

TeleTrader Professional

Study Reference



TeleTrader Software GmbH



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Study Reference

This study reference gives you an overview about the indicators and signals that are available in TeleTrader Professional. For every study, you will find a description of the study and its parameters.

Please note that the underlying functions of some studies that can be seen on the **Functions** tab in the **Study Editor** are not described separately. Only studies that can be inserted in a chart or price page (**Indicators** and **Signals** tabs) are described here.

A Kamu Elder Ray Digital

Function Name: `aka_er_dig`

Tags: Moving Averages

Category: Trend

A technical indicator that measures the amount of buying and selling pressure in the market. This indicator consists of two separate indicators known as "bull power" and "bear power". These figures allow a trader to determine the position of the price relative to a certain exponential moving average (EMA). Bull Power = Daily High - n-period EMA, Bear Power = Daily Low - n-period EMA; Technical traders will use the values of the bull and bear power along with divergence to make transaction decisions. Long positions are taken when the bear power has a value below zero but is increasing and the bull power's latest peak is higher than it was previously. A short position is taken when the bull-power value is positive but falling and the bear power's recent low is lower than any other previous bottom. The slope of the EMA can also be used in both cases to help confirm the direction of the trend.

Author: Dr. Alexander Elder

Link: <http://www.investopedia.com/terms/e/elderray.asp>

Parameters

Period

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

Acceleration Bands

Function Name: `ac_band`

Tags: Bands

Category: Volatility

The Acceleration Bands are plotted around a simple Moving Average as the midpoint. The upper and lower bands are of equal distance from this midpoint. The author recommends that Closes outside the indicator's bands should be used for identifying breakouts on weekly and monthly timeframes. On shorter time frames, the upper and lower bands should be used as support and resistance levels.

Author: Price Headley



Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

factor

Default Value: 0.001 | Minimum: 0 | Maximum: 1

Type: Numeric

Acceleration Deceleration Oscillator

Function Name: [ac](#)

Tags: [Oscillator](#)

Category: [Momentum](#)

The Acceleration-Deceleration Oscillator plots the difference between the Awesome Oscillator and a Moving Average of the Awesome Oscillator.

When it is above the zero line and there are two consecutive bars whose highs are higher than the preceding bar's, this is supposed to be a buy signal. When it is below the zero line and there are two consecutive bars whose lows are lower than the preceding bar's, this is supposed to be a sell signal.

Author: Bill Williams

Parameters

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

Accumulate Net Line

Function Name: [accumulate_net_line](#)

Tags: [Statistics](#)

Category: [Market Breadth](#)

The Accumulation Net Line is a cumulative total of the different between two instruments which can specific by users.



Parameters

StartYear	<i>Default Value: 2010 Minimum: 1800 Maximum: 2100</i> <i>Type: Numeric</i>
StartMonth	<i>Default Value: 5 Minimum: 1 Maximum: 12</i> <i>Type: Numeric</i>
StartDay	<i>Default Value: 15 Minimum: 1 Maximum: 31</i> <i>Type: Numeric</i>
StartHour	<i>Default Value: 0 Minimum: 0 Maximum: 23</i> <i>Type: Numeric</i>
StartMinute	<i>Default Value: 0 Minimum: 0 Maximum: 59</i> <i>Type: Numeric</i>
EndYear	<i>Default Value: 2012 Minimum: 1800 Maximum: 2100</i> <i>Type: Numeric</i>
EndMonth	<i>Default Value: 3 Minimum: 1 Maximum: 12</i> <i>Type: Numeric</i>
EndDay	<i>Default Value: 5 Minimum: 1 Maximum: 31</i> <i>Type: Numeric</i>
EndHour	<i>Default Value: 0 Minimum: 0 Maximum: 23</i> <i>Type: Numeric</i>
EndMinute	<i>Default Value: 0 Minimum: 0 Maximum: 59</i> <i>Type: Numeric</i>

Accumulation Distribution Line

Function Name: [acdi_line](#)

Tags: [ACDI Oscillator](#)

Category: [Momentum](#)

A momentum indicator that attempts to gauge supply and demand by determining whether investors are generally "accumulating" (buying) or "distributing" (selling) a certain stock by indentifying divergences between stock price and volume flow.

In practice, this indicator is used to find situations in which the indicator is heading in the opposite direction as the price. Once this divergence has been identified, the trader will wait to confirm the reversal and make his or her transaction decisions using other technical indicators.



Parameters

Period

Default Value: **10** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Accumulation Swing Index

Function Name: [accum_swing_index](#)

Tags: None

Category: [Momentum](#)

The Accumulation Swing Index is a cumulative total of the Swing Index of each trading day over time. The Swing Index is a value from 0 to 100 for an up bar and 0 to -100 for a down bar. It uses the Open, High, Low and Close prices of a two-day market period in an attempt to identify market direction, and in turn, to identify realistic market swings.

The Accumulative Swing Index is used to give a better long-term picture than the Swing Index. If the long-term trend is up, the Accumulative Swing Index is a positive value, and if the long-term trend is down, the Accumulative Swing Index is a negative value. If the long-term trend is sideways (non-trending), the Accumulative Swing Index fluctuates between positive and negative values.

This indicator is primarily used to analyze futures but can be applied to stocks as well.

Author: Wells Wilder

Link: <http://www.investopedia.com/articles/technical/02/100702.asp>

Parameters

limitMove

Default Value: **3** | Minimum: **-100** | Maximum: **20000**

Type: Numeric

ACD Method

Function Name: [acd](#)

Tags: [Range](#)

Category: [Price](#)

The "ACD Method" provides price points at which to buy and sell as determined by the opening range of a stock or commodity.

Only suitable for 1min-compression.

Parameters:

initialhour, initialminute: the time when the trading session at a certain stock exchange is starting

op_range: minutes of opening range

range_to_a: level for the 'A' point relative to the opening range



range_to_c: level for the 'C' point relative to the opening range

Author: Mark B. Fisher

Source: "The Logical Trader: Applying a Method to the Madness" by Fisher, Mark B.

Parameters

initialhour

Default Value: 10 | Minimum: 0 | Maximum: 23

Type: Numeric

initialminute

Default Value: 30 | Minimum: 0 | Maximum: 59

Type: Numeric

op_range

Default Value: 30 | Minimum: 1 | Maximum: 60

Type: Numeric

range_to_a

Default Value: 0.7 | Minimum: 0 | Maximum: 10

Type: Numeric

range_to_c

Default Value: 1 | Minimum: 0 | Maximum: 10

Type: Numeric

Advance Decline Line

Function Name: `ad_line`

Tags: None

Category: [Market Breadth](#)

The Advance Decline Line is used as a measure of market breadth. The Advance Decline Line is a cumulative total of the difference between advancing issues and declining issues and has been proven as an effective measure of the stock market's strength.

For example, if a stock market index is rallying but there are more issues declining than advancing, then the rally is narrow and much of the stock market is not participating. To plot the Advance-Decline Line accurately, the chart must contain both the Advancing Issues and the Declining Issues and the inputs must specify the correct data number for each.

Parameters

Index

Type:



Advance Decline Ratio

Function Name: `ad_ratio`

Tags: None

Category: Market Breadth

The Advance Decline Ratio calculates the ratio of rising stocks to falling stocks. It is formulated by dividing the number of rising stocks by the number of declining stocks.

For example, if a stock market index is rallying but there are more issues declining than advancing, then the rally is narrow and much of the stock market is not participating. To plot the Advance-Decline Ratio accurately, the chart must contain both the Advancing Issues and the Declining Issues and the inputs must specify the correct data number for each.

Parameters

Index

Type:

ADX Crosses ADXR

Function Name: `adx_adxr`

Tags: Crossover

Category: Trend

The ADX Crosses Below ADXR study marks a bar if the Average Directional Index crosses below Average Directional Index Rating.

Parameters

Period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Alligator

Function Name: `alligator`

Tags: None

Category: Trend

The Alligator indicator can be described as a compass to keep you trading in the right direction. It is a combination of three Smoothed Moving Averages at the mid price, referred to as the Alligator's Jaw (blue), the Alligator's Teeth (red) and the Alligator's Lips (green).

When all three lines are intertwined, the Alligator is "asleep", which indicates a range-bound market. When the Alligator "opens its mouth" (i.e., the three lines move away from each other), this indicates the start of an upwards or downwards trend. When it "goes to sleep" again (converging lines), it is time to fix the profits.



If the Alligator is "awake", a price above the Alligator's mouth signals an uptrend, a price below signals a downtrend.

Author: Bill Williams

Analyzer Helper

Function Name: analyzerHelper

Tags: None

Category: Other

The Analyzer Helper uses an area to cover the space between lower and upper boundary of analyst's recommendations for symbols from the TeleTrader Analyzer.

Arms Index TRIN

Function Name: trin

Tags: None

Category: Market Breadth

The Arms Index is also referred to as TRIN, an acronym for Trading Index. It is a volume based indicator which determines market strength and breadth by analyzing the relationship between advancing and declining issues and their respective volume. An Index value of 1 indicates that the ratio of up volume to down volume is equal to the ratio of advancing issues to the declining issues. The market is said to be in a neutral state when the Index equals 1, since the up volume is evenly distributed over the advancing issues and the down volume is evenly distributed over the declining issues.

Author: Richard Arms

Link: http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:trin

Parameters

Index

Type:

Period

Default Value: **14** | Minimum: **1** | Maximum: **99999**

Type: Numeric

Shift

Default Value: **0** | Minimum: **0** | Maximum: **100**

Type: Numeric

Aroon

Function Name: aroon



Tags: None

Category: Momentum

The Aroon indicator was developed in 1995. This indicator consists of two lines, Aroon Up and Aroon Down. Aroon Up is the amount of time (on a percentage basis) that has elapsed between the start of the time period and the point at which the highest price during that time period occurred. If the stock is setting a new low for the given time period, Aroon Up will be zero. On the other hand, if the stock closes higher than it has during the rest of the time period, Aroon Up will be +100. Aroon Down is calculated in just the opposite manner, looking for new lows instead of new Highs.

Author: Tushar Chande

Link: <http://www.investopedia.com/terms/a/aroon.asp>

Parameters

period

Default Value: **14** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Overbought

Default Value: **70** | Minimum: **50** | Maximum: **100**

Type: Numeric

Oversold

Default Value: **30** | Minimum: **0** | Maximum: **50**

Type: Numeric

Aroon Oscillator

Function Name: `aroon_osc`

Tags: Oscillator

Category: Momentum

Developed in 1995, Aroon is an indicator system that can be used to determine whether a stock is trending or not and how strong the trend is.

The Aroon indicator system consists of two lines, Aroon Up and Aroon Down. It takes a single parameter which is the number of time periods to use in the calculation. Aroon Up is the amount of time (on a percentage basis) that has elapsed between the start of the time period and the point at which the highest price during that time period occurred. If the stock is setting a new low for the given time period, Aroon Up will be zero. On the other hand, if the stock closes higher than it has during the rest of the time period, Aroon Up will be +100. For each subsequent period that passes without another new high, Aroon Up moves down by an amount equal to $(1 / \text{number of periods}) \times 100$. Aroon Down is calculated in just the opposite manner, looking for new lows instead of new highs.

Aroon Oscillator is designed by subtracting Aroon Down from Aroon Up. Since Aroon Up and Aroon Down oscillate between 0 and +100, the Aroon Oscillator oscillates between -100 and +100 with zero as the center crossover line. The Aroon Oscillator signals an upward trend is underway when it is above zero and a downward trend is underway when it falls below zero. The further away the oscillator is from the zero line, the stronger the trend.

Author: Tushar Chande

Link: <http://www.investopedia.com/terms/a/aroonoscillator.asp>



Parameters

period

Default Value: 14 | Minimum: 0 | Maximum: 9999

Type: Numeric

ShowLine

Default Value: -1

Type: Boolean

ShowHistogram

Default Value: 0

Type: Boolean

Asymmetrical RSI

Function Name: [arsi](#)

Tags: [Oscillator](#), [RSI](#)

Category: [Momentum](#)

Author: Sylvain Vervoort

Source: Stocks&Commodities Oct. 2008

Parameters

Length

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 70 | Minimum: 0 | Maximum: 100

Type: Numeric

lowerLevel

Default Value: 30 | Minimum: 0 | Maximum: 100

Type: Numeric

ATR Trail

Function Name: [atr_trail](#)

Tags: [ATR](#)

Category: [Volatility](#)

The average true range (Atr) measures a security's volatility. Wilder defined the true range concept as the greatest value of the:

Current high less the current low

Absolute value of the current high less the previous close



Absolute value of the current low less the previous close.

Wilder then calculated an average of this value for creating the average true range

Author: J. Welles Wilder

Publication: "New Concepts In Technical Trading Systems"

Link: <http://www.investopedia.com/terms/a/atr.asp>

Parameters

TrailTypeMod

Default Value: -1

Type: Boolean

Period

Default Value: 21 | Minimum: 2 | Maximum: 9999

Type: Numeric

Factor

Default Value: 1.5 | Minimum: 0 | Maximum: 100

Type: Numeric

InitialMonth

Default Value: 1 | Minimum: 1 | Maximum: 12

Type: Numeric

InitialDay

Default Value: 1 | Minimum: 1 | Maximum: 30

Type: Numeric

InitialYear

Default Value: 2009 | Minimum: 1900 | Maximum: 2050

Type: Numeric

FirstTrade

Default Value: 1 | Minimum: 0 | Maximum: 1

Type: Numeric

ShowTraderMarks

Default Value: -1

Type: Boolean

ShowLine

Default Value: -1

Type: Boolean

Average Balance Volume ABV

Function Name: [average_balance_volume](#)

Tags: [Moving Average](#)

Category: [Price](#), [Volume](#)

-



ABV is simply a modified moving average of on balance volume

The idea behind this indicator is that volume precedes price movement, so if a security is seeing an increasing ABV it is a signal that volume is increasing on upward price moves. Decreases mean that the security is seeing increasing volume on down days.

Parameters

Period

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

Average Directional Index

Function Name: `adx`

Tags: None

Category: Trend

The Average Directional Index (ADX) measures the strength of a prevailing trend as well as whether or not there is movement or direction in a market.

A rising ADX indicates a strong trend. If the ADX is over 40 and begins to fall, it can signal a slowdown of a current trend.

A falling ADX suggests a non-trending market. A low ADX value (generally less than 20) can indicate a non-trending market with low volatility whereas a cross above 20 may signal the start of a trend (either up or down).

The ADX does not, however, indicate whether a trend is up or down. This indicator can be used to identify non-trending markets, or a deterioration of an ongoing trend. Although market direction is important in its calculation, the ADX is not a directional indicator.

Author: J. Welles Wilder

Link: http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:average_directional_index_adx

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Average Directional Index Rating

Function Name: `adxr`

Tags: None

Category: Trend

The Average Directional Index Rating is basically an average of the ADX. This has the effect of smoothing the ADX values. It rates a market according to its movement by returning a value between 0 and 100. The higher the number, the greater the movement.



As with the ADX, a rising ADXR might indicate a strong underlying trend while a falling ADXR suggests a weakening trend subject to a reversal. ADXR can also identify non-trending markets or the deterioration of an ongoing trend. Although market direction is important in its calculation, the ADXR is not a directional indicator.

The ADXR differs from ADX in that the ADXR is less sensitive to short, quick reversals because the ADXR results in a "smoother" calculation. The ADXR was developed to compensate for the variance of excessive tops and bottoms. The ADXR is especially helpful when used in conjunction with trend-following strategies. Strategies that rely on volatility as an indication of movement may not take into account that movement does not necessarily indicate volatility. ADXR provides information pertaining to the strength of a trend, helping you to manage the risk of trading in volatile markets that fluctuate between trending and non-trending.

Source: http://www.investorwords.com/6411/average_directional_movement_index_rating.html

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Average True Range

Function Name: atr

Tags: None

Category: Volatility

The Average True Range indicator is used when calculating the directional movement of a market.

Range is defined as the distance a price moves per an increment of time, for example, from the highest price to the lowest price in a trading day. True Range measures the conventional range of a bar but checks the previous bar's closing price to see if it is outside the current bar's range. If it is, then that closing price is used instead of the High or Low. That is, the previous bar's Close is considered part of the current bar's range. This helps account for gaps between bars. The Average True Range indicator calculates and plots the average of these values over a certain number of bars. This indicator may be considered a tool for measuring the volatility of a market using a price range concept. Often, extremes in Average True Range are associated with a change in character of a market, from trending to trading range and vice versa.

Author: J. Welles Wilder

Link: http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:average_true_range_atr

Parameters

period

Default Value: 20 | Minimum: 2 | Maximum: 9999

Type: Numeric

Awesome Oscillator

Function Name: ao



Tags: Oscillator

Category: Trend

The Awesome Oscillator determines the market momentum on the last five bars, comparing them to the momentum of the last 34 bars. The oscillator is calculated as the difference between the 34-period and 5-period Moving Average at the mid price and is displayed as a histogram.

It can be used in combination with the Alligator indicator, i.e. buy and sell signals are only triggered outside of the Alligator's "mouth". Buy and sell signals are supposed to be signified by a cross of the zero line, when the bar chart reverses direction or when two consecutive pikes are rising / falling.

Author: Bill Williams

Parameters

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

Balance Line Trades

Function Name: `balanceline`

Tags: Chaos

Category: Other

The Balance Line is the line where the price would be if there were no new incoming information (Chaos) affecting the market. Mathematical calculations and computerised model analyses helped Bill Williams to find the Balance Line and build a histogram, which can be used to define the distance between the price and the Balance Line.

Author: Bill Williams

Bar Clock

Function Name: `b_clock`

Tags: None

Category: Other

Bar clock with hours, minutes and seconds.

Bearish Divergence

Function Name: `bear_div`

Tags: None



Category: Other

The Bearish Divergence function marks occurrences of highs in the prices not accompanied by highs in an indicator. If the criterion of Bearish Divergence is met, a value of +1 will be returned; otherwise, a value of 0 will be returned.

A divergence is a move in the price of an asset not confirmed by a comparable move in the applied technical indicator. A bearish divergence exists when a market reaches a new high without the indicator reaching a corresponding new high.

Bases

Source1	Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.
Source2	Choose an indicator as the second base, for example the RSI. The indicator must already be visible on the chart in order to use it as a base.

Parameters

period	<i>Default Value: 14 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
strength	<i>Default Value: 0 Minimum: 0 Maximum: 10</i> <i>Type: Numeric</i>

Bear Power

Function Name: bear_power

Tags: Exponential Moving Average

Category: Trend

Bear Power should normally remain negative. But Dr. Alexander Elder suggests using the exponential moving averages slope to determine the market trend direction. He describes the best buy signals as being when bullish divergence occurs between Bear Power and price (i.e. lower lows in price and higher lows in Bear Power) Buying conditions: (1) Prices are trending upwards according to the 13-period exponential moving average and (2) Bear Power is negative, but rising

Parameters

Period	EMA period <i>Default Value: 13 Minimum: 2 Maximum: 999</i> <i>Type: Numeric</i>
---------------	--

Beta Factor

Function Name: beta_factor

Tags: None

Category: Other



The Beta Factor indicates the relationship of the yield of a single stock and the relative market movements of an index, and indicates the extent of the risk of a particular stock. Since the stock index mirrors the circumstances of a market, Beta Factor represents the development of a stock within the general market growth direction. It shows to what extent a single price follows the trend of the market.

Bases

Source1	Choose a symbol of a security, for example a DAX stock. By default, the first symbol that is shown on the chart is used.
Source2	Choose a symbol for the corresponding market index, for example the DAX. If the index is not visible on the chart at the moment, you can choose it with Symbol Search by clicking on Other .

Parameters

period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
UseRoC	<i>Default Value: -1</i> <i>Type: Boolean</i>

Bollinger Band Signal

Function Name: [boll_sig](#)

Tags: [Bands](#)

Category: [Trend](#)

The Bollinger Bands indicator is one of the most commonly used technical indicators. It draws two bands that are plotted usually two standard deviations above and below a moving average. An upper band is plotted a specified number of standard deviations above this average and a lower band is plotted a specified number of standard deviations below the average.

The Bollinger Bands indicator combines the trend identifying aspects of a moving average with a dynamic factor, each market's own volatility, to plot an envelope. The distance between the bands is, therefore, a reflection of volatility. During sideways periods, prices reaching the bands may indicate overbought or oversold conditions. Strong movement up through the upper band or down through the lower band may indicate the beginning of a trend. A buy/sell signal occurs when a certain number of bars (can be set with parameter NBars) is below/above the lower/upper border of the Bollinger Band.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>

Parameters

Period	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Deviation	



NBars	<i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 1 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Bollinger Band Width

Function Name: `boll_width`

Tags: Bands

Category: Trend, Volatility

The Bollinger Band Width indicator shows the width of the bollinger bands in relative terms. It sets the difference between the upper and the lower band in relation to the middle band.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>

Parameters

period	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
deviation1	<i>Default Value: 2 Minimum: 0 Maximum: 5</i> <i>Type: Numeric</i>
deviation2	<i>Default Value: -2 Minimum: -5 Maximum: 0</i> <i>Type: Numeric</i>



Bollinger Band Width Percent

Function Name: boll_width_pct

Tags: Bands

Category: Trend, Volatility

The Bollinger Band Width indicator shows the width of the bollinger bands in relative terms. It sets the difference between the upper and the lower band in relation to the middle band.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>

Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

deviation1

Default Value: 2 | Minimum: 0 | Maximum: 5

Type: Numeric

deviation2

Default Value: -2 | Minimum: -5 | Maximum: 0

Type: Numeric

Bollinger Bands

Function Name: boll

Tags: Bands

Category: Trend, Volatility

The Bollinger Bands indicator is one of the most commonly used technical indicators. It draws two bands that are plotted usually two standard deviations above and below a moving average. An upper band is plotted a specified number of standard deviations above this average and a lower band is plotted a specified number of standard deviations below the average.

The Bollinger Bands indicator combines the trend identifying aspects of a moving average with a dynamic factor, each market's own volatility, to plot an envelope. The distance between the bands is, therefore, a reflection of volatility. During sideways periods, prices reaching the bands may indicate overbought or oversold conditions. Strong movement up through the upper band or down through the lower band may indicate the beginning of a trend.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>



Parameters

period	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
deviation1	<i>Default Value: 2 Minimum: 0 Maximum: 5</i> <i>Type: Numeric</i>
deviation2	<i>Default Value: -2 Minimum: -5 Maximum: 0</i> <i>Type: Numeric</i>

Bollingerpct_b

Function Name: boll_pct

Tags: Bands

Category: Trend, Volatility

The Bollinger pct_b (%b) indicator shows the closing price in relation to the upper and lower band. It will exceed one when the last price is above the upper band or will fall beneath zero when the last price is below the lower band.

