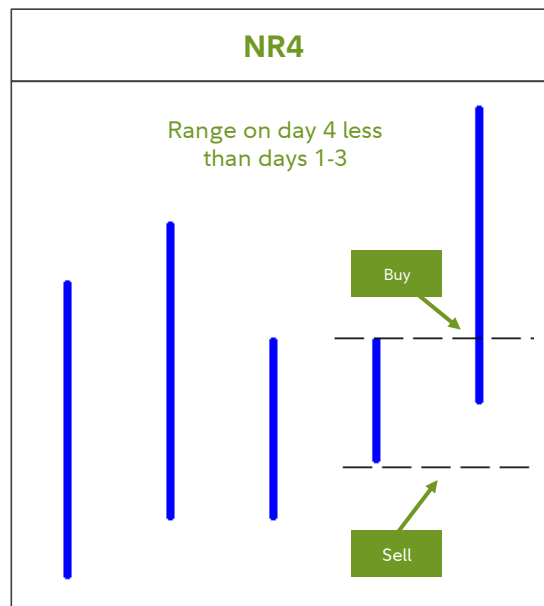


⁴³ *Source: *Technical Analysis: the Complete Resource for Financial Market Technicians*, 2nd ed.

Narrow Range

Characteristics:

- One low volatility pattern is called a “Narrow Range” pattern and consists of a bar with a range narrower than its preceding bars
- The graph shows a four-bar, Narrow Range pattern (NR4) with four bars, the fourth bar having a narrower range than the preceding three bars
- The breakout occurs on a break above or below the high or low of the narrow range





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Investing involves risk, including risk of loss.

Past performance is no guarantee of future results

Stop loss orders do not guarantee the execution price you will receive and have additional risks that may be compounded in periods of market volatility. Stop loss orders could be triggered by price swings and could result in an execution well below your trigger price.

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