A reading of 1,1 tells us that we are 10 percent of the bandwidth above the upper band. A reading of -0,15 means that the last price is 15 percent of the band width below the lower band.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>

Parameters

period	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
deviation1	<i>Default Value: 2 Minimum: 0 Maximum: 5</i> <i>Type: Numeric</i>
deviation2	<i>Default Value: -2 Minimum: -5 Maximum: 0</i> <i>Type: Numeric</i>
upperLevel	<i>Default Value: 1 Minimum: -10 Maximum: 10</i> <i>Type: Numeric</i>
lowerLevel	<i>Default Value: 0 Minimum: -10 Maximum: 10</i> <i>Type: Numeric</i>



Bollinger Percent B

Function Name: boll_pct_b

Tags: Bands

Category: Trend, Volatility

The Bollinger pct_b (%b) indicator shows the closing price in relation to the upper and lower band. It will exceed 100% when the last price is above the upper band or will fall beneath zero when the last price is below the lower band.

A reading of 110 tells us that we are 10 percent of the bandwidth above the upper band. A reading of -15 means that the last price is 15 percent of the band width below the lower band.

Author: John Bollinger

Link: <http://www.investopedia.com/terms/b/bollingerbands.asp>

Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

deviation1

Default Value: 2 | Minimum: 0 | Maximum: 5

Type: Numeric

deviation2

Default Value: -2 | Minimum: -5 | Maximum: 0

Type: Numeric

upperLevel

Default Value: 100 | Minimum: -1000 | Maximum: 1000

Type: Numeric

lowerLevel

Default Value: 0 | Minimum: -1000 | Maximum: 1000

Type: Numeric

Bomar Bands

Function Name: bomar_bands

Tags: Bands

Category: Trend, Volatility

The Bomar bands consist of a center line and two price channels above and below it. If price tags the upper band and indicator action confirms it, no sell signal is generated. On the other hand, if price tags the upper band and indicator action does not confirm (that is, it diverges), we have a sell signal. The first situation is not a sell signal; instead, it is a continuation signal if a buy signal was in effect.

Parameters:

MAPeriod: Period for moving average calculation.



StdevPeriod: Period for standard deviation calculation.

UpperDev: Standard deviation multiple that forms upper band.

LowerDev: Standard deviation multiple that forms lower band.

ShowSMA, ShowEMA, ShowMMA, ShowBands: Display control flags.

Parameters

MAPeriod

Default Value: 21 | Minimum: 2 | Maximum: 999

Type: Numeric

StdevPeriod

Default Value: 85 | Minimum: 2 | Maximum: 999

Type: Numeric

UpperDev

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

LowerDev

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowSMA

Default Value: -1

Type: Boolean

ShowEMA

Default Value: 0

Type: Boolean

ShowMMA

Default Value: 0

Type: Boolean

ShowBands

Default Value: -1

Type: Boolean

Breadth Thrust

Function Name: [breadth_thrust](#)

Tags: None

Category: [Market Breadth](#)

Breadth Thrust is a 10-day exponential average of the advances divided by the sum of the advances plus the declines. A signal occurs when this indicator goes from under 0.40 to above 0.615 within a 10-day period or less.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the



bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the ITBM of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: Martin Zweig

Parameters

Index

Type:

Breakout Of Average True Range

Function Name: `brk_atr`

Tags: ATR Breakout, Breakout

Category: Volatility

The Breakout Of Average True Range study marks a bar if the Average True Range is higher than the value you enter.

Parameters:

Period

Default Value: **20** | Minimum: **2** | Maximum: **100**

Type: Numeric

Trigger

Default Value: **0.5** | Minimum: **-100** | Maximum: **100**

Type: Numeric

Breakout Of Price

Function Name: `brk_price`

Tags: Breakout

Category: Price

The Breakout of Price study marks a bar if the price is higher than the average price.



Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Shift	<i>Default Value: 0 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowEachOccurrence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBrkHigh	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBrkLow	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderBars	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMarks	<i>Default Value: 0</i> <i>Type: Boolean</i>

Breakout Of X Bar

Function Name: [brk_xbar](#)

Tags: [Breakout](#)

Category: [Price](#)

This study marks a bar if a High is higher than any High in the previous number of bars or if a Low is lower than any Low in the previous number of bars.

Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowEachOccurrence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBrkHigh	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBrkLow	<i>Default Value: -1</i> <i>Type: Boolean</i>



ShowTraderMarks
Default Value: -1
Type: Boolean

ShowTraderBars
Default Value: 0
Type: Boolean

ShowTraderBars
Default Value: -1
Type: Boolean

Bull Power

Function Name: `bull_power`

Tags: Exponential Moving Average

Category: Trend

Bull Power should normally remain positive. But Dr. Alexander Elder suggests using the exponential moving averages slope to determine the market trend direction. He describes the best sell signals as being when bearish divergence occurs between Bull Power and Price. (i.e. higher high in price and lower highs in Bull Power) Selling Conditions: (1) Price are trending downwards according to the 13-periods exponential moving average and (2) Bull Power is positive, but declining

Parameters

Period EMA period
Default Value: 13 | Minimum: 2 | Maximum: 999
Type: Numeric

Bullish Divergence

Function Name: `bull_div`

Tags: None

Category: Other

The Bullish Divergence function marks occurrences of lows in the price not accompanied by lows in the value of an indicator. If the criterion of Bullish Divergence is met, a value of +1 will be returned; otherwise, a value of 0 will be returned.

Bases

Source1 Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.

Source2 Choose an indicator as the second base, for example the RSI. The indicator must already be visible on the chart in order to use it as a base.

Parameters

period



Default Value: **14** | Minimum: **2** | Maximum: **9999**

Type: Numeric

strength

Default Value: **0** | Minimum: **0** | Maximum: **10**

Type: Numeric

Camarilla Points

Function Name: camarilla

Tags: None

Category: Other, Price

Parameters:

StartYear, StartMonth, StartDay, StartHour, StartMinute - Moment when drawing of the lines start.

TimeFrame - Number of candlesticks preceding the start time that are taken for HLC calculation.

DrawLength - For how many bars after the start will camarilla points be drawn (set to 0 for infinity).

The camarilla point formulas are as follows: Range = High - Low, for the time frame under consideration. R1, R2, R3, R4, R5 – Resistance levels S1, S2, S3, S4, S5 – Support levels
 $R5 = (High / low) * Close$
 $R4 = Close + Range * (1.1)/2$
 $R3 = Close + Range * (1.1)/4$
 $R2 = Close + Range * (1.1)/6$
 $R1 = Close + Range * (1.1)/12$
 $S1 = Close - Range * (1.1)/12$
 $S2 = Close - Range * (1.1)/6$
 $S3 = Close - Range * (1.1)/4$
 $S4 = Close - Range * (1.1)/2$
 $S5 = (Close - (R5 - Close))$
 The resistance and support levels are computed per the preceding trading session's high, low, and close.

Author: Slawomir Bobrowski

Source: Stocks & Commodities, March 2013: "Stocks and Commodities"

Parameters

StartYear

Default Value: **2012** | Minimum: **1900** | Maximum: **2030**

Type: Numeric

StartMonth

Default Value: **7** | Minimum: **1** | Maximum: **12**

Type: Numeric

StartDay

Default Value: **18** | Minimum: **1** | Maximum: **31**

Type: Numeric

StartHour

Default Value: **0** | Minimum: **0** | Maximum: **23**

Type: Numeric



StartMinute	<i>Default Value: 0 Minimum: 0 Maximum: 59</i> <i>Type: Numeric</i>
TimeFrame	How many preceding bars are used to calculate HLC <i>Default Value: 27 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
DrawLength	For how many bars will camarilla points be drawn (seto to 0 for infinity) <i>Default Value: 0 Minimum: 0 Maximum: 999</i> <i>Type: Numeric</i>
ShowRS1	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowRS2	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowRS3	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowRS4	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowRS5	<i>Default Value: -1</i> <i>Type: Boolean</i>

Candlestick Pattern Recognition

Function Name: `candle_pattern`

Tags: Pattern

Category: Candlestick

This study detects the most important and reliable candlestick patterns in a chart.

Link: <http://www.oilngold.com/tutorials/candlesticks-tutorial-i/japanese-candlestick-charts-tutorial-20080722236/>

Parameters

ifBearishEngulfing	<i>Default Value: -1</i> <i>Type: Boolean</i>
ifBullishEngulfing	<i>Default Value: -1</i> <i>Type: Boolean</i>
ifDarkCloud	



ifDoji	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifEveningStar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifHammer	<i>Default Value: -1</i> <i>Type: Boolean</i>
ifHangingMan	<i>Default Value: -1</i> <i>Type: Boolean</i>
ifMarubozu	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifMorningStar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ifPiercingPattern	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifSanku	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifShootingStar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ifSpinningTop	<i>Default Value: 0</i> <i>Type: Boolean</i>
Period	<i>Default Value: 5 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 1 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
Tail	<i>Default Value: 2 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>



CCI AvgCross Signal

Function Name: `cciavg_sig`

Tags: Crossover

Category: Trend

The Commodity Channel Index is an oscillator used in technical analysis to help determine when an investment vehicle has been overbought and oversold.

The Commodity Channel Index, first developed by Donald Lambert, quantifies the relationship between the asset's price, a moving average (MA) of the asset's price, and normal deviations (D) from that average. The CCI has seen substantial growth in popularity amongst technical investors; today's traders often use the indicator to determine cyclical trends in not only commodities, but also equities and currencies. The CCI, when used in conjunction with other oscillators, can be a valuable tool to identify potential peaks and valleys in the asset's price, and thus provide investors with reasonable evidence to estimate changes in the direction of price movement of the asset. A buy/sell signal occurs when the two CCIs (defined by Fast/Slowperiod) cross.

Link: <http://www.investopedia.com/terms/c/commoditychannelindex.asp>

Parameters

Period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

FastPeriod

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

SlowPeriod

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean



Center Of Gravity Oscillator

Function Name: cog_osc

Tags: Oscillator

Category: Volatility

The Center of Gravity Oscillator has essentially zero lag and permits clear identification of turning points.

Author: John Ehler

Source: TAS&C Vol.20: "The Center of Gravity Oscillator"

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Chaikin Money Flow

Function Name: chaikin_mf

Tags: None

Category: Trend

The Chaikin Money Flow indicator is showing whether a given equity is within a buying trend (money flow in) or a selling trend (money flow out).

Author: Marc Chaikin

Chaikin Oscillator

Function Name: chaikin

Tags: Oscillator

Category: Volatility

The Chaikin Oscillator compares a slow exponential moving average and a fast exponential moving average of the Volume Accumulation Distribution, and plots the result in a line that oscillates above and below a zero line. The Volume Accumulation Distribution uses the relationship between the Open and the Close of the bar, and the range of the bar, to weight and characterize the volume as Accumulation (buying) or Distribution (selling).

The Chaikin Oscillator uses averages and differences to provide a different view of this data. Because the Chaikin Oscillator uses exponential averages, the numeric value of the Chaikin Oscillator will depend on the data available in the chart.

The most common use of this indicator is to identify divergences between a market's price activity and the oscillator.

Author: Marc Chaikin



Parameters

ShowLine	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowHistogram	<i>Default Value: -1</i> <i>Type: Boolean</i>

Channel Break Signal

Function Name: [chanbrk_sig](#)

Tags: [Breakout](#), [Bands](#)

Category: [Price](#)

This is a consolidated study of the former Chan Brk Bullish and Chan Brk Bearish Trader Bar/Mark.

Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Chande Momentum Oscillator

Function Name: [cmo](#)



Tags: Oscillator

Category: Momentum

The CMO is looking for extreme overbought and oversold conditions. There are two different ways that this oscillator is used as a trading signal. The first is to measure overbought (greater than 50) or oversold (less than -50) levels. The second method is to buy when the oscillator crosses above its moving average line and to sell when the oscillator crosses below its moving average line.

The Chande Momentum Oscillator is constructed using the sum over a given period of price changes on up days and the sum over the same period of prices on down days.

As mentioned above the overbought levels are quantified at +50 and the oversold level at -50.

At +50, up-day momentum is three times the down-day momentum. Likewise, at -50, down-day momentum is three times the up-day momentum.

These levels correspond to the 70/30 levels on the RSI indicator.

Furthermore, the overbought/oversold entry and exit rules can be established by plotting a moving average trigger line on the CMO. For example, if the default 20-period CMO is used, a 9-period moving average may serve as a good trigger line. When CMO crosses above the 9-period trigger line a buy signal is generated; when it crosses below a sell signal is generated.

Author: Tushar Chande

Link: <http://www.investopedia.com/terms/c/ChandeMomentumOscillator.asp>

Parameters

period

Default Value: **21** | Minimum: **1** | Maximum: **9999**

Type: Numeric

ShowLine

Default Value: **0**

Type: Boolean

ShowHistogram

Default Value: **-1**

Type: Boolean

Chaos Theory

Function Name: chaostheory

Tags: None

Category: None

It is Bill Williams' view that making money can be easy if you understand the market structure. In order to do this you should be aware of the market's inherent parts called dimensions, each of which adds to the total picture.

These market dimensions are:

- Fractal (phase space)
- Momentum (phase energy) - Awesome Oscillator
- Acceleration / Deceleration (phase force)
- Zone (phase energy / force combination)



- Balance Line (strange attractors)

It is worth mentioning that before the first dimension (Fractals) generates a signal, all signals generated by other dimensions should be ignored. Once the position is open in the direction of the first fractal signal, the trader 'adds-on' to this position every time a signal from other dimensions is generated.

Parameters

TickValue

Default Value: 0.001 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

Close Average to Open Average

Function Name: `ca_oa`

Tags: [Relation](#)

Category: [Price](#)

This study marks the bar based on the relation between the average Close price and the average Open price.

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

Shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

CIGreaterThanOp

Default Value: -1

Type: Boolean

CILessThanOp

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean



Close Percent Change

Function Name: `c_pct_change`

Tags: Relation

Category: Price

The Close Percent Change study marks a bar if the Close is up/down from the previous bar within the defined percentage amount.

Parameters

Percent

Default Value: 5 | Minimum: 1 | Maximum: 100

Type: Numeric

UsePctUp

Default Value: -1

Type: Boolean

UsePctDown

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

Close to Bar Average

Function Name: `c_ba`

Tags: Relation

Category: Price

This study marks the bar based on the relation between Close and a Simple Moving Average. Values above the SMA indicate an uptrend in prices, values below the SMA indicate a downtrend.

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric



CIGreaterThanBA

Default Value: -1

Type: Boolean

CILessThanBA

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

Close to XY

Function Name: [c_to_xy](#)

Tags: [Relation](#)

Category: [Price](#)

The Close to XY study marks a bar if the Close is between, above, or below the two values you enter.

Parameters

HigherPrice

Default Value: 35 | Minimum: 0 | Maximum: 100

Type: Numeric

LowerPrice

Default Value: 25 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseClbetweenXY

Default Value: -1

Type: Boolean

UseClaboveY

Default Value: -1

Type: Boolean

UseClbelowX

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean



ShowTraderMark

Default Value: 0

Type: Boolean

Color-Based System

Function Name: ColorBasedSystem

Tags: None

Category: Volume

Most technical traders use some combination of price-based indicators to support their trading decisions. Here's a very simple swing trading system based on coloring volume bars. It can be used either as a standalone trading system or in conjunction with other trading systems. This is how it works: - If today's closing price and volume are greater than two weeks ago, color today's volume bar green. - If today's closing price is greater than two weeks ago but volume is not, color today's volume bar blue. - If today's closing price is less than two weeks ago but volume is not, color today's volume bar red.

It's a very simple color-based trading system that takes only long positions and works as follows: - Buy the green or blue volume bars using a 1% trailing stop and a one-period trailing stop delay. Stand aside on red or orange bars.

Source: Stocks & Commodities, July 2011: "A Color-Based System for Short-Term Trading"

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowLines

Default Value: -1

Type: Boolean

Commodity Channel Index

Function Name: cci

Tags: None

Category: Trend

The Commodity Channel Index is used to identify the beginning and ending of cycles and works best when applied to futures markets that are cyclical or seasonal in nature. It is commonly used to identify buy and sell opportunities. A long position is indicated when the CCI exceeds +100 while a short position is indicated when the CCI falls below -100 but these values should be based more on your market analysis. For example, you may decide that for the market you are evaluating, a -125 indicates taking a short position while a +150 indicates taking a long position.

The Commodity Channel Index can be used as a signal for overbought and oversold markets, much like an oscillator. Breakouts above the CCIlong (L1) line indicate an overbought market and breakouts below the CCIshort (L2) line indicate an oversold market. The CCI often misses the early part of a new move because of the amount of time it spends in the neutral position (between the CCIlong and CCIshort lines). Many analysts believe the CCI Average crossing above or below zero identifies market conditions before the CCIlong and CCIshort lines are crossed.



Link: <http://www.investopedia.com/terms/c/commoditychannelindex.asp>

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 100 | Minimum: 1 | Maximum: 9999

Type: Numeric

lowerLevel

Default Value: -100 | Minimum: -9999 | Maximum: 1

Type: Numeric

Commodity Channel Index Signal

Function Name: [cci_index_signal](#)

Tags: [Commodity Channel Index](#)

Category: [Trend](#)

The CCI has seen substantial growth in popularity amongst technical investors; today's traders often use the indicator to determine cyclical trends in not only commodities, but also equities and currencies.

The CCI, when used in conjunction with other oscillators, can be a valuable tool to identify potential peaks and valleys in the asset's price, and thus provide investors with reasonable evidence to estimate changes in the direction of price movement of the asset.

Parameters

Period

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

SellThreshold

Default Value: 100 | Minimum: -999 | Maximum: 999

Type: Numeric

BuyThreshold

Default Value: -100 | Minimum: -999 | Maximum: 999

Type: Numeric

ShowTraderMarks

Default Value: 0

Type: Boolean

ShowCCI

Default Value: -1

Type: Boolean



Commodity Channel Index Standard

Function Name: `cci_std`

Tags: None

Category: Trend

The Commodity Channel Index Standard is a complex indicator that follows trends. It is very similar to the Commodity Channel Index, the difference being that standard deviation replaces mean deviation in the formula.

Link: <http://www.investopedia.com/terms/c/commoditychannelindex.asp>

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 100 | Minimum: 1 | Maximum: 9999

Type: Numeric

lowerLevel

Default Value: -100 | Minimum: -9999 | Maximum: 1

Type: Numeric

Commodity Selection Index

Function Name: `csi`

Tags: CSI

Category: Momentum

The Commodity Selection Index (CSI) is a momentum indicator, primarily designed to help the short-term traders to identify commodities with strong trending and volatility. A high reading of the CSI implies that the commodity has strong trending and volatility characteristics. The trending characteristics are derived from the Directional Movement factor in the calculation while the volatility characteristics are brought out by the Average True Range factor. Short term traders may find the CSI very useful as it may help to highlight those futures that have high volatility and thus trade well in a breakout fashion.

Author: Welles Wilder

Link: <http://www.investopedia.com/terms/c/commodityselectionindex.asp>

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

margin

Default Value: 1 | Minimum: 1 | Maximum: 32000



commision	Type: Numeric
	Default Value: 1 Minimum: 1 Maximum: 32000
valueMov	Type: Numeric
	Default Value: 1 Minimum: 0 Maximum: 32000
	Type: Numeric

Coppock Breadth

Function Name: `copp_breadth`

Tags: None

Category: Market Breadth

This indicator, created in the early 1960's, uses an adjusted advance decline line as its basis. Subtract the declines from the advances and divide that difference by the total issues traded. Then calculate a cumulative total as you would with the advance decline line. Originally developed as a weekly indicator, the Coppock Breadth Indicator can also be adapted to daily breadth data.

Data components required:

- Advances - Declines - Total Issues

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the Coppock Breadth of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: E. S. C. Coppock

Parameters

Index

Type:

Coppock Curve

Function Name: `coppock`

Tags: None



Category: Momentum

The Coppock Curve is a long-term price momentum indicator, designed by applying a front-weighted smoothing to an average of two momentums and used primarily to pinpoint major bottoms in the stock market.

There are two commonly accepted ways of determining buy and sell signals from a Coppock Curve.

The first is to trade on reversals from extremes. When first introduced in 1962, it was intended to generate buy signals in the S&P 500 only, and the suggested signal was an upturn in the Coppock Curve from an extreme low.

The second interpretation involves divergence analysis. The initial thrust off of a low in the stock market is often accompanied by the highest Coppock Curve reading (peak momentum). Subsequent advances tend to be accompanied by diminishing momentum (lower peaks on the Coppock Curve). That combination of a higher peak in price accompanied by a lower peak in the Coppock Curve creates a bearish divergence. Those signals warn of a weakening, aging advance, but often precede the ultimate top.

Author: Edwin Sedgwick Coppock

Link: http://en.wikipedia.org/wiki/Coppock_curve

Parameters

ROCperiod1

Default Value: 11 | Minimum: 1 | Maximum: 9999

Type: Numeric

ROCperiod2

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

WMA_period

Default Value: 10 | Minimum: 1 | Maximum: 100

Type: Numeric

Correlation

Function Name: indCorrelation

Tags: Statistics

Category: Other

The Correlation Function indicator is defined as a measure of the tendency of two variables to be above or below their average at the same time.

The Correlation Function indicator calculates the frequency of price movement in the same direction and in opposite directions for 2 markets during the number of bars specified by the input Period. This frequency is indexed and plotted as a value between 1 and -1. This is used as a measure of the tendency of two markets to move in the same direction. A positive Correlation value indicates that the 2 markets tend to move in the same direction. A negative Correlation value indicates a strong tendency for the 2 markets to move in opposite directions. A Correlation value of near 0 indicates there is very little correlation (or no correlation) between the two markets.

Link: <http://www.investopedia.com/terms/c/correlation.asp>



Bases

Source1	Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.
Source2	Choose any symbol as the second base. By default, the second symbol that is shown on the chart is used. If only one symbol is visible on the chart, you can choose a second symbol with Symbol Search by clicking on Other .

Parameters

period	<i>Default Value: 5 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
shift	<i>Default Value: 0 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>

Count Criteria

Function Name: countcrit

Tags: None

Category: Other

The Count Criteria study marks a bar if for a number of previous bars the Close is higher than the High of the previous bar.

Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Occur	<i>Default Value: 4 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>

Covariance

Function Name: indCovariance

Tags: Statistics

Category: Other

The Covariance Function calculates the covariance between two bases.

It is used to determine the relationship between two data sets. This coefficient returns a value that measures the influence that the independent (INDEPENDENTVAL input) data series has over the dependant data series (DEPENDENTVAL input). The greater the value, the stronger the correlation, the smaller the value (if negative) the stronger the inverse correlation. If the value is near to zero the correlation is non-existent.



Link: <http://www.investopedia.com/terms/c/covariance.asp>

Bases

Source1	Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.
Source2	Choose any symbol as the second base. By default, the second symbol that is shown on the chart is used. If only one symbol is visible on the chart, you can choose a second symbol with Symbol Search by clicking on Other .

Parameters

period	<i>Default Value: 14 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
SampleMethod	<i>Default Value: 0</i> <i>Type: Boolean</i>

Crack Spread CL

Function Name: `cracksprd_cl`

Tags: None

Category: Spread

The Crack Spread is the difference between the revenue from the refined products based on futures prices. The basic calculation is a simple one that is made somewhat more complicated because the quantities are given in different units. These units for crude oil (CL, LBC, or RCL) unleaded gasoline (HU or RHU), and heating oil (HO, LGO, or RHO) must be converted to the divisor unit.

Link: <http://www.investopedia.com/terms/c/crackspread.asp>

Bases

CrudeOil	Default base is the continuous futures contract BRN with the standard trigger configuration.
Gasoline	Default base is the continuous futures contract UHU with the standard trigger configuration.
HeatingOil	Default base is the continuous futures contract UHO with the standard trigger configuration.

Parameters

CrudeOilNo	<i>Default Value: 3 Minimum: 1 Maximum: 1000</i> <i>Type: Numeric</i>
GasolineNo	



Default Value: 2 | Minimum: 0 | Maximum: 1000

Type: Numeric

HeatingOilNo

Default Value: 1 | Minimum: 0 | Maximum: 1000

Type: Numeric

Crack Spread HO vs LGO

Function Name: `cracksprd_ho_lgo`

Tags: None

Category: Spread

The Crack Spread is the difference between the revenue from the refined products based on futures prices. The basic calculation is a simple one that is made somewhat more complicated because the quantities are given in different units. These units for crude oil (CL, LBC, or RCL) unleaded gasoline (HU or RHU), and heating oil (HO, LGO, or RHO) must be converted to the divisor unit.

Link: <http://www.investopedia.com/terms/c/cracksread.asp>

Bases

Gasoline

Default base is the continuous futures contract UHU with the standard trigger configuration.

HeatingOil

Default base is the continuous futures contract UHO with the standard trigger configuration.

Parameters

HeatingOilNo

Default Value: 1 | Minimum: 0 | Maximum: 1000

Type: Numeric

GasolineNo

Default Value: 2 | Minimum: 0 | Maximum: 1000

Type: Numeric

Crack Spread LBC

Function Name: `cracksprd_lbc`

Tags: None

Category: Spread

The Crack Spread is the difference between the revenue from the refined products based on futures prices. The basic calculation is a simple one that is made somewhat more complicated because the quantities are given in different units. These units for crude oil (CL, LBC, or RCL) unleaded gasoline (HU or RHU), and heating oil (HO, LGO, or RHO) must be converted to the divisor unit.



Link: <http://www.investopedia.com/terms/c/cracksread.asp>

Bases

CrudeOil	Default base is the continuous futures contract BRN with the standard trigger configuration.
Gasoline	Default base is the continuous futures contract UHU with the standard trigger configuration.
HeatingOil	Default base is the continuous futures contract UHO with the standard trigger configuration.

Parameters

CrudeOilNo	<i>Default Value: 3 Minimum: 1 Maximum: 1000</i> <i>Type: Numeric</i>
GasolineNo	<i>Default Value: 2 Minimum: 0 Maximum: 1000</i> <i>Type: Numeric</i>
HeatingOilNo	<i>Default Value: 1 Minimum: 0 Maximum: 1000</i> <i>Type: Numeric</i>

Crush Spread

Function Name: [crushsprd](#)

Tags: None

Category: [Spread](#)

The Crush Spread signal is a futures transaction that parallels the process of producing bean oil (BO) and soy meal (SM) from soybeans (S). This signal will only work with S, BO, and SM contracts on a daily chart. The Crush Spread signal is similar to the Crack Spread used for crude oil.

Link: <http://www.investopedia.com/terms/c/crushspread.asp>

Bases

Soybeans	Default base is the continuous futures contract ZS with the standard trigger configuration.
Soymeal	Default base is the continuous futures contract ZL with the standard trigger configuration.
BeanOil	Default base is the continuous futures contract ZM with the standard trigger configuration.

Parameters

SoybeanNo	<i>Default Value: 1 Minimum: 1 Maximum: 1000</i> <i>Type: Numeric</i>
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SoymealNo

Default Value: 1 | Minimum: 1 | Maximum: 1000

Type: Numeric

BeanOilNo

Default Value: 1 | Minimum: 1 | Maximum: 1000

Type: Numeric

Cumulative Sum

Function Name: cumul

Tags: None

Category: Other

The Cumulative Sum adds all Close values together. A line in the chart that only moves upward represents this indicator.

Cumulative Sum Of Last x Periods

Function Name: cumul_last

Tags: None

Category: Other

The Cumulative Sum of Last x Periods sums the Close values of the specified number of periods.

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Current Day OHLC

Function Name: currentOHLC

Tags: None

Category: Price

This indicator plots the open, high, low and close of the current day on intraday charts.

Parameter DayBreakGMTHour lets the user define a custom daybreak time expressed in GMT.

Parameters

DayBreakGMTHour

Expressed in GMT



Default Value: 0 | Minimum: 0 | Maximum: 23

Type: Numeric

ShowOHLC

Default Value: -1

Type: Boolean

Cutler RSI

Function Name: [c_rsi](#)

Tags: None

Category: [Momentum](#)

The Cutler RSI indicator is a slight variation of Welles Wilder's original Relative Strength Index. The RSI is a momentum oscillator used to identify overbought and oversold conditions by keying on specific levels, generally 30 and 70, on a chart scaled from 0 to 100. The signal can also be used to detect the following:

- Movement which might not be as readily apparent on the bar chart
- Failure swings above 70 or below 30 which indicate reversals
- Support and resistance
- Divergences between RSI and price.

Author: Cutler

Link: http://en.wikipedia.org/wiki/Relative_strength_index#Cutler.27s_RSI

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Overbought

Default Value: 70 | Minimum: 0 | Maximum: 100

Type: Numeric

Oversold

Default Value: 30 | Minimum: 0 | Maximum: 100

Type: Numeric

Cyber Cycle

Function Name: [cyber_cycles](#)

Tags: None

Category: [Cycles](#)

The Cyber Cycle indicator extracts the cyclic component of price movements and isolates the cycles with additional smoothing. The indicator is recognizing salient course turning points reliably and produces commercial signals. When the signal line crosses above the Cyber Cycle from below, it's a bullish signal and it's time to buy. When signal line crosses below the Cyber Cycle from above, it's a bearish signal and it's time to sell.



Author: John Ehler

Publication: "Cybernetic Analysis of Stocks and Futures"

Parameters

alpha

Default Value: 0.7 | Minimum: 0.1 | Maximum: 1

Type: Numeric

Dark Cloud

Function Name: dark_cl

Tags: None

Category: Candlestick, Pattern

The dark cloud pattern occurs if the first candle is a long white body which continues the up-trend, the second candle of this pattern is a filled body candle with the Open above the previous candle's High and with a Close within the midpoint and the Low of the first bar. The greater the penetration into the previous candle's hollow body, the better chance for a successful reversal.

The Dark Cloud study marks a bar if a dark cloud pattern occurs.

Link: <http://www.investopedia.com/terms/d/darkcloud.asp>

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

NBars

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

Demand Index

Function Name: dmindx

Tags: None



Category: Volume

To indicate a change in price trend, the Demand Index combines volume and price data. This indicator fluctuates around the zero line. If the indicator crosses the zero line from below, then the buying pressure is greater than the selling pressure.

The Demand Index offers many types of signals:

- a change in a price trend is indicated when there is a divergence between the indicator and the price;
- a change in a price trend is also indicated when the indicator crosses the zero line;
- a weak price movement that will not last long is indicated when the indicator stays near the zero line for a period of time;
- a major top or bottom is indicated when there is a large long-term divergence between the indicator and the price.

Author: James Sibbet

Parameters

period

Default Value: 5 | Minimum: 2 | Maximum: 9999

Type: Numeric

Detrended Price Oscillator

Function Name: `dp_osc`

Tags: Oscillator

Category: Trend

The Detrended Price Oscillator is similar to a moving average, in that it filters out trends in prices to more easily identify cycles. The indicator is an attempt to define cycles in a trend by drawing a moving average as a horizontal straight line and placing prices along the line according to their relation to a moving average. It provides a means of identifying underlying cycles not apparent when the moving average is viewed within a price chart. Cycles of a longer duration than the period (number of bars used to calculate the Detrended Price Oscillator) are effectively filtered or removed by the oscillator.

Link: http://en.wikipedia.org/wiki/Detrended_price_oscillator

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean



Difference

Function Name: difference

Tags: None

Category: Spread

The Difference study calculates the difference of the prices of two predefined sources, either relative or absolute.

Parameters

Percentage

Default Value: -1

Type: Boolean

ShowLine

Default Value: -1

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

Directional Movement Index

Function Name: dmi

Tags: None

Category: Trend

The Directional Movement Index (DMI) is used to determine whether a market is in a trending or non-trending mode as well as to help identify whether it is bullish or bearish.

Link: <http://www.investopedia.com/terms/d/dmi.asp>

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Directional Movement Minus

Function Name: mdi

Tags: None

Category: Trend



The Directional Movement Minus represents the difference between today's Low and yesterday's Low.

The Directional Movement Minus measures the downward movement of a market. This can be used as an indication of a bullish market, which occurs when the Directional Movement Minus crosses under the Directional Movement Plus. This signals an opportunity to establish a long position. Conversely, an indication of a bearish market occurs when the Directional Movement Minus crosses above the Directional Movement Plus. This provides an opportunity to establish a short position and/or liquidate any existing long positions.

Link: <http://www.investopedia.com/terms/d/dmi.asp>

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Directional Movement Plus

Function Name: pdi

Tags: None

Category: Trend

The Directional Movement Plus indicator is calculated from a comparison of the highs on a series of consecutive bars versus the true range.

The Directional Movement Plus indicator measures the upward movement of a market. Many analysts believe an indication of a bullish market occurs when the Directional Movement Plus crosses over the Directional Movement Minus. This signals an opportunity to establish a long position. Conversely, an indication of a bearish market occurs when the Directional Movement Plus crosses below the Directional Movement Minus. This provides an opportunity to establish a short position and/or liquidate any existing long positions.

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Directional Movement System

Function Name: dms

Tags: None

Category: Trend

The concept of the Directional Movement System is based on the assumption that in an upward trend today's highest price is higher than yesterday's highest price and in a downward trend today's lowest price is lower than yesterday's lowest price.

The Directional Movement System indicator calculates and plots the DMI Plus and DMI Minus values. DMI Plus is calculated from a comparison of the highs on a series of consecutive bars versus the true range; DMI Minus is calculated from the lows on a series of consecutive bars versus the true range. These values are used to calculate



ADX, which is also plotted by this indicator. ADX is commonly used to indicate whether a market is trending. Rising ADX values indicate a trending market without indication of the trend direction. The DMI Plus and DMI Minus, components of the ADX, can aid in identifying direction. DMI Plus crossing over DMI Minus is a bullish sign, and vice versa.

Link: <http://www.investopedia.com/terms/d/dmi.asp>

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

Directional Oscillator

Function Name: `directional_oscillator`

Tags: Oscillator

Category: Trend

The directional movement oscillator converts the two lines of the DMI (Directional Movement Index) into a single oscillator that fluctuates above and below zero.

A directional movement oscillator is calculated by subtracting the -DI from the +DI.

If +DI is greater than -DI, the directional movement oscillator value is positive.

If +DI is less than -DI, the value is negative.

Parameters

Period

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

Disparity Index

Function Name: `dix`

Tags: Moving Averages

Category: Trend

The Disparity Index (DIX) is a technical indicator that measures the relative position of the most recent closing price to a selected moving average and reports the value as a percentage. A value greater than zero suggests that the asset is gaining upward momentum, while a value less than zero can be interpreted as a sign that selling pressure is increasing.

Extreme values of this indicator can be a very useful tool for contrarian investors to foretell periods of exhaustion. Once the price is excessively pushed in one direction, there are very few investors to take the other side of the transaction when the participants wish to close their position, ultimately leading to a price reversal. Similar to the ROC indicator, important signals are generated when the indicator crosses over the zero line because it is an early signal that momentum is building.



This indicator uses three DIX with default periods 10, 50, and 200. The corresponding trigger lines are set -2, 3, and 5.

<http://www.investopedia.com/terms/d/disparityindex.asp>

Parameters

period1	<i>Default Value: 10 Minimum: 2 Maximum: 99999</i> <i>Type: Numeric</i>
period2	<i>Default Value: 50 Minimum: 2 Maximum: 99999</i> <i>Type: Numeric</i>
period3	<i>Default Value: 200 Minimum: 2 Maximum: 99999</i> <i>Type: Numeric</i>
trigg1	<i>Default Value: -2 Minimum: -100 Maximum: 100</i> <i>Type: Numeric</i>
trigg2	<i>Default Value: 3 Minimum: -100 Maximum: 100</i> <i>Type: Numeric</i>
trigg3	<i>Default Value: 5 Minimum: -100 Maximum: 100</i> <i>Type: Numeric</i>

DMI Signal

Function Name: `dmi_sig`

Tags: None

Category: Trend

The Directional Movement Index (DMI) is used to determine whether a market is in a trending or non-trending mode as well as to help identify whether it is bullish or bearish.

Link: <http://www.investopedia.com/terms/d/dmi.asp>

Parameters

Period	<i>Default Value: 14 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
MinDiff	



ShowTraderBar	<i>Default Value: 0 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Doji

Function Name: doji

Tags: None

Category: Candlestick

Doji is a name for candlesticks that provide information on their own and also feature in a number of important patterns. Dojis form when a security's open and close are virtually equal. A doji candlestick looks like a cross, inverted cross, or plus sign. Alone, doji are neutral patterns.

Link: <http://www.investopedia.com/terms/d/doji.asp>

Parameters

Percentage	<i>Default Value: 99.99 Minimum: 99 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderBars	<i>Default Value: -1</i> <i>Type: Boolean</i>



Donchian Channel

Function Name: donchian

Tags: None

Category: Price

A simple Price Channel of the Highest High of Last x Periods and Lowest Low of Last x Periods. In addition the median of the upper and lower channel is plotted.

Author: Richard Davoud Donchian

Link: <http://www.investopedia.com/terms/d/donchianchannels.asp>

Parameters

periodHigh

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

periodLow

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

Donchian Channel Signal

Function Name: donchian_signal

Tags: None

Category: Price

A simple Price Channel of the Highest High of Last x Periods and Lowest Low of Last x Periods. In addition the median of the upper and lower channel is plotted.

When the price goes above upper donchian level, then issue a Sell signal. When the price goes below lower donchian level, issue a Buy signal.

Parameters:

PeriodHigh, periodLow: Donchian channel parameters.

ShowOnlyAlternateSignals: When set to True, consecutive buy/sell signals will be omitted.

ShowDonchianChannel: Show/Hide donchian channel.

Author: Richard Davoud Donchian

Link: <http://www.investopedia.com/terms/d/donchianchannels.asp>

Parameters

periodHigh



periodLow	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowOnlyAlternateSignals	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowDonchianChannel	<i>Default Value: -1</i> <i>Type: Boolean</i>

Double Exponential Moving Average

Function Name: [dema](#)

Tags: [EMA](#), [Moving Averages](#)

Category: [Trend](#)

The DEMA is a calculation based on both a single exponential moving average (EMA) and a double EMA. The DEMA is a fast-acting moving average that is more responsive to market changes than a traditional moving average. It was developed in an attempt to create a calculation that eliminated some of the lag associated with traditional moving averages. The DEMA can be used as a stand-alone indicator and can be incorporated into other technical analysis tools whose logic is based on moving averages.

Parameters

Period	<i>Default Value: 21 Minimum: 2 Maximum: 999</i> <i>Type: Numeric</i>
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Double MACD Colored

Function Name: [macd_color_double](#)

Tags: [Moving Average Convergence Divergence](#), [Moving Averages](#)

Category: [Trend](#)

The Double MACD Colored is an indicator that compares the Signal lines of 2 MACDs. This comparison can cause a much faster reaction than the normal MACD - less lag. Yet, the fast reaction is not such that it over-reacts. This indicator, like the normal MACD, can be slightly erratic.

The color of 2 MACDs is compared between today value and previous value conditions. That means if today MACD more than previous MACD, the color of MACD line will display green color. In the opposite site the today MACD less than previous MACS, the color of MACD line will display red color. This condition is applied with 2 MACDs line and 2 Triggers line.



Parameters

mov1_1

Default Value: 12 | Minimum: 2 | Maximum: 999

Type: Numeric

mov1_2

Default Value: 26 | Minimum: 2 | Maximum: 999

Type: Numeric

Trigger1

Default Value: 9 | Minimum: 2 | Maximum: 999

Type: Numeric

mov2_1

Default Value: 3 | Minimum: 2 | Maximum: 999

Type: Numeric

mov2_2

Default Value: 35 | Minimum: 2 | Maximum: 999

Type: Numeric

Trigger2

Default Value: 5 | Minimum: 2 | Maximum: 999

Type: Numeric

Dow Theory

Function Name: [dow_theory](#)

Tags: [Dow Theory](#)

Category: [Cycles](#), [Pattern](#)

The ideas of Charles Dow, the first editor of the Wall Street Journal, form the basis of technical analysis today. He believed that the behavior of the averages reflected the hopes and fears of the entire market. The three movements are as follows;

- The first is the daily variation due to local causes and the balance of buying and selling at that particular time (Ripple).
- The secondary movement covers a period ranging from days to weeks, averaging probably between six to eight weeks (Wave).
- The third move is the great swing covering anything from months to years, averaging between 6 to 48 months. (Tide).

Parameters:

PivotStrength: Minimal number of adjacent lower highs (higher lows) on each side of a high (low) for it to be declared a high (low) pivot.

UseLargeCorrectionCondition: If true, then a simple break above (below) previous lower high pivot (higher low pivot) will signal the end of the bearish (bullish) trend.

ShowZigZagLine, ShowTrendArea, ShowTrendMarks: Display control flags.



Parameters

PivotStrength	Minimal number of adjacent lower highs (higher lows) on each side of a high (low) for it to be declared a high (low) pivot. <i>Default Value: 5 Minimum: 1 Maximum: 999</i> <i>Type: Numeric</i>
UseLargeCorrectionCondition	If true, then a simple break above (below) previous lower high pivot (higher low pivot) will signal the end of the bearish (bullish) trend. <i>Default Value: -1</i> <i>Type: Boolean</i>
ShowZigZagLine	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTrendArea	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTrendMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>

Dragonfly Doji

Function Name: `dragonfly_doji`

Tags: None

Category: Candlestick, Pattern

The Dragonfly Doji is a significant bullish reversal candlestick pattern that mainly occurs at the bottom of downtrends. The Dragonfly Doji is created when the open, high, and close are the same or about the same price (Where the open, high, and close are exactly the same price is quite rare). The most important part of the Dragonfly Doji is the long lower shadow. The long lower shadow implies that the market tested to find where demand was located and found it. Bears were able to press prices downward, but an area of support was found at the low of the day and buying pressure was able to push prices back up to the opening price. Thus, the bearish advance downward was entirely rejected by the bulls. A dragonfly doji pattern is a relatively difficult chart pattern to find, but when it is found within a defined trend it is often deemed to be a reliable signal that the trend is about to change direction. As you can see from the chart, on the day of the dragonfly doji (shown within the black box), traders realize that the price was sold down to unjustifiably low levels so they send the price back up to where the stock opened. The close near the day's open suggests that demand is again starting to outweigh supply.

Link: <http://www.investopedia.com/terms/d/dragonfly-doji.asp#ixzz1h4NMWubu>

Parameters

BodyHeightMax	<i>Default Value: 0.029999999999999999 Minimum: 0 Maximum: 2</i> <i>Type: Numeric</i>
UpperShadowMax	<i>Default Value: 0.01 Minimum: 0 Maximum: 2</i> <i>Type: Numeric</i>
LowerShadowMin	



Default Value: **0.10000000000000001** | Minimum: **0** | Maximum: **999**

Type: *Numeric*

ShowTraderBar

Default Value: **-1**

Type: *Boolean*

ShowTraderMark

Default Value: **-1**

Type: *Boolean*

DSS Blau

Function Name: `dss_blaue`

Tags: `None`

Category: `Momentum`

The DSS Blau is a double-smoothed Stochastic indicator.

Author: W. Blau

Source: TAS&C 1991

Parameters

period

Default Value: **21** | Minimum: **1** | Maximum: **9999**

Type: *Numeric*

smoothing

Default Value: **3** | Minimum: **1** | Maximum: **1000**

Type: *Numeric*

DSS Bressert

Function Name: `dss_bressert`

Tags: `None`

Category: `Momentum`

The DSS Bressert is a double-smoothed (exponential moving average) Stochastic indicator.

Author: Walter Bressert

Parameters

period

Default Value: **21** | Minimum: **1** | Maximum: **9999**



smoothing	<i>Type: Numeric</i>
	<i>Default Value: 3 Minimum: 2 Maximum: 1000</i>
	<i>Type: Numeric</i>
upperLevel	
	<i>Default Value: 80 Minimum: 0 Maximum: 100</i>
	<i>Type: Numeric</i>
lowerLevel	
	<i>Default Value: 20 Minimum: 0 Maximum: 100</i>
	<i>Type: Numeric</i>

Dynamic Momentum Index

Function Name: [dynamic_momentum_index](#)

Tags: [Relative Strength Index](#)

Category: [Momentum](#), [Volatility](#)

An indicator used in technical analysis that determines overbought and oversold conditions of a particular asset. This indicator is very similar to the relative strength index (RSI). The main difference between the two is that the RSI uses a fixed number of time periods (usually 14), while the dynamic momentum index uses different time periods as volatility changes.

This indicator is interpreted in the same manner as the RSI where readings below 30 are deemed to be oversold and levels over 70 are deemed to be overbought. The number of time periods used in the dynamic momentum index decreases as volatility in the underlying asset increases, making this indicator more responsive to changing prices than the RSI.

Parameters:

StDevPeriod: Number of latest values of the security used for biased standard deviation calculation.

StDevSmoothingPeriod: Number of latest StDevPeriod values that are averaged.

RSIPeriodBase: Base number for calculation of the RSI period. This number is divided with StDev/AverageStDev ratio and then truncated to get RSI period value.

OverboughtLevel, OversoldLevel: Levels of displayed reference lines.

Parameters

StDevPeriod	<i>Default Value: 5 Minimum: 1 Maximum: 999</i>
	<i>Type: Numeric</i>
StDevSmoothingPeriod	
	<i>Default Value: 10 Minimum: 1 Maximum: 999</i>
	<i>Type: Numeric</i>
RSIPeriodBase	
	<i>Default Value: 14 Minimum: 2 Maximum: 999</i>
	<i>Type: Numeric</i>
OverboughtLevel	



Default Value: 70 | Minimum: 0 | Maximum: 100

Type: Numeric

OversoldLevel

Default Value: 30 | Minimum: 0 | Maximum: 100

Type: Numeric

Ease Of Movement

Function Name: `ease_move`

Tags: None

Category: Trend, Volume

The Ease of Movement indicator calculates and plots a measure of the relationship between price and volume. For instance, a market that rises on low volume exhibits a high Ease of Movement, generating positive values for this indicator. Negative values are generated when prices move down with light volume. When the indicator is near zero, either prices are not moving or heavy volume is required to move prices.

When the Ease of Movement indicator crosses above zero, it shows that the market is moving upwards easily; generally a buying opportunity. When the indicator crosses below zero, it is an indication that the market is moving downwards easily; usually a selling opportunity.

Parameters

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

Eight-Bar Simple Moving Average

Function Name: `eight_bar_ma`

Tags: Moving Averages

Category: Trend

Author: Brooke Gardner

Source: Stocks & Commodities, June 2012: "With A Simple Moving Average, Trading High-Yield Bonds Using ETFs"

Parameters

SourceType

Type:

MovingAverageType



Period

Type:

Default Value: **8** | Minimum: **1** | Maximum: **999**

Type: Numeric

Elder Ray Power

Function Name: er_power

Tags: None

Category: Trend

Dr. Elder cleverly named his first indicator "Elder-ray" by virtue of its function, which is figuratively similar to that of x-rays. Developed in 1989, the Elder-Ray helps determine the strength of competing groups of bulls and bears by gazing under the surface of the markets for data that may not immediately be ascertainable at a mere superficial glance at prices.

Author: Dr. Alexander Elder

Source: "Trading for a Living: Psychology, Trading Tactics, Money Management"

Link: <http://www.investopedia.com/articles/trading/03/022603.asp>

Parameters

period

Default Value: **13** | Minimum: **2** | Maximum: **9999**

Type: Numeric

UseBullPower

Default Value: **-1**

Type: Boolean

UseBearPower

Default Value: **0**

Type: Boolean

ShowLine

Default Value: **0**

Type: Boolean

ShowHistogram

Default Value: **-1**

Type: Boolean

ShowTraderMark

Default Value: **-1**

Type: Boolean



EMAFast Cross EMASlow Signal

Function Name: `ema_cross_ema`

Tags: Crossover, EMA, Exponential Moving Average

Category: Trend

This type of moving average reacts faster to recent price changes than a simple moving average. The 10- and 25-day EMAs are the most popular short-term averages, and they are used to create indicators like the moving average convergence divergence (MACD) and the percentage price oscillator (PPO). In general, the 50- and 200-day EMAs are used as signals of long-term trends.

Parameters:

PeriodFast: Period for faster EMA line. Should be a value lower than PeriodSlow.

PeriodSlow: Period for slower EMA line. Should be a value higher than PeriodFast.

ShowTraderMarks, ShowEMAs: Display control flags.

Parameters

PeriodFast	Should be a value lower than PeriodSlow <i>Default Value: 10 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
PeriodSlow	Should be a value higher than PeriodFast <i>Default Value: 25 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
ShowTraderMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEMAs	<i>Default Value: -1</i> <i>Type: Boolean</i>

Engulfing Pattern

Function Name: `eng_sig`

Tags: None

Category: Candlestick

A bullish engulfing pattern occurs when, in a downtrend, you find a solid candle immediately followed by a hollow candle. The body of the hollow candle has to enclose the body of the solid candle, in other words the Open of the hollow candle has to be lower than the Close of the solid candle and the Close of the hollow candle has to be higher than the Open of the solid candle. The Bullish Engulfing study marks a bar if a bullish engulfing pattern occurs. A bearish engulfing pattern occurs when, in an uptrend, you find a hollow candle immediately followed by a solid candle. The body of the solid candle has to enclose the body of the hollow candle, in other words the Close of the solid candle has to be lower than the Open of the hollow candle and the Open of the solid candle has to be higher than the Close of the hollow candle. The Bearish Engulfing study marks a bar if a bearish engulfing pattern occurs.



Links: <http://www.investopedia.com/terms/b/bearishengulfingp.asp>,
<http://www.investopedia.com/terms/b/bullishengulfingpattern.asp>

Parameters

Period	<i>Default Value: 5 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 1 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Envelopes

Function Name: envelopes

Tags: None

Category: Trend

The Envelopes represent bands that are plotted in a certain, identical relationship above and below the Moving Average.

Link: <http://www.investopedia.com/terms/e/envelope.asp>

Parameters

period	<i>Default Value: 38 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
shift1	<i>Default Value: 2 Minimum: 0.01 Maximum: 100</i> <i>Type: Numeric</i>
shift2	<i>Default Value: -2 Minimum: -100 Maximum: -0.01</i>



Type: Numeric

Ermanometry

Function Name: Ermanometry

Tags: None

Category: Other

Ermanometry is based on the idea that financial markets exhibit multiple and concurrent orderly growth patterns in price and time, with time being the dominant influence. A given growth pattern is founded upon a ratio of expansion that never changes. This ratio, or growth pattern, can be understood in terms of the log spiral, whose relevant characteristic is that its proportionality remains constant, whether it is increasing or decreasing in size. A fixed ratio is also a feature of rectangular spirals, whose parameters are coincident with their log spiral counterparts. Consequently, Ermanometry shows that many important market moves share the properties of rectangular spirals, whose linear properties can be exploited mathematically to identify important market turning points in the constant ratio of expansion.

The growth ratio is calculated from the seed values of DE and EF segments.

Parameters:

DE: Length of a downtrend segment expressed in number of bars, or arbitrary seed value.

EF: Number of bars in an uptrend segment following the DE segment, or arbitrary seed value.

StartYear, StartMonth, StartDay, StartHour, StartMinute: Start point for the rectangular spiral.

ShowErman, ShowColes, ShowNumbers: Flags for controlling which elements of the study will be displayed.

Source: Stocks & Commodities, September 2011: "TD Sequential And Ermanometry For Intraday Traders"

Parameters

StartYear

Default Value: **2011** | Minimum: **0** | Maximum: **9999**

Type: Numeric

StartMonth

Default Value: **9** | Minimum: **1** | Maximum: **12**

Type: Numeric

StartDay

Default Value: **8** | Minimum: **1** | Maximum: **31**

Type: Numeric

StartHour

expressed in GMT

Default Value: **15** | Minimum: **0** | Maximum: **23**

Type: Numeric

StartMinute

Default Value: **5** | Minimum: **0** | Maximum: **59**

Type: Numeric

DE

expressed in number of bars

Default Value: **16** | Minimum: **1** | Maximum: **9999**



EF	<i>Type: Numeric</i> expressed in number of bars <i>Default Value: 25 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowErman	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowColes	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowNumbers	<i>Default Value: 0</i> <i>Type: Boolean</i>

Evening Star

Function Name: [evening_star](#)

Tags: None

Category: [Candlestick](#), [Pattern](#)

The evening star pattern is a sign of a bearish market and consists of a pattern shown through three bars. The first candle is a long white body that continues the up-trend; the second candle of this pattern is a candle with a small body that can be either hollow or filled but where the body is over the Close of the first bar. The third candle is a filled body candle on which the body is gapping down under the second bar.

The Evening Star study marks a bar if an evening star pattern occurs.

Link: <http://www.investopedia.com/terms/e/eveningstar.asp>

Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 1 Minimum: 0 Maximum: 2</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>



Falling Three

Function Name: `falling_three`

Tags: Bearish Falling Three

Category: Candlestick, Pattern

The Falling Three Method is basically the opposite of the Rising Three Method, The market has been in a downtrend. A long black candle forms. It is then followed by a series of small candles, each consecutively getting higher. The optimal number of uptrending days should be three. Again, two or four or five counter trend days can be observed. The important factors are that they do not close above the open of the big black candles and that the shadows do not go above the black candle's open. The final day of the formation should open down in the body of the last uptrend day and close lower than the first big black candle's close.

Criteria:

1. A Downtrend is in progress. A long black candle forms.
2. A group of small bodied candles follow, preferably white bodied.
3. The close of any of the uptrend days not does close higher than the open of the big white candle.
4. The final day opens up into the body of the last uptrend day and proceeds to close below the close of the first big black candle day.

Parameters:

`AvgBodyHeightPeriod`: Number of bars that are averaged to form a baseline for "long body" and "small body" criteria.

`LongBodyRelativeThresh`: Factor that multiplies the baseline to form the threshold for "long body" criterion.

`SmallBodyRelativeThresh`: Factor that multiplies the baseline to form the threshold for "small body" criterion.

`MinNoOfSmallCandles`: Minimum number of small ascending candles.

`MaxNoOfSmallCandles`: Maximum number of small ascending candles.

`SmallCandlesMustBeWhite`: If true, then small candles are tested if their open is lower than close.

`SmallCandlesMustBeAscending`: If true, then each small candle (except the first one) is tested whether its midline is above the midline of the previous candle.

`UseClassicInsideCondition`: If true, then small candles are tested if their highs are lower than first candle's high and if their lows are higher than first candle's low. If false, they are only tested if highs and closes are lower than first candle's high and open (respectively).

`UseDowntrendCondition`: If true, then the indicator checks for a downtrend prior the appearance of the first long black candle.

`ShowTraderBar`, `ShowTraderMark`: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 10



SmallBodyRelativeThresh	<i>Type: Numeric</i>
	<i>Default Value: 0.5 Minimum: 0 Maximum: 1</i>
MinNoOfSmallCandles	<i>Type: Numeric</i>
	<i>Default Value: 2 Minimum: 2 Maximum: 5</i>
MaxNoOfSmallCandles	<i>Type: Numeric</i>
	<i>Default Value: 5 Minimum: 2 Maximum: 5</i>
SmallCandlesMustBeWhite	<i>Type: Boolean</i>
	<i>Default Value: 0</i>
SmallCandlesMustBeAscending	<i>Type: Boolean</i>
	<i>Default Value: -1</i>
UseClassicInsideCondition	<i>Type: Boolean</i>
	<i>Default Value: -1</i>
UseDowntrendCondition	<i>Type: Boolean</i>
	<i>Default Value: -1</i>
ShowTraderBar	<i>Type: Boolean</i>
	<i>Default Value: -1</i>
ShowTraderMark	<i>Type: Boolean</i>
	<i>Default Value: -1</i>

Fibonacci Lucas Time Series Indicator

Function Name: `FibonacciLucasTimeSeries`

Tags: None

Category: Cycles

Fibonacci time targets are found by counting forward from significant tops and bottoms. On a daily chart, the analyst counts forward the number of trading days from an important turning point with the expectation that future tops or bottoms will occur on Fibonacci days - that is, on the 13th, 21st, 34th, 55th, or 89th trading day in the future. The same technique can be used on weekly, monthly, or even yearly charts. Lucas series is based on the same formula except it uses different seed values (2 and 1): 3, 4, 7, 11, 18, 29, 47, ...

Parameters:

StartYear, StartMonth, StartDay, StartHour, StartMinute: Start point for counting the Fibonacci and Lucas series, expressed in GMT.



ShowFibonacci, ShowLucas, ShowNumbers: Flags that control whether the lines of the series and corresponding numbers should be displayed.

Source: Stocks & Commodities, August 2011: "Automated Techniques For Intraday Traders"

Parameters

StartYear	<i>Default Value: 2011 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>
StartMonth	<i>Default Value: 10 Minimum: 1 Maximum: 12</i> <i>Type: Numeric</i>
StartDay	<i>Default Value: 5 Minimum: 1 Maximum: 31</i> <i>Type: Numeric</i>
StartHour	<i>Default Value: 15 Minimum: 0 Maximum: 23</i> <i>Type: Numeric</i>
StartMinute	<i>Default Value: 5 Minimum: 0 Maximum: 59</i> <i>Type: Numeric</i>
ShowFibonacci	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowLucas	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowNumbers	<i>Default Value: 0</i> <i>Type: Boolean</i>

Fibonacci Retracements

Function Name: [fibonacci_retracement](#)

Tags: None

Category: [Cycles](#), [Trend](#)

Fibonacci Retracement

is the potential retracement of a financial asset's original move in price. Fibonacci retracements use horizontal lines based on the 1 year highest price and the 1 year lowest price to indicate areas of support or resistance at the key Fibonacci levels before it continues in the original direction. These levels are created by drawing a trendline between two extreme points and then dividing the vertical distance by the key Fibonacci ratios of 0%, 23.6%, 38.2%, 50%, 61.8% and 100%



Parameters:

Period: Number of last bars to be used for Fibonacci Retracement

Fib61, Fib50, Fib38, Fib23: Percentage values for Fibonacci levels.

ShowFibHi, ShowFib61, ShowFib50, ShowFib38, ShowFib23, ShowFibLo: Display control flags.

Parameters

Period	<i>Default Value: 260 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Fib61	% <i>Default Value: 61.799999999999997 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
Fib50	% <i>Default Value: 50 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
Fib38	% <i>Default Value: 38.200000000000003 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
Fib23	% <i>Default Value: 23.600000000000001 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowFibHi	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFib61	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFib50	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFib38	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFib23	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFibLo	<i>Default Value: -1</i> <i>Type: Boolean</i>

Fisher Transform

Function Name: fisher



Tags: None

Category: Trend

Fisher Transform (FT) is based on the assumption that prices don't have a Gaussian probability density. When the trend changes the indicator reverses very sharply.

This indicator can be very useful for pinpointing entries for short-term trades. When the FT crosses above the signal line from below, it's a bullish signal and it's time to buy. When FT crosses below the signal line from above, it's a bearish signal and it's time to sell.

Author: John Ehlers

Source: S&C Nov 2002: "Using The Fisher Transform"

Link: http://media.wiley.com/product_data/excerpt/78/04714630/0471463078.pdf

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowLine

Default Value: -1

Type: Boolean

ShowHistogram

Default Value: 0

Type: Boolean

Force Index

Function Name: `force_index`

Tags: None

Category: Volume

The Force Index is an oscillator that combines price movements and volume to measure the force, or the power, of bulls behind particular market rallies and of bears behind every decline.

Force Index is calculated by subtracting yesterday's Close from today's Close and multiplying the result by today's volume. If closing prices are higher today than yesterday, the force is positive. If closing prices are lower than yesterday's, the force is negative.

If the Force Index is above zero it signals that the bulls are in control. A negative Force Index signals that the bears are in control. If the index whipsaws around zero it signals that neither side has control and no strong trend exists.

The three key components of the Force Index are the direction of price change, the extent of the price change, and the trading volume. When the Force Index is used in conjunction with a moving average, the resulting figure can accurately measure significant changes in the power of bulls and bears.

Author: Dr. Alexander Elder

Link: <http://www.investopedia.com/articles/trading/03/031203.asp>



Parameters

period

Default Value: **10** | Minimum: **2** | Maximum: **9999**

Type: Numeric

Fractal Dimension

Function Name: `frac_dim`

Tags: None

Category: None

The Fractal Dimension indicator is a natural descriptor of trend modes and cycle modes in the markets.

Parameters: "Period" has to be an even number.

Author(s): John F. Ehlers, Ric Way

Source: Stocks & Commodities June 2010

Parameters

Period

Default Value: **30** | Minimum: **0** | Maximum: **100**

Type: Numeric

Fractals

Function Name: `fractals`

Tags: Chaos

Category: Swing

All markets are characterized by the fact that on the most part the prices do not change too much, and only short periods of time (15-30 percent) account for trend changes. Most lucrative periods are usually the case when market prices change according to a certain trend.

A Fractal is one of five indicators of Bill Williams' trading system, which allows to detect the bottom or the top.

Fractal Technical Indicator is a series of at least five successive bars, with the highest HIGH in the middle, and two lower HIGHS on both sides. The reversing set is a series of at least five successive bars, with the lowest LOW in the middle, and two higher LOWs on both sides, which correlates to the sell fractal. The fractals have High and Low values and are indicated with the up and down arrows.

The fractal needs to be filtrated with the use of Alligator. In other words, you should not close a buy transaction, if the fractal is lower than the Alligator's Teeth, and you should not close a sell transaction, if the fractal is higher than the Alligator's Teeth. After the fractal signal has been created and is in force, which is determined by its position beyond the Alligator's Mouth, it remains a signal until it gets attacked, or until a more recent fractal signal emerges.

Parameter setting:



HighPoints:

True...High turning points are shown

False...High turning points are not shown

LowPoints:

True...Low turning points are shown

False...Low turning points are not shown

Link: <http://www.investopedia.com/terms/f/fractal.asp>

Parameters

HighPoints

Default Value: -1

Type: Boolean

LowPoints

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

ShowLine

Default Value: -1

Type: Boolean

Full Stochastic Oscillator

Function Name: FullStochasticOscillator

Tags: None

Category: Momentum

Developed by George C. Lane in the late 1950s, the Stochastic Oscillator is a momentum indicator that shows the location of the close relative to the high-low range over a set number of periods. According to an interview with Lane, the Stochastic Oscillator "doesn't follow price, it doesn't follow volume or anything like that. It follows the speed or the momentum of price. As a rule, the momentum changes direction before price." As such, bullish and bearish divergences in the Stochastic Oscillator can be used to foreshadow reversals. This was the first, and most important, signal that Lane identified. Lane also used this oscillator to identify bull and bear set-ups to anticipate a future reversal. Because the Stochastic Oscillator is range bound, is also useful for identifying overbought and oversold levels.

Calculation:

Fast %K = (Current Close - Lowest Low)/(Highest High - Lowest Low) * 100

Full %K = Fast %K smoothed with X-period SMA



Full %D = X-period SMA of Full %K

Parameters:

LBperiod: Look-back period (the period in which highest and lowest are calculated)

Kperiod: MA smoothing parameter for full %K

Dperiod: MA smoothing parameter for full %D

Link: http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:stochastic_oscillator

Parameters

LBperiod	look-back period <i>Default Value: 14 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Kperiod	period of SMA smoothing of %K <i>Default Value: 3 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Dperiod	period of SMA of full %K <i>Default Value: 3 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
OverboughtLevel	<i>Default Value: 80 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OversoldLevel	<i>Default Value: 20 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowFullK	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFullD	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowLevels	<i>Default Value: -1</i> <i>Type: Boolean</i>

Gap

Function Name: [gap](#)

Tags: [None](#)

Category: [Pattern](#), [Price](#)

The Gap study marks a bar if the Low of a bar is higher than the High of the previous bar, or the High is lower than the Low of the previous bar.



Parameters

UseGapUp	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseGapDown	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>

Gator Oscillator

Function Name: [gator_osc](#)

Tags: [Oscillator](#)

Category: [Trend](#)

The Gator Oscillator is based on the Alligator indicator, which is a combination of three Smoothed Moving Averages at the mid price, referred to as the Alligator's Jaw (blue), the Alligator's Teeth (red) and the Alligator's Lips (green). It shows the degree of convergence / divergence of the three lines.

The top bar chart shows the difference between the Jaw and Teeth lines (blue and red), the bottom chart shows the difference between the Teeth and Lips lines (red and green) and is drawn top-down.

The Gator Oscillator helps identify a trend in combination with the Alligator on which it is based - when the Alligator lines diverge, this signals the start of a trend.

Author: Bill Williams

GMMA

Function Name: [gmma](#)

Tags: [Moving Averages](#)

Category: [Trend](#)

The GMMA is a Multi Exponential Moving Average Indicator with 12 different periods.

Link: <http://www.investopedia.com/terms/g/guppy-multiple-moving-average.asp>



Parameters

period1

Default Value: 3 | Minimum: 2 | Maximum: 9999

Type: Numeric

period2

Default Value: 5 | Minimum: 2 | Maximum: 9999

Type: Numeric

period3

Default Value: 8 | Minimum: 2 | Maximum: 9999

Type: Numeric

period4

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

period5

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

period6

Default Value: 15 | Minimum: 2 | Maximum: 9999

Type: Numeric

period7

Default Value: 30 | Minimum: 2 | Maximum: 9999

Type: Numeric

period8

Default Value: 35 | Minimum: 2 | Maximum: 9999

Type: Numeric

period9

Default Value: 40 | Minimum: 2 | Maximum: 9999

Type: Numeric

period10

Default Value: 45 | Minimum: 2 | Maximum: 9999

Type: Numeric

period11

Default Value: 50 | Minimum: 2 | Maximum: 9999

Type: Numeric

period12

Default Value: 60 | Minimum: 2 | Maximum: 9999

Type: Numeric

GMMA Oscillator

Function Name: `gmma_osc`

Tags: Moving Averages

Category: Trend



The GMMA Oscillator is a combination of:

- The difference between the EMA(3) and the EMA(15) as a line.
- The difference between the EMA(30) and the EMA(60) as a line.
- The difference between the EMA(15) and the EMA(60) as a histogram.

Link: <http://www.investopedia.com/terms/g/guppy-multiple-moving-average.asp>

Parameters

mov1

Default Value: 3 | Minimum: 2 | Maximum: 9999
Type: Numeric

mov2

Default Value: 15 | Minimum: 2 | Maximum: 9999
Type: Numeric

mov3

Default Value: 30 | Minimum: 2 | Maximum: 9999
Type: Numeric

mov4

Default Value: 60 | Minimum: 2 | Maximum: 9999
Type: Numeric

Gravestone Doji

Function Name: [gravestone_doji](#)

Tags: None

Category: [Candlestick](#), [Pattern](#)

The Gravestone Doji pattern is formed when the opening and closing price are equal and occur at the low of the day. The long upper shadow suggests that the forces of supply and demand are nearing a balance. This pattern is commonly used to suggest that the direction of the trend maybe be nearing a major turning point. A gravestone doji pattern is a common reversal pattern used to suggest that a bullish rally or trend is about to reverse. It can also be found at the end of a downtrend, but this version is much more rare. On the day of the gravestone doji, bearish traders realized that the price was pushed up to unjustifiably high levels so they send the price back up to where the stock opened. The close near the day's low suggests that supply is starting to outweigh demand again.

Parameters

BodyHeightMax

Default Value: 0.029999999999999999 | Minimum: 0 | Maximum: 2
Type: Numeric

UpperShadowMin

Default Value: 0.100000000000000001 | Minimum: 0 | Maximum: 999
Type: Numeric

LowerShadowMax



ShowTraderBar	<i>Default Value: 0.01 Minimum: 0 Maximum: 2</i> <i>Type: Numeric</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>

HACO Long Term

Function Name: `hacolt`

Tags: `haco`, `heikin ashi`, `oscillator`

Category: `Candlestick`

The indicator shows three levels: - Level 0: An open short position. - Level 50: No open position. - Level 100: An open long position.

Buy/Sell Long/Short signals: - From zero or 50 to 100 is a buy long signal. - from 100 to 50 or zero is a close long signal. - From 100 or 50 to zero is a buy short signal

Author: Sylvain Vervoot

Source: S&C July 2008: "Long-Term Trading Using Exchange Traded Funds"

Parameters

avg	<i>Default Value: 55 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
CandleSize	<i>Default Value: 1.1000000000000001 Minimum: 0.01 Maximum: 5</i> <i>Type: Numeric</i>
LTAverage	<i>Default Value: 60 Minimum: 1 Maximum: 200</i> <i>Type: Numeric</i>
ShowTradeMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>

Halloween Indicator

Function Name: `halloween`

Tags: `None`

Category: `Cycles`



The exploitation of the Halloween indicator is a simple and effective strategy. The stocks are purchased on October 1 then retained until May 1 of the following year.

Selecting ETFs: The two exchange traded funds (ETFs) used in my system are PowerShares DB Commodity Index Tracking (DBC) and the ProShares Ultra Dow30 (DDM). The commodity fund DBC tracks a basket of commodities and the DDM fund provides twice the return of the Dow 30 index. Both funds are highly volatile, and investing in each produces drawdowns of more than 50%. Yet allocating equal portions to each reduces volatility and provides superior returns when used with seasonal factors.

A model for trading: This model consists of two ideas: begin looking for ETFs on October 1, but don't buy until the price of the ETF surpasses its 50-day moving average. For any ETF bought, hold it until May 1 of the next calendar year.

Author: Trent Gardner

Source: Stocks & Commodities, December 2012: "A Seasonal Strategy With Leveraged ETFs"

Parameters

SMAPeriod

Default Value: 50 | Minimum: 1 | Maximum: 999

Type: Numeric

Hammer

Function Name: hammer

Tags: None

Category: Candlestick, Pattern

The hammer pattern usually occurs on a downtrend, and it is named so because this pattern is believed to hammer out a bottom. Hammers indicate a bullish market on the horizon. A hammer requires that the bar have a short body and that the lower shadow has to be at least twice as long as the real body of the candlestick.

The Hammer study marks a bar if a hammer pattern occurs.

Link: <http://www.investopedia.com/terms/h/hammer.asp>

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

NBars

Default Value: 1 | Minimum: 0 | Maximum: 2

Type: Numeric

Tail

Default Value: 2 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: -1



ShowTraderMark

Type: Boolean

Default Value: -1

Type: Boolean

Hanging Man

Function Name: `hanging_man`

Tags: None

Category: Candlestick, Pattern

The hanging man is a Japanese Candlestick pattern indicating the end of a top. The Hanging Man occurs in an uptrend but indicates a bearish market on the horizon.

The Hanging Man study marks a bar if a hanging man pattern occurs.

Link: <http://www.investopedia.com/terms/h/hangingman.asp>

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

NBars

Default Value: 1 | Minimum: 0 | Maximum: 2

Type: Numeric

Tail

Default Value: 2 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

Harami

Function Name: `harami`

Tags: None

Category: Candlestick, Pattern

A Harami formation indicates loss of momentum and often warns of reversal after a strong trend. Harami means 'pregnant' which is quite descriptive. The second candlestick must be contained within the body of the first, though the shadows may protrude slightly.



Criteria:

1. Market is in uptrend (downtrend).
2. A large green (red) candle occurs,
3. followed by a small candle (of any color).
4. The second candle gaps below (above) the first bar's close and doesn't trade above (below) previous day's close, which means that the high (low) is below (above) previous bar's close.
5. The second bar is completely contained within the body of the first bar, though the shadows may protrude slightly.

If all conditions are met, then Bearish (Bullish) Harami is signalled.

Parameters:

AvgBodyHeightPeriod: Number of previous bars averaged to form a baseline for body size.

LongBodyRelativeThresh: Baseline multiplier that produces the final threshold for minimum size of the first bar.

SmallerBodyRelativeSize: Second candle's body maximum size relative to first candle's body.

RelativeShadowProtrusion: How much can second candle's shadow protrude from the first candle, expressed relative to the first candle's body size.

UseTrendCondition: If false, then first criterion is excluded.

SecondBarOppositeColor: If true, then second bar must be colored opposite from the first bar.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 10

Type: Numeric

SmallerBodyRelativeSize

Default Value: 1 | Minimum: 0 | Maximum: 1

Type: Numeric

RelativeShadowProtrusion

Default Value: 0.10000000000000001 | Minimum: 0 | Maximum: 0.5

Type: Numeric

UseTrendCondition

Default Value: -1

Type: Boolean

SecondBarOppositeColor

Default Value: -1

Type: Boolean

Haurlan Index

Function Name: [haurlan](#)



Tags: None

Category: Market Breadth

The Haurlan Index is an exponential moving average of the advances minus the declines. There are three variations for short- (Period = 3) , intermediate- (Period = 20), and long-term (Period = 200) analysis, using three different exponential moving averages.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the Coppock Breadth of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: P. N. Haurlen

Parameters

Index

Type:

Period

Default Value: 20 | Minimum: 2 | Maximum: 99999

Type: Numeric

Heikin Ashi Candlestick Oscillator

Function Name: haco

Tags: Oscillator

Category: Candlestick

Author: Sylvain Vervoot

Source: S&C Dec 2008: "Trading With The Heikin-Ashi Candlestick Oscillator"

Parameters

Period

Default Value: 34 | Minimum: 2 | Maximum: 100

Type: Numeric



ShowTraderMark

Default Value: -1

Type: Boolean

Herrick Payoff Index

Function Name: hpi

Tags: HPI, Open Interest

Category: Volume

The HPI (Herrick Payoff Index) measures the money flow of an underlying asset or option as well as significant divergences between the price activity and the indicator, determining whether a market is bullish or bearish. Positive values are generally bullish indications as there is increasing interest in the market. Negative values are generally bearish indications as there is decreasing interest in the market. HPI examines open interest in relation to price activity and volume. Since the HPI indicator uses open interest as a key element in its calculations, it can only be used in conjunction with daily futures or options data. Mult is the contract value of a 1 cent move in the underlying asset.

When HPI crosses above zero this shows that interest in the market is growing. This is regarded as a positive sign (bullish). On the other hand, readings below zero can be interpreted as a negative sign (bearish).

Another important occurrence in the Index is when it moves to an extreme, then reverses quite sharply. This indicates that the price reached a short-term buying or selling climax.

The Index often shows whether a rally signaled by other short term indicators will turn out to be worthwhile or not.

Author: John Herrick, Steven B. Achelis

Source: "Technical Analysis From A To Z"

Link: <http://www.investopedia.com/articles/trading/03/011703.asp>

Parameters

Mult

Default Value: 100 | Minimum: 1 | Maximum: 9999

Type: Numeric

Factor

Default Value: 0.1 | Minimum: 0 | Maximum: 1

Type: Numeric

High Relative Strength Mutual Funds

Function Name: rs_mutual

Tags: None

Category: Trend, Volatility

Method for generating entry and exit signals generated from highly correlated funds. Each entry signal is based on a combination of the referenced and traded symbol's volatility and trend.



Parameters

ReferenceAvgLen

Default Value: 20 | Minimum: 0 | Maximum: 100

Type: Numeric

TargetAvgLen

Default Value: 10 | Minimum: 0 | Maximum: 100

Type: Numeric

HiLo Oscillator

Function Name: hilo_osc

Tags: Oscillator

Category: Swing

The high/low oscillator uses the range between one period's high price and the previous period's closing price as a ratio of the total range in a series of periods.

Historic Volatility

Function Name: hist_vol

Tags: Statistics

Category: Volatility

The Historic Volatility indicator is a statistical standard deviation calculation that shows the historic volatility of the base instrument.

Parameters

period

Default Value: 45 | Minimum: 1 | Maximum: 9999

Type: Numeric

factor

Default Value: 365 | Minimum: 1 | Maximum: 9999

Type: Numeric

Ichimoku Kinko Hyo

Function Name: ichimoku

Tags: None

Category: Price

The indicator consists of 5 lines:

Kijun Sen (Standard Line) Average of the highest and the lowest price of the past 26 days.

Tenkan Sen (Turning Line) Average of the highest and the lowest price of the past 9 days



Chikou Span (Delayed Line) Backward projection of today's price (26 days delayed)

Senkou Span A (1st preceeding Line) Forward projection of the average of Standard Line and Turning Line (26 days)

Senkou Span B (2nd preceeding Line) Forward projection of the highest and the lowest price of the past 52 days (26 days)

The calculation of the lines is based on the highest high and the lowest low of a period.

Link: <http://www.investopedia.com/terms/i/ichimokuchart.asp>

Parameters

period1

Default Value: 9 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 26 | Minimum: 1 | Maximum: 9999

Type: Numeric

period3

Default Value: 52 | Minimum: 1 | Maximum: 9999

Type: Numeric

Implied Volatility

Function Name: [implied_volatility](#)

Tags: [Relation](#)

Category: [Volatility](#)

The estimated volatility of a security's price. In general, implied volatility increases when the market is bearish and decreases when the market is bullish. This is due to the common belief that bearish markets are more risky than bullish markets. In addition to known factors such as market price, interest rate, expiration date, and strike price, implied volatility is used in calculating an option's premium. IV can be derived from a model such as the Black-Scholes Model.

Note:

The calculation is based on Black-Scholes Model. The chart that study is applied to must have two securities displayed: One for SpotPrice and the other for OptionPrice.

Parameters:

StrikePrice: Strike price of the option.

IsCallOption: If call option, set to True. If put option, then set to False.

InterestRatePrecent: Central bank interest rate.

DaysPerYear: Number of days in a year. This number is used to divide the number of days remaining so it can be multiplied with interest rate.

ExpDay, ExpMonth, ExpYear: Date of option expiration.

Read more: <http://www.investopedia.com/terms/i/iv.asp#ixzz1hG2b6o2n>



Parameters

StrikePrice	<i>Default Value: 50 Minimum: 0 Maximum: 99999</i> <i>Type: Numeric</i>
IsCallOption	<i>Default Value: -1</i> <i>Type: Boolean</i>
InterestRatePercent	<i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
DaysPerYear	<i>Default Value: 365 Minimum: 365 Maximum: 366</i> <i>Type: Numeric</i>
ExpDay	<i>Default Value: 15 Minimum: 1 Maximum: 31</i> <i>Type: Numeric</i>
ExpMonth	<i>Default Value: 6 Minimum: 1 Maximum: 12</i> <i>Type: Numeric</i>
ExpYear	<i>Default Value: 2012 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>

Impulse System

Function Name: [imp_sys](#)

Tags: [None](#)

Category: [Momentum](#)

The Impulse System identifies buy or sell signals. When both EMA and MACD Histograms rise the system gives buy signals and the bars are colored in green. When both decline it indicates a sell signal and the bars are colored in red. When EMA and MACD Histogram point in the opposite direction the bars are blue.

Author: Dr. Alexander Elder

Link: <http://www.investopedia.com/articles/trading/03/092403.asp>

Parameters

EMAPeriod	<i>Default Value: 13 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
MacdSPer	<i>Default Value: 12 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
MacdLPer	



Shift	<i>Default Value: 26 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
Trigger	<i>Default Value: 0 Minimum: 0 Maximum: 5</i> <i>Type: Numeric</i>
Trigger	<i>Default Value: 9 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>

Inside Bar

Function Name: `inside`

Tags: Relations

Category: Pattern, Price

The Inside Bar study marks a bar if the High is lower than the previous High and the Low is higher than the previous Low.

Parameters

ShowTraderMarks	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderBars	<i>Default Value: -1</i> <i>Type: Boolean</i>

Inverse Fisher Transform Stochastic Oscillator

Function Name: `ift_stoch_osc`

Tags: IFT, Oscillator

Category: Momentum

Source: "Applying The Put/Call Ratio Indicator" by Sylvain Vervoort, Stocks & Commodities Magazine, December 2011.

Parameters

StochPeriod	<i>Default Value: 30 Minimum: 2 Maximum: 100</i> <i>Type: Numeric</i>
StochSlowing	<i>Default Value: 5 Minimum: 1 Maximum: 10</i>



MAWPeriod

Type: Numeric

Default Value: 2 | Minimum: 1 | Maximum: 100

Type: Numeric

Inversion

Function Name: inversion

Tags: None

Category: Other

The Inversion indicator is simply the mirror image of the time series in pane 1 being plotted in the chart pane 2.

Inverted Hammer

Function Name: inverted_hammer

Tags: None

Category: Candlestick, Pattern

The Inverted Hammer indicates that the prior downtrend is about to end and may reverse to an uptrend or move sideways. This pattern is an indication of a financial instrument's short-term outlook. The Inverted Hammer forms when the Upper Shadow is longer than the Real Body and the Lower Shadow is small or non-existent. The Inverted Hammer is the same as a Shooting Star, but the Inverted Hammer only appears at the end of a downtrend.

Recognition criteria:

1. Market is in a downtrend.
2. The first day of the pattern is a black candlestick formed at the lower end of the trading range.
3. The second day of the pattern is a small real body and is formed at the lower end of the trading range.
4. Upper shadow of the second candlestick should be at least twice as long as its real body.
5. Lower shadow of the second candlestick is small or non-existent.

Parameters:

AvgBodyHeightPeriod: The number of body heights that are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for long body of the first candlestick.

SmallBodyRelativeThresh: Baseline multiple used to form the threshold for short body if the second candlestick.

UpperShadowMinRelativeSize: Minimum size of the second candlestick's upper shadow relative to its real body.

LowerShadowMaxRelativeSize: Maximum size of the second candlestick's lower shadow relative to its real body.

ShowTraderBar, ShowTraderMark: Display control flags.

Link: <http://www.candlesticker.com/Cs30.asp>



Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

SmallBodyRelativeThresh

Default Value: 0.5 | Minimum: 0 | Maximum: 1

Type: Numeric

UpperShadowMinRelativeSize

Default Value: 2 | Minimum: 2 | Maximum: 100

Type: Numeric

LowerShadowMaxRelativeSize

Default Value: 0.20000000000000001 | Minimum: 0 | Maximum: 1

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

Keltner Channel Signal

Function Name: [kc_sig](#)

Tags: [Bands](#)

Category: [Trend, Volatility](#)

Author: [Chester W. Keltner](#)

Parameters

Period

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

Factor

Default Value: 0.5 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean



ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean

Keltner Channels

Function Name: `kc`

Tags: Bands

Category: Trend, Volatility

The Keltner Channel is a channel that is based on a multiplication (Factor) of Average True Ranges above and below a moving average. Keltner Channel is most commonly used with studies or strategies that measure or take advantage of market volatility. It is similar in concept to the Bollinger Bands.

The Keltner Channel returns the Simple Moving Average of the Close prices for the previous bars in a chosen Period, added to the Average True Range value and multiplied with the Factor parameter.

Author: Chester W. Keltner

Link: <http://www.investopedia.com/terms/k/keltnerchannel.asp>

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

u_pct

Default Value: 1 | Minimum: -1000 | Maximum: 1000

Type: Numeric

l_pct

Default Value: 1 | Minimum: -1000 | Maximum: 1000

Type: Numeric

Key Reversal Major LX

Function Name: `krm_lx`



Tags: None

Category: Pattern, Price

A key reversal is a chart pattern that usually signals the end of a trend.

The Key Reversal Major LX study marks a bar if the High price is higher than the highest High over the last Period bars, and the Close price is lower than the Close of the previous bar.

Link: <http://www.investopedia.com/terms/r/reversal.asp>

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderMarks

Default Value: 0

Type: Boolean

ShowTraderBars

Default Value: -1

Type: Boolean

Key Reversal Major SX

Function Name: `krm_sx`

Tags: None

Category: Pattern, Price

A key reversal is a chart pattern that usually signals the end of a trend.

The Key Reversal Major SX study marks a bar if the Low price is lower than the lowest Low price over the last Period bars, and the Close price is higher than the Close of the previous bar.

Link: <http://www.investopedia.com/terms/r/reversal.asp>

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderMarks

Default Value: 0

Type: Boolean

ShowTraderBars

Default Value: -1

Type: Boolean



KRI

Function Name: kri

Tags: None

Category: Trend

KRI is a simple oscillator - it is the simple percentual difference between two Simple Moving Averages.

Parameters

period1

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 35 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

Laguerre RSI

Function Name: laguerre_rsi

Tags: None

Category: Momentum

The Laguerre RSI uses a Laguerre filter to provide a "time warp" so that the low frequency components are delayed more than the high frequency components, enabling much smoother filters to be created using less data.

A typical use of the Laguerre RSI is to buy after the line crosses back over the 20% level and sell after the price crosses back down over the 80% level.

The price damping factor can be customized for optimal use to best suit the trade instruments data by altering the Gamma factor, which is usually between 0.55 and 0.85. The lower the Gamma factor, the faster and more aggressive the entry.

Author: John Ehler

Publication: "Cybernetic Analysis for Stocks and Futures"

Parameters

gamma

Default Value: 0.7 | Minimum: -1 | Maximum: 1

Type: Numeric



upperLevel

Default Value: 0.8 | Minimum: 0 | Maximum: 1

Type: Numeric

lowerLevel

Default Value: 0.2 | Minimum: 0 | Maximum: 1

Type: Numeric

Linear Regression

Function Name: `lin_reg_val`

Tags: Statistics

Category: Trend

The Linear Regression indicator is a statistical tool used to predict future market values relative to their past values, and is normally plotted on a price chart as a straight line like a trend line. The Linear Regression indicator, however, does not plot a straight line when it is plotted, it curves through price activity. Its curve is a result of plotting a line through each end point of invisible linear regression trend lines. Each invisible trend line plots the minimal distance between closing prices, using the least squares method, over the number of bars defined in the input Period.

The indicator helps to determine where a market's price might be in the near future using current and past price history. If prices are trending up, linear regression attempts to logically determine what the upward bias of the price may be relative to the current price. If prices are trending down, it will attempt to determine the downward bias of the price. Some analysts believe that when prices rise above or fall below the linear regression line, they are overextended and will begin to move back towards the line. Thus, the line is used to monitor when a price move may change direction.

Link: <http://www.investopedia.com/terms/r/regression.asp>

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

targetB

Default Value: 0 | Minimum: -1000 | Maximum: 1000

Type: Numeric

Linear Regression Channel

Function Name: `lin_reg_channel`

Tags: Statistics

Category: Trend

This study draws a least-mean-square fit line of last period number of values and parallel lines above and below this line. These lines represent standard deviations of price values from the LMS fit line, multiplied by the `StDevMultiple` parameter. Two standard deviations will cover about 95% of values above and below the LMS fit line (assuming gaussian distribution of prices).



Parameters

Period

Default Value: **200** | Minimum: **3** | Maximum: **1000**

Type: Numeric

StDevMultiple

Default Value: **2** | Minimum: **0** | Maximum: **5**

Type: Numeric

Linear Regression Slope

Function Name: [linear_regression_slope](#)

Tags: Statistics

Category: Trend

The slope of a linear regression trend line, fitted using the method of least squares, is the Linear Regression Slope. The slope shows how prices have changed per unit of time.

Parameters

Period

Default Value: **14** | Minimum: **2** | Maximum: **999**

Type: Numeric

Long Legged Doji

Function Name: [long_legged_doji](#)

Tags: None

Category: Candlestick, Pattern

A type of candlestick formation where the opening and closing prices are nearly equal despite a lot of price movement throughout the trading day. This candlestick is often used to signal indecision about the future direction of the underlying asset. Long-legged doji candles are deemed to be the most significant when they occur during a strong uptrend or downtrend. The long-legged doji suggests that the forces of supply and demand are nearing equilibrium and that a shift in the direction of the trend may be coming.

Read more: <http://www.investopedia.com/terms/l/long-legged-doji.asp#ixzz1h8bC7QpV>

Parameters

BodyHeightMax

Default Value: **0.10000000000000001** | Minimum: **0** | Maximum: **2**

Type: Numeric

UpperShadowMin

Default Value: **0.29999999999999999** | Minimum: **0** | Maximum: **100**

Type: Numeric

LowerShadowMin



ShowTraderBar	<i>Default Value: 0.299999999999999999 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTradermark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTradermark	<i>Default Value: -1</i> <i>Type: Boolean</i>

MA3 Cross Over Signal

Function Name: `ma3co_sig`

Tags: Crossover, Moving Averages

Category: Trend

A buy/sell signal occurs when the three simple Moving Averages (defined by Fast / Med / SlowPeriod) cross.

Link: <http://www.investopedia.com/terms/s/sma.asp>

Parameters

FastPeriod	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
MedPeriod	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
SlowPeriod	<i>Default Value: 50 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i>



Type: Boolean

MACD

Function Name: `macd`

Tags: Moving Average Convergence Divergence, Moving Averages

Category: Trend

The Moving Average Convergence Divergence (MACD) indicator calculates moving averages that can monitor and signal trends. It is both a trend-following indicator as well as an oscillator.

The Moving Average Convergence Divergence indicator calculates two exponential moving averages of the lengths specified by the inputs `mov1` and `mov2`. The difference between these two averages is then plotted as the MACD. This value is also averaged for the number of bars specified by the input `Trigger` and then plotted as the `TRIGG`. Finally, the difference between the MACD and the `TRIGG` is calculated and plotted as the `OscE`. As a trend-following indicator, the MACD may be interpreted similarly to other moving averages. When the MACD crosses above the MACD Average, an uptrend may be beginning, indicating a buy signal. Conversely, when the MACD crosses below the `TRIGG`, a downtrend may be beginning. As an oscillator, the MACD can signal overbought and oversold conditions.

Link: <http://www.investopedia.com/terms/m/macd.asp>

Parameters

mov1

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

mov2

Default Value: 26 | Minimum: 2 | Maximum: 9999

Type: Numeric

Trigger

Default Value: 9 | Minimum: 2 | Maximum: 200

Type: Numeric

MACD Cross and Overzero Signal

Function Name: `macd_cross_and_overzero_signal`

Tags: Crossover, Moving Average Convergence Divergence

Category: Trend

A trend-following momentum indicator that shows the relationship between two moving averages of prices. The MACD is calculated by subtracting the 26-day exponential moving average (EMA) from the 12-day EMA. A nine-day EMA of the MACD, called the "signal line", is then plotted on top of the MACD, functioning as a trigger for buy and sell signals. There are three common methods used to interpret the MACD:

1. Crossovers - As shown in the chart above, when the MACD falls below the signal line, it is a bearish signal, which indicates that it may be time to sell. Conversely, when the MACD rises above the signal line, the indicator gives a bullish signal, which suggests that the price of the asset is likely to experience upward momentum. Many traders wait



for a confirmed cross above the signal line before entering into a position to avoid getting getting "faked out" or entering

into a position too early, as shown by the first arrow.

2. Divergence - When the security price diverges from the MACD. It signals the end of the current trend.

3. Dramatic rise - When the MACD rises dramatically - that is, the shorter moving average pulls away from the longer-term moving average - it is a signal that the security is overbought and will soon return to normal levels.

Traders also watch for a move above or below the zero line because this signals the position of the short-term average relative to the long-term average. When the MACD is above zero, the short-term average is above the long-term average, which signals upward momentum. The opposite is true when the MACD is below zero. As you can see from the chart above, the zero line often acts as an area of support and resistance for the indicator.

Signal criteria:

- Previous MACD value more than previous Signal value and today MACD value less than today Signal value then displays "sell" signal.

- Previous MACD value less than previous Signal value and today MACD value more than today Signal value and today MACD value more than zero then displays "buy" signal.

Parameters:

mov1, mov2: Periods for MACD calculation ($MACD = EMA(P, mov1) - EMA(P, mov2)$)

Trigger: Period for MACD trigger signal calculation

UseOverzeroCondition: If set to true, "Buy" signal will require the additional condition that MACD must be greater than zero.

ShowHistogram, ShowMacd, ShowTrigger, ShowTraderMark: Display flags

Parameters

mov1

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

mov2

Default Value: 26 | Minimum: 2 | Maximum: 9999

Type: Numeric

Trigger

Default Value: 9 | Minimum: 2 | Maximum: 200

Type: Numeric

UseOverzeroCondition

Default Value: -1

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean

ShowMacd

Default Value: -1

Type: Boolean

ShowTrigger

Default Value: -1



ShowTraderMark

Type: Boolean

Default Value: -1

Type: Boolean

MACD Forest

Function Name: `macd_forest`

Tags: None

Category: Trend

The MACD Forest displays the difference between MACD and the trigger line. The Moving Average Convergence Divergence indicator calculates moving averages that can monitor and signal trends. It is both a trend-following indicator as well as an oscillator.

The Moving Average Convergence Divergence indicator calculates two exponential moving averages of the lengths specified by the inputs `mov1` and `mov2`. The difference between these two averages is then plotted as the MACD. This value is also averaged for the number of bars specified by the input `Trigger` and then plotted as the `TRIGG`. Finally, the difference between the MACD and the `TRIGG` is calculated and plotted as the MACD Forest.

As a trend-following indicator, the MACD may be interpreted similarly to other moving averages. When the MACD crosses above the MACD Average, an uptrend may be beginning, indicating a buy signal. Conversely, when the MACD crosses below the `TRIGG`, a downtrend may be beginning. As an oscillator, the MACD can signal overbought and oversold conditions.

Link: <http://www.investopedia.com/terms/m/macd.asp>

Parameters

mov1

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

mov2

Default Value: 26 | Minimum: 2 | Maximum: 9999

Type: Numeric

trigger

Default Value: 9 | Minimum: 2 | Maximum: 200

Type: Numeric

ShowLine

Default Value: 0

Type: Boolean

ShowHistogram

Default Value: -1

Type: Boolean



MACD Leader

Function Name: `macd_lead`

Tags: None

Category: Trend

Source: S&C Jul 2008: "Leader of the MACD"

Parameters

FastLength

Default Value: 12 | Minimum: 1 | Maximum: 9999

Type: Numeric

SlowLength

Default Value: 26 | Minimum: 1 | Maximum: 9999

Type: Numeric

MACD Predictor

Function Name: `macd_predictor`

Tags: Moving Average Convergence Divergence

Category: Trend

MACD Predictor shows the relationship between two period of smoothing factors of moving average prices. The MACD predictor line falls below the signal line, it is a bearish signal which indicates that it may be time to sell. Conversely, when the MACD predictor rises above the signal line, the indicator gives a bullish signal which suggests that the price of the asset is likely to experience upward momentum. When the MACD Predictor rises as divergence with the security price, it signals the end of the current trend.

Parameters

MacdPeriod1

Default Value: 12 | Minimum: 2 | Maximum: 999

Type: Numeric

MacdPeriod2

Default Value: 26 | Minimum: 2 | Maximum: 999

Type: Numeric

MacdSignalPeriod

Default Value: 9 | Minimum: 2 | Maximum: 999

Type: Numeric

ShowTraderMarks

Default Value: -1

Type: Boolean

ShowMACD

Default Value: -1



Type: Boolean

MACD Signal

Function Name: `macd_sig`

Tags: Moving Averages

Category: Trend

The Moving Average Convergence Divergence (MACD) indicator calculates moving averages that can monitor and signal trends. It is both a trend-following indicator as well as an oscillator. The Moving Average Convergence Divergence indicator calculates two exponential moving averages of the lengths specified by the inputs `mov1` and `mov2`. The difference between these two averages is then plotted as the MACD. This value is also averaged for the number of bars specified by the input `Trigger` and then plotted as the `TRIGG`. Finally, the difference between the MACD and the `TRIGG` is calculated and plotted as the `OscE`. As a trend-following indicator, the MACD may be interpreted similarly to other moving averages. When the MACD crosses above the MACD Average, an uptrend may be beginning, indicating a buy signal. Conversely, when the MACD crosses below the `TRIGG`, a downtrend may be beginning. As an oscillator, the MACD can signal overbought and oversold conditions.

Link: <http://www.investopedia.com/terms/m/macd.asp>

Parameters

mov1

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

mov2

Default Value: 26 | Minimum: 2 | Maximum: 9999

Type: Numeric

Trigger

Default Value: 9 | Minimum: 2 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean



Major Swing Levels

Function Name: swing_lvls

Tags: None

Category: Swing

A Minor Swing Level is defined by a number of lower/higher bars before and after the bar. Hence, a Swing Level can only be found retrospectively. The Major Swing Levels, called Major Resist/Support, determine a trend-break of Minor Swing Levels. Interpretation: Not every Swing Level has a special meaning or should be used for technical analysis, as they may originate in insecure markets, or too less information. The indicator searches for Swing Levels that are validated by the market. A trend of rising Major Swing Levels indicates a healthy situation and an up-trend in the market, and vice versa a trend of falling MSL.

Parameters

nBars

Default Value: 2 | Minimum: 0 | Maximum: 100
Type: Numeric

ShowMinorSwingPoints

Default Value: 0
Type: Boolean

ShowMajorSwingPoints

Default Value: -1
Type: Boolean

ShowTraderMark

Default Value: -1
Type: Boolean

ShowTraderBar

Default Value: 0
Type: Boolean

ShowLine

Default Value: -1
Type: Boolean

Market Facilitation Index

Function Name: market_fx

Tags: None

Category: Other

The Market Facilitation Index measures the efficiency of price movement within a market by measuring the change in price (High - Low) per bar (or tick) relative to the volume per bar. It can be applied only to intraday or tick data.



Market Thrust

Function Name: `market_thrust`

Tags: None

Category: Market Breadth

The Market Thrust indicator is used to identify overbought / oversold markets based on advancing and declining issues and volume. The Market Thrust indicator weighs the number of advancing and declining issues by its respective volume and subtracts these results:

$\text{Advancing Issues} * \text{Advancing Volume} - \text{Declining Issues} * \text{Declining Volume}$

This indicator also calculates an average of the Market Thrust. This average differs from the Market Thrust calculation in that the average is less sensitive to short, quick reversals. Therefore, the average Market Thrust produces a "smoother" calculation compared to the daily Market Thrust calculation.

When the average Market Thrust is greater than zero the market is considered to be in an overbought market. When the average Market Thrust is less than zero the market is considered to be in an oversold market. Therefore this indicator also plots a zero line on the chart.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/MarketThrust.html>

Parameters

Index

Type:

Period

Default Value: 4 | Minimum: 1 | Maximum: 99999

Type: Numeric

Shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

Marubozu

Function Name: `marubozu`

Tags: None

Category: Candlestick

Link: <http://en.wikipedia.org/wiki/Marubozu>

Parameters

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark



Default Value: -1

Type: Boolean

Mass Index

Function Name: `mass_index`

Tags: None

Category: Trend

The Mass Index indicator focuses on the oscillation of the daily range of prices.

The Mass Index uses the range of the bars to calculate several values, including exponential averages of the ranges. It then calculates and plots an index of these calculations. The Mass Index is used in trending markets to monitor direction and warn of potential changes in market direction.

The Mass Index signals a possible price reversal when the Mass Index line crosses above the setup line and subsequently falls below the trigger line. This is known as a reversal bulge. The Mass Index does not identify the trend direction, but rather warns of possible reversal.

Author: Donald Dorsey

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/MassIndex.html>

Parameters

period

Default Value: 25 | Minimum: 1 | Maximum: 9999

Type: Numeric

Setup

Default Value: 27 | Minimum: 1 | Maximum: 100

Type: Numeric

Trigger

Default Value: 26.5 | Minimum: 1 | Maximum: 100

Type: Numeric

Mass Index Signal

Function Name: `mass_index_sig`

Tags: None

Category: Trend

The Mass Index indicator focuses on the oscillation of the daily range of prices. The Mass Index uses the range of the bars to calculate several values, including exponential averages of the ranges. It then calculates and plots an index of these calculations.

The Mass Index is used in trending markets to monitor direction and warn of potential changes in market direction. The Mass Index signals a possible price reversal when the Mass Index line crosses above the setup line and subsequently falls below the trigger line. This is known as a reversal bulge. The Mass Index does not identify the trend direction, but rather warns of possible reversal.



Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/MassIndex.html>

Parameters

Period

Default Value: 27 | Minimum: 2 | Maximum: 9999
Type: Numeric

Setup

Default Value: 25 | Minimum: 0 | Maximum: 100
Type: Numeric

Trigger

Default Value: 26.5 | Minimum: 0 | Maximum: 100
Type: Numeric

ShowTraderBar

Default Value: 0
Type: Boolean

ShowTraderMark

Default Value: -1
Type: Boolean

ShowEachOccurrence

Default Value: 0
Type: Boolean

UseBullishSignals

Default Value: -1
Type: Boolean

UseBearishSignals

Default Value: -1
Type: Boolean

Mat Hold

Function Name: `mat_hold`

Tags: None

Category: Candlestick, Pattern

Mat Hold Pattern found in the technical analysis of stocks that ultimately indicates the stock will continue its previous directional trend (bullish or bearish). The pattern is initially indicated by a significant trading day in one direction or another, followed by three small opposite trending days. The fifth day then continues the first day's trend, pushing higher or lower, in the same direction as the first day's movement. The mat hold pattern is considered a very reliable but rare indicator in the technical analysis of stocks. It is often confused with the rising three's indicator, with the difference being that the trades on days two to four of the rising three indicator generally stay within the high and low established on the first day. The trading range of days two to four in the mat hold pattern can be trade outside of the high-low range made on the first day.

Criteria:

1. An uptrend (downtrend) is in progress.



2. A long white (black) candle forms.
3. Followed by a small black (white) candle that gaps up (down) and doesn't trade back to the close value of the first candle.
4. Second, third and fourth candles are small and descending (ascending).
5. Fourth candle is black (white).
6. All three small candles' bodies remain above the low (below the high) of the first day.
7. The final day gaps up (down) and closes above (below) the trading ranges of the previous four days, forming a long white (black) candle.

If all criteria are satisfied, a BullishMatHold (BearishMatHold) is marked on the chart.

Parameters:

AvgBodyHeightPeriod: The number of body heights that are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

SmallBodyRelativeThresh: Baseline multiple used to form the threshold for "small body".

UseTrendCondition: If false, then the criterion No. 1 is not tested.

ShowMark, ShowBar: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: **14** | Minimum: **1** | Maximum: **999**

Type: Numeric

LongBodyRelativeThresh

Default Value: **1.2** | Minimum: **0** | Maximum: **999**

Type: Numeric

SmallBodyRelativeThresh

Default Value: **0.80000000000000004** | Minimum: **0** | Maximum: **1**

Type: Numeric

UseTrendCondition

Default Value: **-1**

Type: Boolean

ShowMark

Default Value: **-1**

Type: Boolean

ShowBar

Default Value: **-1**

Type: Boolean

Maximum Drawdown

Function Name: maxdd

Tags: None

Category: Other



The Maximum Drawdown (MDD) up to a certain bar is the maximum of the drawdowns over the history of the price.

Calculation: $((\text{Lowest Low} / \text{Highest High}) - 1) * 100$

McClellan Oscillator

Function Name: `mcc`

Tags: Oscillator

Category: Market Breadth

The McClellan Oscillator indicator calculates the difference between Advancing Issues and Declining Issues, then calculates two exponential averages of this difference. The difference between the two averages is then calculated and plotted on the chart. The difference between advancing issues and declining issues is known as market breadth. For example, if a stock market index is rallying but there are more issues declining than advancing, then the rally is narrow and much of the stock market is not participating.

The McClellan Oscillator is used in trending markets to identify tops and bottoms based on the difference between the number of advancing and declining issues. This indicator is also used to identify divergences which assist in determining overbought/oversold markets. A bottom is said to occur when the McClellan Oscillator crosses from below zero to above zero indicating a bullish signal. A top is said to occur when the McClellan Oscillator crosses from above zero to below zero indicating a bearish signal.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than [are moving lower, and it is used](#) to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the Coppock Breadth of "Adidas" should be calculated, one has to select "DAX".

Author: Sherman and Marian McClellan

Link: http://en.wikipedia.org/wiki/McClellan_Oscillator

Parameters

Index

Type:

fastPeriod

Default Value: **19** | Minimum: **2** | Maximum: **9999**

Type: Numeric

slowPeriod

Default Value: **39** | Minimum: **2** | Maximum: **9999**

Type: Numeric



McClellan Summation Index

Function Name: `mcc_sig`

Tags: None

Category: Market Breadth

The McClellan Summation Index is the cumulative sum of all daily McClellan Oscillator readings, and provides a long-range view of market breadth. The Summation Index therefore changes each day by the value of the oscillator, rising when the Oscillator is positive and declining when the Oscillator is negative.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the Coppock Breadth of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: S. and M. McClellan

Parameters

Index

	Type:
fastPeriod	Default Value: 19 Minimum: 2 Maximum: 9999 Type: Numeric
slowPeriod	Default Value: 39 Minimum: 2 Maximum: 9999 Type: Numeric

Median Price

Function Name: `median`

Tags: None

Category: Other

Adding the highest and lowest price of the observation period and then dividing by two calculates the Median Price indicator. The result is the average price over the observation period.



Merriman Breadth Model

Function Name: merriman

Tags: None

Category: Market Breadth

This indicator uses the A/D line and a market index. It utilizes a relationship between the two: A buy signal is given, when the A/D line is 2% or more above its moving average (with parameter "Period"), and when the index is 2% or more above its moving average (with parameter "Period"). A sell signal is given, when the A/D line is 2% or more below its moving average (with parameter "Period"), and when the index is 2% or more below its moving average (with parameter "Period").

Data components required:

- Advances - Declines - Market Index

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the Merriman Breadth of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: Paul Merriman

Parameters

Index

Type:

Period

Default Value: 150 | Minimum: 0 | Maximum: 99999

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean



UseBearishSignals

Default Value: -1

Type: Boolean

MESA Sine Phase

Function Name: [mesa_sine_phase](#)

Tags: [MESA Sine Wave](#)

Category: [Cycles](#)

Calculates the phase of the first harmonic of Discrete Fourier Transform. This study is used by the MESA Sine Wave study.

Parameters

DominantCycle: Length of the array used for DFT calculation.

Parameters

DominantCycle

Default Value: 15 | Minimum: 1 | Maximum: 999

Type: Numeric

MESA Sine Wave

Function Name: [mesa_sine_wave](#)

Tags: [MESA Sine Wave](#)

Category: [Cycles](#)

The MESA Sine Wave was developed by John Ehlers and was introduced in his article in the November, 1996. The MESA Sine Wave indicator looks like a sine wave when the market is in a cycle mode and tends to wander when the market is in a trend mode.

The MESA Sine Wave indicator consists of two plots - one displaying the Sine of the measured phase angle over the time period parameter and the other the Sine of the phase angle advanced by 45 degrees (called the Lead Sine). Together, the crossings of the Sine and Lead Sine plots give clear advanced indication of cycle mode turning points.

When the MESA Sine wave indicator resembles an actual sine wave, this suggests the market is in a cycle mode. The indicator lines are not well structured when the market is in a trend mode. A buy signal is given when the Sine plot crosses above the Lead Sine plot. A sell signal is given when the Sine plot crosses below the Lead Sine plot. An obvious advantage that the MESA Sine wave indicator has over its "overbought/oversold" counterparts is that it enters and exits much more precisely without giving up a piece of the market's movement by waiting for confirmation.

This study plots the sine wave of the measured phase angle and the phase angle advanced by 45 degrees.

Parameters:

DominantCycle: Number of bars used for phase calculation.

AdvanceDegrees: Phase shift of the second sine wave (lead wave).

ShowTraderMarks, ShowSineWaves: Display control flags.



Parameters

DominantCycle

Default Value: 15 | Minimum: 1 | Maximum: 999
Type: Numeric

AdvanceDegrees

Default Value: 45 | Minimum: -180 | Maximum: 180
Type: Numeric

ShowTraderMarks

Default Value: 0
Type: Boolean

ShowSineWaves

Default Value: -1
Type: Boolean

Midas Channel

Function Name: [midas_ch](#)

Tags: None

Category: None

This indicator is based on a mathematical modification of the volume weighted average price. The Midas curves (see "Midas Indicator" works because price and volume readings marking the start of change in trends are linked with the subsequent changes in price and volume readings. Any indication that price is reversing against the upper or lower band of the Midas channel will imply that it will move back at least as far as to the standard Midas curve or else to the opposite band. If the price breaks out, this is usually a significant occurrence because it indicates a resumption of or change in trend. When price does break out, the outer boundary will often reverse its support/resistance role.

Author: Paul Levine

Source: Stocks & Commodities July 2010

Parameters

StartMinute

Default Value: 30 | Minimum: 0 | Maximum: 59
Type: Numeric

StartHour

Default Value: 9 | Minimum: 0 | Maximum: 23
Type: Numeric

StartDay

Default Value: 1 | Minimum: 1 | Maximum: 30
Type: Numeric

StartMonth

Default Value: 1 | Minimum: 1 | Maximum: 12
Type: Numeric



StartYear

Default Value: 2009 | Minimum: 2000 | Maximum: 2010
Type: Numeric

UpperPct

Default Value: 0.1 | Minimum: 0 | Maximum: 100
Type: Numeric

LowerPct

Default Value: -0.2 | Minimum: -100 | Maximum: 0
Type: Numeric

Midas Indicator

Function Name: midas

Tags: None

Category: Other

Source: S&C Sep 2008

Parameters

StartMinute

Default Value: 30 | Minimum: 0 | Maximum: 59
Type: Numeric

StartHour

Default Value: 9 | Minimum: 0 | Maximum: 23
Type: Numeric

StartDay

Default Value: 1 | Minimum: 1 | Maximum: 30
Type: Numeric

StartMonth

Default Value: 1 | Minimum: 1 | Maximum: 12
Type: Numeric

StartYear

Default Value: 2008 | Minimum: 2000 | Maximum: 2009
Type: Numeric

Modified Stochastic Oscillator

Function Name: modified_stochastic_oscillator

Tags: None

Category: Momentum



The modified stochastic study lets users use alternative periods and moving average calculations in stochastics. The formula for modified stochastics is identical to the formula used in stochastics; however, users may adjust the number of periods and the moving average calculation through the Modified Stochastics properties.

Calculation:

Fast %K = (Current Close - Lowest Low)/(Highest High - Lowest Low) * 100

Full %K = Fast %K smoothed with Kperiod SMA (MMA, EMA)

Full %D = Dperiod SMA (MMA, EMA) of Full %K

Parameters:

LBperiod: Look-back period (the period in which highest and lowest are calculated)

Kperiod: MA period for full %K

Dperiod: MA period for full %D

Show*_SMA, Show*_MMA, Show*_EMA, ShowLevels: Display control flags.

Link: http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:stochastic_oscillator

Parameters

LBperiod	look-back period <i>Default Value: 14 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Kperiod	<i>Default Value: 3 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
Dperiod	<i>Default Value: 3 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
OverboughtLevel	<i>Default Value: 80 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OversoldLevel	<i>Default Value: 20 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowFullK_MMA	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFullD_MMA	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowFullK_EMA	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowFullD_EMA	<i>Default Value: 0</i>



ShowFullK_SMA	<i>Type: Boolean</i>
	<i>Default Value: 0</i>
	<i>Type: Boolean</i>
ShowFullD_SMA	<i>Default Value: 0</i>
	<i>Type: Boolean</i>
ShowLevels	<i>Default Value: -1</i>
	<i>Type: Boolean</i>

Momentum

Function Name: mom

Tags: None

Category: Momentum

The Momentum is calculated by computing the continuous difference between prices at fixed intervals. The default settings calculate and plot the net change between the Close of a bar and the Close 20 bars earlier. Measuring current prices versus earlier prices sheds light on the pace of a trend and possible trend reversals. It may also be useful in identifying overbought and oversold conditions when the Momentum becomes extremely strong or weak.

Link: <http://www.investopedia.com/terms/m/momentum.asp>

Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

Momentum Change

Function Name: mom_change

Tags: None

Category: Momentum

The Momentum Increasing option marks a bar if momentum is increasing (using a 10-bar average of momentum). Momentum Increasing might indicate the speeding up of a trend. The Momentum Decreasing option marks a bar if momentum is decreasing (using a 10-bar average of momentum). Momentum Decreasing might indicate the slowing down of a trend.

Link: <http://www.investopedia.com/terms/m/momentum.asp>



Parameters

Period_Mom

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Period_Movs

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseIncrease

Default Value: -1

Type: Boolean

UseDecrease

Default Value: -1

Type: Boolean

ShowTraderMarks

Default Value: 0

Type: Boolean

ShowTraderBars

Default Value: -1

Type: Boolean

Momentum Signal

Function Name: [mom_sig](#)

Tags: [None](#)

Category: [Momentum](#)

The Momentum is calculated by computing the continuous difference between prices at fixed intervals. The default settings calculate and plot the net change between the Close of a bar and the Close 20 bars earlier. Measuring current prices versus earlier prices sheds light on the pace of a trend and possible trend reversals. It may also be useful in identifying overbought and oversold conditions when the Momentum becomes extremely strong or weak.

Link: <http://www.investopedia.com/terms/m/momentum.asp>

Parameters

Period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark



ShowEachOccurence	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Money Flow Index

Function Name: mfi

Tags: None

Category: Other

The Money Flow Index is a momentum indicator used to measure the strength of money flowing in and out of an asset. It calculates an indexed value based on price and volume for the number of bars specified in the input Period. Calculations are made for each bar with an average price greater than the previous bar and for each bar with an average price less than the previous bar. These values are then indexed to calculate and plot the Money Flow. The use of both price and volume provides a different perspective from price or volume alone. The Money Flow indicator tends to show dramatic oscillations and can be useful in identifying overbought and oversold conditions.

Link: <http://www.investopedia.com/terms/m/mfi.asp>

Parameters

period	<i>Default Value: 14 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
upperLevel	<i>Default Value: 70 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
lowerLevel	<i>Default Value: 30 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>

Morning Star

Function Name: morning_star

Tags: None

Category: Candlestick, Pattern



The morning star pattern is a sign of a bullish market; these characteristics are shown through three bars. The first continues the downtrend; the second is under the Close of the first bar. The third is gapping up over the second bar.

The Morning Star study marks a bar if a morning star pattern occurs.

Link: <http://www.investopedia.com/terms/m/morningstar.asp>

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999
Type: Numeric

NBars

Default Value: 1 | Minimum: 0 | Maximum: 2
Type: Numeric

ShowTraderBar

Default Value: -1
Type: Boolean

ShowTraderMark

Default Value: -1
Type: Boolean

Moving Average Adaptive Kaufmann

Function Name: kama

Tags: Moving Averages

Category: Trend

The Adapting Moving Average is automatically adapted to the volatility of the market. It uses the noise level of the market to calculate the length of the trend required to determine the average.

Author: Perry Kaufmann

Source: "Trading Systems and Methods"

Link: <http://www.amazon.com/Trading-Systems-Methods-Wiley/dp/0471148792>

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999
Type: Numeric

Moving Average Centered

Function Name: movs_c



Tags: [Moving Averages](#)

Category: [Trend](#)

The Moving Average Centered is calculated the same as the Simple Moving Average - the difference is where the first point is plotted. A Centered Average plots the first point at the center bar of the specified Period. For example: The first point for a 3 PERIOD Centered Average would be plotted at the second Bar. In the case of a Centered Average with an even number of PERIODs, the first point would be plotted at the bar immediately to the right of the center bar.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: -100 | Maximum: 100

Type: Numeric

Moving Average Cross

Function Name: `movc`

Tags: [Crossover](#), [Moving Averages](#)

Category: [Trend](#)

This study marks a bar at any intersection point of two moving averages with different periods.

Parameters

fastPeriod

Default Value: 9 | Minimum: 1 | Maximum: 9999

Type: Numeric

slowPeriod

Default Value: 18 | Minimum: 1 | Maximum: 9999

Type: Numeric

shiftFast

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

shiftSlow

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric



Moving Average Cross Signal

Function Name: `movc_sig`

Tags: Moving Averages, Crossover

Category: Trend

This study marks a bar at any intersection point of two moving averages with different periods, and gives a buy/sell signal.

Parameters

FastPeriod

Default Value: 9 | Minimum: 1 | Maximum: 9999

Type: Numeric

SlowPeriod

Default Value: 18 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean

Moving Average Displaced

Function Name: `movs_disp`

Tags: Moving Averages

Category: Trend

One of the problems with moving averages, or any other trend-following signal, is their inability to hug closely to a trend while still having the desired smoothing effect. Slow moving averages smooth well but are often far from the action, while fast moving averages are overly responsive. Displaced moving averages attempt to remedy this effect. The Moving Average Displaced indicator is created by calculating a simple moving average, and then projecting it in the future by displacing it a given number of days.



Parameters

period

Default Value: 12 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

period_Dis

Default Value: 3 | Minimum: -9999 | Maximum: 9999

Type: Numeric

Moving Average Envelope

Function Name: [moving_average_envelope](#)

Tags: [Moving Average](#), [SMA](#)

Category: [Trend](#)

Moving Average Envelopes consist of a moving average plus and minus a certain user defined percentage deviation. The inputs of the Moving Average Envelopes indicator is shared below: 1. Moving Average: A simple moving average of both the highs and the lows. (generally 20-period, but varies among technical analysts; also, a person could use only the close when calculating the moving average, rather than two)

2. Upper Band: The moving average of the highs plus a user defined percentage increase (usually between 1 & 10%).

3. Lower Band: The moving average of the lows minus a user defined percentage (again, usually between 1 & 10%).

A trading band composed of two moving averages, one of which is shifting upwards and the other shifting downwards.

These trading bands are used by technical analysts to define a stock's upper and lower boundaries. Signals to sell occur when the stock price reaches the upper band, and buy signals are generated when the price reaches the lower band.

The reasoning behind the sell and buy signals is that stock prices tend to bounce off the bands. Even though buyers and sellers will temporarily pressure a stock's price to its extremes, it should re-stabilize to more realistic levels found within the envelope.

Parameters:

Period: Period for the SMA

UpperBandPercent: How much will the SMA(Close) or SMA(High) be shifted up, given in percent.

LowerBandPercent: How much will the SMA(Close) or SMA(Low) be shifted down, given in percent.

UseClose: Flag that sets whether to use Close (if True) or High and Low (if False) to calculate the SMA and envelopes.

ShowMA, ShowEnvelopes, ShowTraderMark: Display flags.

Read more: <http://www.investopedia.com/terms/e/envelope.asp#ixzz1hEfkUcm9>

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 9999



UpperBandPercent	<i>Type: Numeric</i> <i>Default Value: 5 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
LowerBandPercent	<i>Default Value: 5 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
UseClose	use Close or High and Low? <i>Default Value: -1</i> <i>Type: Boolean</i>
ShowMALine	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEnvelopes	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>

Moving Average Exponential

Function Name: [move](#)

Tags: [EMA](#), [Moving Averages](#)

Category: [Trend](#)

The moving average may be the most widely used indicator. The Exponential Moving Average indicator calculates and plots an exponentially weighted average of prices (Close prices), from each of the most recent number of bars specified by the Period parameter.

The Exponential Moving Average indicator assigns more weight to recent price data, and less weight to prices further back in time. It is more sensitive to price activity than the simple moving average and tends to stick closer to the trend.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters:

period: Number of bars used for calculating the moving average.

shift: Vertical shift of the moving average line, given as percentage.

Parameters

period

Default Value: 21 | Minimum: 2 | Maximum: 9999

Type: Numeric



shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

Moving Average Four

Function Name: `movs_four`

Tags: Moving Averages

Category: Trend

The four moving averages approach addresses some of the problems inherent in moving averages while losing none of the advantages. The method uses four moving averages in sets of two. The two longer moving averages are used strictly as trend identifiers, and the two shorter moving averages are more sensitive and so used for timing the entries and exits.

Parameters

period1

Default Value: 4 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 9 | Minimum: 1 | Maximum: 9999

Type: Numeric

period3

Default Value: 18 | Minimum: 1 | Maximum: 9999

Type: Numeric

period4

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift1

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

shift2

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

shift3

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

shift4

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric



Moving Average Fractal Adaptive

Function Name: `frama`

Tags: Moving Averages

Category: Trend

The Fractal Adaptive Moving Average (FRAMA) indicator was introduced by John Ehlers. Based on the assumption that market prices are fractal, this indicator presents a new method of adaptive smoothing. The purpose of this indicator is to eliminate bad whipsaw trades.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Author: John Ehlers

Parameters

period

Default Value: 16 | Minimum: 2 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

Moving Average Hull

Function Name: `moveh`

Tags: Moving Averages

Category: Trend

The Hull Moving Average (HMA) indicator was developed by Alan Hull, an Australian technical analyst. This indicator is a very fast Moving Average and in fact it almost eliminates lag altogether and is also improving the smoothing at the same time.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Author: Alan Hull

Parameters

period

Default Value: 20 | Minimum: 2 | Maximum: 9999

Type: Numeric



Moving Average Momentum

Function Name: `movs_mom`

Tags: Moving Averages

Category: Momentum, Trend

The Moving Average Momentum study intensifies the smoothing affect of a MA. It is calculated as the difference of the MA value at time t and the MA value at $t-1$.

Parameters

period

Default Value: 21 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

period_momentum

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

Moving Average Oscillator

Function Name: `movs_osc`

Tags: Moving Averages, Oscillator

Category: Trend

The Moving Average Oscillator indicator plots the difference between two moving averages of different lengths or types. The difference of two moving averages with different sensitivities to market action provides an indication of the development of a change in the market environment, such as the emergence of a new trend or a trend reversal.

Parameters

period1

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 28 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift1

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

shift2

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric



Moving Average Rolling

Function Name: `movr`

Tags: Moving Averages

Category: Trend

The moving average may be the most widely used indicator. The Rolling Moving Average indicator calculates and plots a moving average of prices (closing prices), from each of the most recent number of bars specified by the Periods parameter. The Rolling Moving Average indicator assigns a weight to the price data as the average is calculated, though less weight is assigned to each later price in the series.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

period

Default Value: 21 | Minimum: 2 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

Moving Average Simple

Function Name: `movs`

Tags: Moving Averages, SMA

Category: Trend

The moving average may be the most widely used indicator. The Simple Moving Average gives equal weight to all the prices in the series.

The Simple Moving Average indicator is generally used to identify or confirm a trend and works best in trending markets. It will not signal that a trend change is imminent, but it will help determine if an existing trend is still in motion and help confirm when a trend reversal has taken place.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

period

Default Value: 21 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric



Moving Average Simple Signal

Function Name: `movs_sig`

Tags: Moving Averages

Category: Trend

The moving average may be the most widely used indicator. The Simple Moving Average gives equal weight to all the prices in the series. The Simple Moving Average indicator is generally used to identify or confirm a trend and works best in trending markets. It will not signal that a trend change is imminent, but it will help determine if an existing trend is still in motion and help confirm when a trend reversal has taken place. A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

Period

Default Value: 21 | Minimum: 1 | Maximum: 9999

Type: Numeric

NBars

Default Value: 5 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurrence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean

Moving Average Smooth

Function Name: `mov_smooth`

Tags: Moving Averages

Category: Trend



The Smoothed Moving Average is similar to a simple moving average. However, in a smoothed moving average, rather than subtracting the oldest value the previous smoothed average value is subtracted.

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

Moving Average Triangular

Function Name: `movt`

Tags: [Moving Averages](#)

Category: [Trend](#)

The Moving Averages Triangular indicator places the majority of the weight on the middle portion of the price series. They are actually double-smoothed simple moving averages. The periods used in the simple moving averages varies depending on if you specify an odd or even number of time periods.

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Moving Average Triple

Function Name: `movtrip`

Tags: [Moving Averages](#)

Category: [Trend](#)

The moving average may be the most widely used indicator. The Triple Moving Average indicator calculates and plots three simple arithmetic averages of the same prices (Close prices), from each of the most recent number of bars specified by the Period parameter. How the three averages relate to each other can help determine the strength or weakness of a trend. It can also be used to determine bullish and bearish trends as well as to generate buy and sell signals.

Moving averages are generally used for trend identification. Attention is given to the direction in which the averages are moving and to the relative position of prices and the averages. Rising moving average values (direction) and prices above the short moving average and the shorter moving averages above the longer moving averages (position) would indicate an uptrend. Declining moving average values and prices below the short moving average and the shorter moving averages below the longer moving averages would indicate a downtrend. Using multiple moving averages may make it easier to gauge neutral periods, or differentiate between strong and weak trends.

Parameters

period1

Default Value: 15 | Minimum: 1 | Maximum: 9999



period2	<i>Type: Numeric</i>
	<i>Default Value: 30 Minimum: 1 Maximum: 9999</i>
	<i>Type: Numeric</i>
period3	<i>Default Value: 50 Minimum: 1 Maximum: 9999</i>
	<i>Type: Numeric</i>

Moving Average Variable

Function Name: [movv](#)

Tags: [Moving Averages](#)

Category: [Trend](#)

The Moving Average Variable indicator is an exponential moving average that automatically adjusts the smoothing percentage based on the volatility of the data series. The more volatile the data, the more sensitive the smoothing constant used in the moving average calculation. As volatility ratio the VHF (Vertical Horizontal Filter) indicator is used. Sensitivity is increased by giving more weight to the current data.

Most moving average calculation methods are unable to compensate for trading range versus trending markets. During trading ranges (when prices move sideways in a narrow range) shorter term moving averages tend to produce numerous false signals. In trending markets (when prices move up or down over an extended period) longer term moving averages are slow to react to reversals in trend. By automatically adjusting the smoothing constant, a variable moving average is able to adjust its sensitivity, allowing it to perform better in both types of markets.

Parameters

period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i>
	<i>Type: Numeric</i>

Moving Average Variable Index Dynamic

Function Name: [vidya](#)

Tags: [Moving Averages](#)

Category: [Trend](#)

The Variable Index Dynamic Average (VIDYA) dynamically adjusts the alpha of an exponential moving average according to the ratio of the Standard Deviation of Close prices over a period of time to the Standard Deviation of Close prices over a longer period of time.

A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Author: Tushar Chande, Stanley Kroll



Parameters

period1

Default Value: **30** | Minimum: **1** | Maximum: **9999**

Type: Numeric

period2

Default Value: **9** | Minimum: **1** | Maximum: **9999**

Type: Numeric

shift

Default Value: **0** | Minimum: **0** | Maximum: **100**

Type: Numeric

Moving Average Weighted

Function Name: movw

Tags: WMA

Category: Trend

The moving average may be the most widely used indicator. The Weighted Moving Average indicator calculates and plots a weighted average of prices, from each of the most recent number of bars specified by the Period parameter. The Weighted Moving Average indicator assigns more weight to recent price data, and less weight to prices further back in time. It is used for the same purpose and in the same way as a moving average. However, it can provide stronger and earlier indications to trend direction and reversals because it tracks the recent data more closely.

Moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

period

Default Value: **21** | Minimum: **1** | Maximum: **9999**

Type: Numeric

shift

Default Value: **0** | Minimum: **0** | Maximum: **100**

Type: Numeric

Moving VWAP

Function Name: moving_vwap

Tags: None

Category: Other

This indicator draws two things:

1. The Moving Volume Weighted Average Price. 2. The estimated standard deviation of the vwap from the closing price calculated on the entire moving window. The inner area shows +/-StdDev, while the outer area represents +/- 2*StdDev.



Parameters:

StdDevFactor: Scales the deviation.

Period: Width of the moving window on which the vwap sum and deviation is calculated (expressed in number of bars).

ShowVWAP, ShowDev: Display control flags.

Link: <http://en.wikipedia.org/wiki/VWAP>

Parameters

StdDevFactor

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

Period

Default Value: 14 | Minimum: 1 | Maximum: 99999

Type: Numeric

ShowVWAP

Default Value: -1

Type: Boolean

ShowDev

Default Value: -1

Type: Boolean

Negative Volume Index

Function Name: [nvi](#)

Tags: [None](#)

Category: [Volume](#)

The Negative Volume Index (NVI) displays changes only on days when volume decreases from the previous day. The interpretation is based on the assumption that on days with increasing trade volumes, the crowd-following "uninformed" investors are in the market.

Link: <http://www.investopedia.com/terms/n/nvi.asp>

Net Change

Function Name: [netchange](#)

Tags: [None](#)

Category: [Other](#)



The Net Change indicator calculates and plots the net change, between each bar's Close and the previous bar's Close. This indicator is a quick and easy method of viewing price swings on a bar-by-bar basis illustrating price volatility.

The Net Change indicator plots #Hi and #Low lines on the chart, with HiAlert and LowAlert values respectively. Default value for these two lines is 0, but you can assign any other value. The basic signal with these two lines is the crossover. This can help you to easily seen when net change has crossed the upper and lower limit line.

Link: <http://www.investopedia.com/terms/n/netchange.asp>

Parameters

HiAlert

Default Value: 1 | Minimum: 0 | Maximum: 99999

Type: Numeric

LowAlert

Default Value: -1 | Minimum: -99999 | Maximum: 0

Type: Numeric

Net Line

Function Name: `net_line`

Tags: Statistics

Category: Market Breadth

Net Line shows the difference value between two instruments specified by user.

Notis Percent V

Function Name: `perc_v`

Tags: None

Category: Volatility

A way to measure volatility is to measure the daily ranges between the High and the Low. Volatility is high when the daily range is large and low when the daily range is small. The Notis %V Signal contains two separate indicators. It divides market volatility into upward and downward components (UVLT and DVLT). The upward component is also compared to the total volatility (UVLT + DVLT) and expressed as a percentage; thus the name, %V. Volatility can be a key to options trading. A good sense of market volatility can help you avoid those frustrating times when the market moves your way but your option still loses value.

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric



Number Of Bars Of Highest High

Function Name: `highest_barnum`

Tags: None

Category: Other

The Number of Bars of Highest High returns the number of the bar on which the highest price value occurred for the recent number of bars specified by the Period parameter.

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Number Of Bars Of Lowest Low

Function Name: `lowest_barnum`

Tags: None

Category: Other

The Number of Bars of Lowest Low returns the number of the bar on which the lowest price value occurred for the recent number of bars specified by the Period parameter.

Parameters

period

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

OBV New Extremes

Function Name: `obv_extr`

Tags: None

Category: Volume

The OBV New Extremes Study indicates whether a new high/low is reached in On Balance Volume.

The On Balance Volume is calculated as the continuous consecutive sum of volumes, whereby the entire volume of the day is added to the volume of the previous day's OBV, if today's closing price is above yesterday's closing price, and entire volume of the day is subtracted from the volume of the previous day's OBV if today's closing price is below yesterday's closing price.

The use of both price and volume provides a different perspective from price or volume alone. For example, higher prices with light volume will cause On Balance Volume to rise slowly, possibly indicating that the trend lacks conviction.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/OnBalanceVolume.html>



Parameters

Period	<i>Default Value: 15 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 3 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
NewHighs	<i>Default Value: -1</i> <i>Type: Boolean</i>
NewLows	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>

OHLC Of Last x Periods

Function Name: `ohlc_extr`

Tags: None

Category: Other

The OHLC of Last x Periods study defines an envelope of values by using the lowest/highest open (FidType = 1), high (FidType = 2), low (FidType = 3) or close (FidType = 4) over a duration of x periods.

Parameters

period	<i>Default Value: 20 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
UseHighest	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseLowest	<i>Default Value: -1</i> <i>Type: Boolean</i>



On Balance Volume

Function Name: `obv`

Tags: None

Category: Price, Volume

The On Balance Volume indicator is calculated as the continuous consecutive sum of volumes, whereby the entire volume of the day is added to the volume of the previous day's OBV, if today's closing price is above yesterday's closing price, and entire volume of the day is subtracted from the volume of the previous day's OBV if today's closing price is below yesterday's closing price.

The use of both price and volume provides a different perspective from price or volume alone. For example, higher prices with light volume will cause On Balance Volume to rise slowly, possibly indicating that the trend lacks conviction.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/OnBalanceVolume.html>

Open Interest

Function Name: `Open_Interest`

Tags: OI

Category: Other

The Open Interest (OI) indicator plots the number of open contracts for the futures market. It can help confirm trends and trend reversals. An increase in the OI along with an increase in price confirms an upward trend. A decrease while prices are making new highs is often seen as a signal of a possible trend reversal.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/OpenInterest.html>

Oscillator Exponential

Function Name: `osc_exp`

Tags: Oscillator

Category: Trend

The Exponential Oscillator is the simple difference between two Exponential Moving Averages.

An oscillator helps determine whether a market is overbought or oversold. These indicators show us when a market has become extreme (moved too far in one direction). When this occurs, the market usually corrects itself by pausing and then moving sideways, or even moving in the opposite direction of the existing trend.

Oscillators also indicate a divergence, usually before it actually occurs, during the extreme price activity. When this occurs, it is usually a sign that a trend is losing momentum.

Parameters

period1

Default Value: 5 | Minimum: 2 | Maximum: 9999

Type: Numeric

period2



Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

Oscillator Rolling

Function Name: `osc_roll`

Tags: Oscillator

Category: Trend

The Rolling Oscillator is the simple difference between two Rolling Moving Averages.

An oscillator helps determine whether a market is overbought or oversold. These indicators show us when a market has become extreme (moved too far in one direction). When this occurs, the market usually corrects itself by pausing and then moving sideways, or even moving in the opposite direction of the existing trend.

Oscillators also indicate a divergence, usually before it actually occurs, during the extreme price activity. When this occurs, it is usually a sign that a trend is losing momentum.

Parameters

period1

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

Oscillator Simple

Function Name: `osc_simp`

Tags: Oscillator

Category: Trend

The Simple Oscillator is the simple difference between two Simple Moving Averages.

An oscillator helps determine whether a market is overbought or oversold. These indicators show us when a market has become extreme (moved too far in one direction). When this occurs, the market usually corrects itself by pausing and then moving sideways, or even moving in the opposite direction of the existing trend.

Oscillators also indicate a divergence, usually before it actually occurs, during the extreme price activity. When this occurs, it is usually a sign that a trend is losing momentum.

Parameters

period1

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 35 | Minimum: 1 | Maximum: 9999



Type: Numeric

Oscillator Weighted

Function Name: `osc_weight`

Tags: Oscillator

Category: Trend

The Weighted Oscillator is the simple difference between two Weighted Moving Averages.

An oscillator helps determine whether a market is overbought or oversold. These indicators show us when a market has become extreme (moved too far in one direction). When this occurs, the market usually corrects itself by pausing and then moving sideways, or even moving in the opposite direction of the existing trend.

Oscillators also indicate a divergence, usually before it actually occurs, during the extreme price activity. When this occurs, it is usually a sign that a trend is losing momentum.

Parameters

period1

Default Value: **5** | Minimum: **1** | Maximum: **9999**

Type: Numeric

period2

Default Value: **10** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Outside Bar

Function Name: `outside`

Tags: None

Category: Price

The Outside Bar study marks a bar if the High is higher than the previous High and a Low is lower than the previous Low.

Parameters

ShowTraderBar

Default Value: **-1**

Type: Boolean

ShowTraderMark

Default Value: **0**

Type: Boolean



Overbought Oversold Index

Function Name: obos

Tags: None

Category: Momentum

The Overbought / Oversold (OBOS) indicator is very similar to the Stochastic and the Williams %R indicators. It relates the difference between today's closing price and the period's Low with the trade margin of the given period. Thus, it indicates the relative position of the closing price within the given period.

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

Overbought Oversold Market

Function Name: overbs

Tags: None

Category: Trend

The Overbought Market study indicates an Overbought Market Trend. The Oversold Market study indicates an Oversold Market Trend.

Links: <http://www.investopedia.com/terms/o/overbought.asp>, <http://www.investopedia.com/terms/o/oversold.asp>

Parameters

mov1

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

mov2

Default Value: 26 | Minimum: 2 | Maximum: 9999

Type: Numeric

triggerPeriod

Default Value: 9 | Minimum: 2 | Maximum: 9999

Type: Numeric

showTraderBar

Default Value: -1

Type: Boolean

showTraderMark

Default Value: 0

Type: Boolean

useOverbought



useOversold *Default Value: -1*
Type: Boolean

Default Value: -1
Type: Boolean

Parabolic Signal

Function Name: para_sig

Tags: SAR

Category: Trend

The Parabolic Stop and Reversal is based on the relationship between a market's price and time, and plots a series of trailing stops. The Parabolic Stop and Reversal indicator is used to determine when to stop and reverse your position (SAR) in a market utilizing time/price-based stops. Once a Parabolic SAR is reached, the current position is exited and a new position in the opposite direction is taken. This indicator is primarily used in trending markets and is based on always having a position in the market. This indicator helps to determine stop points and when you might reverse a position and trade the opposite direction.

Link: <http://www.investopedia.com/terms/p/parabolicindicator.asp>

Parameters

Period	<i>Default Value: 14 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
fAccFactor	<i>Default Value: 0.02 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>
fAcceleration	<i>Default Value: 0.2 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	



Default Value: -1

Type: Boolean

Parabolic Stop and Reversal

Function Name: sar

Tags: SAR

Category: Trend

The Parabolic Stop and Reversal is based on the relationship between a market's price and time, and plots a series of trailing stops. The Parabolic Stop and Reversal indicator is used to determine when to stop and reverse your position (SAR) in a market utilizing time/price-based stops. Once a Parabolic SAR is reached, the current position is exited and a new position in the opposite direction is taken. This indicator is primarily used in trending markets and is based on always having a position in the market. This indicator helps to determine stop points and when you might reverse a position and trade the opposite direction.

Link: <http://www.investopedia.com/terms/p/parabolicindicator.asp>

Parameters

accFactor

Default Value: 0.02 | Minimum: 0.0001 | Maximum: 1

Type: Numeric

acceleration

Default Value: 0.2 | Minimum: 0.0002 | Maximum: 1

Type: Numeric

Pct Trail Stop

Function Name: pct_trail_stp

Tags: None

Category: Other

A Trailing Stop means is a stop-loss order set at a percentage level below the market price - for a long position. The trailing stop price is adjusted as the price fluctuates. The trailing stop order can be placed as a trailing stop limit order, or a trailing stop market order. Also known as a Trailing Stop Order. This is such a useful tool, yet many fail to use it. Using a trailing stop allows you to let profits run while cutting losses at the same time.

Link: <http://www.investopedia.com/terms/t/trailingstop.asp>

Parameters

InitialMonth

Default Value: 1 | Minimum: 1 | Maximum: 12

Type: Numeric



InitialDay

Default Value: 1 | Minimum: 1 | Maximum: 30
Type: Numeric

InitialYear

Default Value: 2009 | Minimum: 1900 | Maximum: 2020
Type: Numeric

FirstTrade

Default Value: 1 | Minimum: 0 | Maximum: 1
Type: Numeric

Percent

Default Value: 12 | Minimum: 0 | Maximum: 100
Type: Numeric

PDI To MDI

Function Name: `pdi_to_mdi`

Tags: None

Category: Trend

This study marks a bar when Directional Movement Plus is greater/less than Directional Movement Minus.

Parameters

Period

Default Value: 10 | Minimum: 2 | Maximum: 9999
Type: Numeric

ShowEachOccurrence

Default Value: 0
Type: Boolean

UsePDIGreaterMDI

Default Value: -1
Type: Boolean

UsePDILessMDI

Default Value: -1
Type: Boolean

ShowTraderBar

Default Value: -1
Type: Boolean

ShowTraderMark

Default Value: 0
Type: Boolean



Percent Change

Function Name: `pct_change`

Tags: None

Category: Other

The Percent Change indicator calculates and plots the net change, expressed as a percentage, between a bar's Close price, and that Close price the number of bars ago specified in the parameter Period. The default settings plot the percent change for the Close of each bar compared to the bar before it. This indicator is a quick and easy method of viewing price swings on a bar-by-bar basis illustrating price volatility.

Parameters

period

Default Value: 1 | Minimum: 1 | Maximum: 9999

Type: Numeric

Percentage Chng1

Function Name: `pcnt`

Tags: None

Category: Other

The Pcnt Chng 1 Data-Cum indicator calculates and plots the cumulative net change, expressed as a percentage, between each bar's Close and the previous bar's Close. Moving from left to right across the chart, the indicator calculates the percent change of each bar's Close as compared to the bar before it. This is then added to the running total of these percent changes and the running total is plotted on the chart. Because Pcnt Chng 1 Data-Cum begins accumulating values from the left of the chart, the numeric value of Pcnt Chng 1 Data-Cum will depend on the data available in the chart.

PercentR Signal

Function Name: `pctr_sig`

Tags: None

Category: Other

This is a consolidated study of the former PercentR Bullish and PercentR Bearish Tarder Bars/Marks. Bullish: This study paints the bar if Percent Retracement value moves from below the OverSold level to above the Trigger level, but below the OverBought level, while the Simple Moving Average of Close price rises. Bearish: This study paints the bar if Percent Retracement value moves from above the OverBought level to below the Trigger level, but above the OverSold level, while the Simple Moving Average of Close price falls.

Parameters

Period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

OverBought



OverSold	<i>Default Value: -20 Minimum: -100 Maximum: 0</i> <i>Type: Numeric</i>
Trigger	<i>Default Value: -80 Minimum: -100 Maximum: 0</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Performance

Function Name: perf

Tags: None

Category: Other

The Performance indicator displays the percentage that the instrument has increased since the first displayed period in the chart.

Piercing Pattern

Function Name: piercing

Tags: None

Category: Candlestick

A technical trading signal that is marked by a closing down day with a good-sized trading range, followed by a trading gap (drop) lower the following day that covers at least half of the upward length of the previous day's real body (the range between the opening and closing prices), and then closes up for the day. A piercing pattern often signals the end of a small to moderate downward trend. A piercing pattern can serve as an indicator that it is time to either buy a stock or close out short positions because the stock may be trending upward soon. It should not, however, be used as a stand-alone indicator, but should be compared against other bullish and bearish indicators.



Link: <http://www.investopedia.com/terms/piercing-pattern.asp>

Parameters

Period	<i>Default Value: 5 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>

Pivot Breakout Retracement

Function Name: [pivot_br](#)

Tags: [Breakout](#)

Category: [Other](#)

A high pivot bar (or a swing high) is a bar that is preceded and followed by lower highs. The Pivot Breakout study marks a bar if a new high pivot (swing high) is confirmed, a number of bars ago. A low pivot bar (or a swing low) is a bar that is preceded and followed by higher lows. The Pivot Retracement study marks a bar if a new low pivot (swing low) is confirmed, a number of bars ago.

Link: <http://www.investopedia.com/terms/o/oversold.asp>

Parameters

Period	<i>Default Value: 4 Minimum: 1 Maximum: 50</i> <i>Type: Numeric</i>
Occur	<i>Default Value: 1 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
UseBreakOut	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseRetr	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>



ShowTraderBar

Default Value: 0

Type: Boolean

Pivot Points Levels

Function Name: `pivot_lvls`

Tags: None

Category: Price

A technical indicator derived by calculating the numerical average of a particular stock's high, low and closing prices. The pivot point is used as a predictive indicator. If the following day's market price falls below the pivot point, it may be used as a new resistance level. Conversely, if the market price rises above the pivot point, it may act as the new support level.

Link: <http://www.investopedia.com/terms/p/pivotpoint.asp>

Parameters

Levels

Default Value: 3 | Minimum: 0 | Maximum: 3

Type: Numeric

ShowMLevels

Default Value: -1

Type: Boolean

Polarized Fractal Efficiency

Function Name: `pfe`

Tags: None

Category: Trend

The Polarized Fractal Efficiency indicator (PFE) was developed in 1994 by Hans Hannula. This indicator was invented to determine price efficiency over a period of time, and is fluctuating between -100 and +100.

A positive PFE value mean that the trend is up and a negative PFE value mean that the trend is down. The further the PFE value is away from zero, the stronger and more efficient the given trend is. If the PFE value is fluctuating around 0, it means that there is a balance between the supply and the demand.

Author: Hans Hannula

Parameters

period

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric



scalefactor

Default Value: 100 | Minimum: 1 | Maximum: 9999
Type: Numeric

smoothing

Default Value: 5 | Minimum: 2 | Maximum: 9999
Type: Numeric

higherZone

Default Value: 60 | Minimum: 0 | Maximum: 9999
Type: Numeric

lowerZone

Default Value: -60 | Minimum: -9999 | Maximum: 0
Type: Numeric

Positive Volume Index

Function Name: pvi

Tags: None

Category: Volume

The Positive Volume Index (PVI) concentrates on the market in times of increasing trade volumes. Like the Negative Volume Index, it is a cumulative indicator. It is only calculated when the volume increases compared to the previous day; otherwise, it stays the same.

Link: <http://www.investopedia.com/terms/p/pvi.asp>

Previous Day OHLC

Function Name: prevOHLC

Tags: None

Category: Price

This indicator plots the open, high, low and close of the previous day on intraday charts.

Parameter DayBreakGMTHour lets the user define a custom daybreak time expressed in GMT.

Parameters

DayBreakGMTHour

Expressed in GMT
Default Value: 0 | Minimum: 0 | Maximum: 23
Type: Numeric

ShowOCArea

Default Value: -1
Type: Boolean



ShowOpen

Default Value: -1

Type: Boolean

ShowHigh

Default Value: -1

Type: Boolean

ShowLow

Default Value: -1

Type: Boolean

ShowClose

Default Value: -1

Type: Boolean

Price And Volume Trend

Function Name: [pvt](#)

Tags: [None](#)

Category: [Volume](#)

The Price and Volume Trend (PVT) is similar to On Balance Volume (OBV) in that it is a cumulative total of volume that is adjusted depending on changes in closing prices. But where OBV adds all volume on days when prices close higher and subtracts all volume on days when prices close lower, the PVT adds/subtracts only a portion of the daily volume. The amount of volume added to the PVT is determined by the amount that prices rose or fell relative to the previous day's Close. Many investors feel that the PVT more accurately illustrates the flow of money into and out of a security than does OBV. This is because OBV adds the same amount of volume to the indicator regardless of whether the security closes up a fraction of a point or doubles in price. Whereas the PVT adds only a small portion of volume to the indicator when the price changes by a small percentage and adds a large portion of volume to the indicator when the price changes by a large percentage.

Price Cross EMA

Function Name: [price_cross_ema](#)

Tags: [Crossover](#), [Exponential Moving Average](#)

Category: [Trend](#)

The latest bar crossover or below of exponential moving average with different period then gives a buy/sell signal

Parameters:

Period: Period for EMA expressed in number of bars.

ShowEMA: EMA display control flag.

Note:

The last bar might trigger a buy/sell signal intermittently when the indicator is calculated on each new tick. This can be avoided if the "calculate on each new bar" option is selected, that way the indicator will not be calculated on the last bar.



Parameters

Period

Default Value: **10** | Minimum: **2** | Maximum: **9999**

Type: Numeric

ShowEMA

Default Value: **-1**

Type: Boolean

Price Oscillator

Function Name: price_osc

Tags: Oscillator

Category: Trend

The Price Oscillator calculates and plots on the chart difference between LongPeriod and ShortPeriod simple moving averages of the Close price, shown as percentages.

The Price Oscillator illustrates the cyclical and often profitable signals generated by these one or two moving average systems. It is a trend following indicator and does an outstanding job of keeping you on the right side of the market during trending periods. However, during less decisive periods, the Price Oscillator produces small losses.

Moving average analysis typically generates buy signals when a short-term moving average rises above a longer-term moving average. Conversely, sell signals are generated when a shorter-term moving average falls below a longer-term moving average.

Parameters

shortPeriod

Default Value: **10** | Minimum: **1** | Maximum: **9999**

Type: Numeric

longPeriod

Default Value: **30** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Price Rate of Change

Function Name: roc

Tags: Rate of Change, ROC

Category: Momentum

The Price Rate of Change indicator calculates the difference between the current price and the price x-periods ago as a percentage. Crossing above the zero line is considered to be positive indication and to some a buy signal. Crossing below the zero line is considered to be negative and to some a sell signal. Measuring current prices versus earlier prices sheds light on the pace of a trend and possible trend reversals. It may also be useful in identifying overbought and oversold conditions when the Price Rate of Change becomes extremely strong or weak.

The Price Rate of Change indicator is one of the easiest and most effective indicators you'll find. The Price Rate of Change indicator lends itself to overbought and oversold interpretation. The problem is that there are no hard-and-fast rules about where the lines should be drawn (even more reason to make them variables), since the magnitude of the



oscillations will vary according to the volatility of the underlying security and the time span being considered. For this reason overbought and oversold lines are constructed on the basis of judgment.

Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

Price Zone Oscillator

Function Name: PriceZoneOscillator

Tags: Oscillator

Category: Price

The formula for PZO depends on only one condition: If today's closing price is higher than yesterday's closing price, then the closing price will have a positive value (bullish); otherwise it will have a negative value (bearish). Like VZO, PZO has overbought and oversold levels. It is useful for identifying at which zone (bullish or bearish) price is positioned. PZO is useful in uptrends, downtrends, or sideways market conditions.

Source: Stocks & Commodities, June 2011: "Entering The Price Zone"

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

ShowPZO

Default Value: -1

Type: Boolean

ShowLevels

Default Value: -1

Type: Boolean

Projection Bands

Function Name: projection_bands

Tags: Bands, Oscillator

Category: Trend, Volatility

Projection Bands are plotted by finding the minimum and maximum prices over the specified number of days and projecting these forward (parallel to a linear regression line). The resulting plot consists of two bands representing the minimum and maximum price boundaries. Prices will always be contained by the bands

Projections Bands are used much like other types of bands--they help gauge the ebb and flow of optimism and pessimism. When prices are at or near the upper band, extreme optimism is indicated--look for prices to move down



to more rational levels. Likewise, when prices are at or near the lower band, extreme pessimism is indicated--look for prices to move up to more rational levels.

Parameters

Period

Default Value: 14 | Minimum: 2 | Maximum: 999

Type: Numeric

Projection Oscillator

Function Name: [projection_oscillator](#)

Tags: [Bands](#), [Oscillator](#)

Category: [Momentum](#)

The Projection Oscillator is based on the Projection Bands indicator. The Oscillator calculates where the close lies within the band as a percentage. Therefore, an Oscillator value of 50 would mean that the close is in the middle of the band. A value of 100 would mean that the close is equal to the top band, and zero means that it is equal to the low band. The calculation is similar to a Stochastic which uses the raw highest high and lowest low value, whereas the Projection Oscillator adds the regression line component, making it more sensitive.

The Projection Oscillator can be interpreted several ways. Look for divergence with price to indicate a trend reversal. Extreme values (over 80 or under 20) indicate overbought/oversold levels. A moving average of the oscillator can be used as a trigger line. A buy/sell signal is generated when the Projection Oscillator to cross above/below the trigger line. The signal is stronger if it happens above 70 or below 30.

Parameters:

Period: Number of bars used in calculation.

SmoothingPeriod: Period for EMA smoothing (the trigger line).

Overbought, Oversold: Overbought and oversold levels.

ShowEMASmooth, ShowTraderMarks: Display control flags.

ShowOnlyStrongTradeMarks: If true, then buy and sell signals will be displayed only if they occur in the oversold and overbought zone respectively.

Parameters

Period

Default Value: 14 | Minimum: 2 | Maximum: 999

Type: Numeric

SmoothingPeriod

Default Value: 3 | Minimum: 2 | Maximum: 999

Type: Numeric

Overbought

Default Value: 80 | Minimum: 0 | Maximum: 100

Type: Numeric

Oversold

Default Value: 20 | Minimum: 0 | Maximum: 100



ShowEMASmooth	Type: Numeric
	Default Value: 0
ShowTraderMarks	Type: Boolean
	Default Value: 0
ShowOnlyStrongTradeMarks	Type: Boolean
	Default Value: -1

Psychological Line

Function Name: psychological

Tags: None

Category: Volatility

A psychological line is based on the number of time intervals the market was up during the preceding period. This information is displayed as a percentage.

Parameters

period	Default Value: 25 Minimum: 1 Maximum: 9999
	Type: Numeric

Put-Call Ratio Indicator

Function Name: pcratio

Tags: Put/Call

Category: Cycles

Author: Silvain Vervoort

Source: "Constructing The Put/Call Ratio Indicator", Nov. 2011., Stocks & Commodities magazine

Parameters

FastTemaPeriod	Default Value: 5 Minimum: 1 Maximum: 100
	Type: Numeric
FastRainbow	Default Value: 2 Minimum: 1 Maximum: 10
	Type: Numeric



SlowRainbow

Default Value: 5 | Minimum: 1 | Maximum: 10
Type: Numeric

FastRsiPeriod

Default Value: 5 | Minimum: 2 | Maximum: 100
Type: Numeric

FastWMAPeriod

Default Value: 5 | Minimum: 1 | Maximum: 100
Type: Numeric

SlowWMAPeriod

Default Value: 1 | Minimum: 1 | Maximum: 100
Type: Numeric

InvFTRsiPer

Default Value: 8 | Minimum: 2 | Maximum: 100
Type: Numeric

Qstick EMA

Function Name: `qstick_ema`

Tags: Moving Average

Category: Candlestick, Trend

A technical indicator developed by Tushar Chande to numerically identify trends in candlestick charting. It is calculated by taking an 'n' period moving average of the difference between the open and closing prices. A Qstick value greater than zero means that the majority of the last 'n' days have been up, indicating that buying pressure has been increasing. Transaction signals come from when the Qstick indicator crosses through the zero line. Crossing above zero is used as the entry signal because it is indicating that buying pressure is increasing, while sell signals come from the indicator crossing down through zero. In addition, an 'n' period moving average of the Qstick values can be drawn to act as a signal line. Transaction signals are then generated when the Qstick value crosses through the trigger line.

Read more: <http://www.investopedia.com/terms/q/qstick.asp#ixzz1hEPaVa00>

Parameters

Period

Default Value: 14 | Minimum: 2 | Maximum: 999
Type: Numeric

ShowTraderMark

Default Value: 0
Type: Boolean

ShowQstickEMA

Default Value: -1
Type: Boolean



Qstick SMA

Function Name: `qstick_sma`

Tags: Moving Average

Category: Candlestick, Trend

A technical indicator developed by Tushar Chande to numerically identify trends in candlestick charting. It is calculated by taking an 'n' period moving average of the difference between the open and closing prices. A Qstick value greater than zero means that the majority of the last 'n' days have been up, indicating that buying pressure has been increasing. Transaction signals come from when the Qstick indicator crosses through the zero line. Crossing above zero is used as the entry signal because it is indicating that buying pressure is increasing, while sell signals come from the indicator crossing down through zero. In addition, an 'n' period moving average of the Qstick values can be drawn to act as a signal line. Transaction signals are then generated when the Qstick value crosses through the trigger line.

Read more: <http://www.investopedia.com/terms/q/qstick.asp#ixzz1hEPaVa00>

Parameters

Period

Default Value: 14 | Minimum: 0 | Maximum: 999

Type: Numeric

ShowTraderMark

Default Value: 0

Type: Boolean

ShowQstickSMA

Default Value: -1

Type: Boolean

R Squared

Function Name: `r_sqr`

Tags: None

Category: Trend

The R-Squared indicator is a statistical measure that represents the percentage of a fund's or security's movements that are explained by movements in a benchmark index. For fixed-income securities the benchmark is the T-bill, and for equities the benchmark is the S&P 500.

R-Squared values range from 0 to 100. An R-Squared of 100 means that all movements of a security are completely explained by movements in the index.

A higher R-Squared value will indicate a more useful beta figure. For example, if a fund has an R-Squared value of close to 100, yet has a beta below 1, it is most likely offering higher risk-adjusted returns. A low R-Squared value means you should ignore the beta.

Link: <http://www.investopedia.com/terms/r/r-squared.asp>

Bases

Source1

Choose any symbol as the first base. By default, the first symbol that is



Source2

shown on the chart is used.

Choose any symbol as the second base. By default, the second symbol that is shown on the chart is used.

If only one symbol is visible on the chart, you can choose a second symbol with Symbol Search by clicking on **Other**.

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

Rainbow Indicator

Function Name: rainbow

Tags: ATR, SMA, MAV, Moving Averages

Category: Trend, Volatility

The Rainbow Indicator plots 21 Simple Moving Averages with hardcoded values.

Rapid Adaptive Variance

Function Name: rapid_adap_var

Tags: None

Category: Trend

The Rapid Adaptive Variance indicator measures the strength of a prevailing trend, but does not, however, imply the trend direction. Rising RAVI indicates the beginning of a trend or an increase in the trend's strength, while a falling RAVI indicates the end of a trend or a deterioration of the trend's strength.

The RAVI indicator attempts to improve on the Average Directional Index (ADX) and is claimed by the author to respond faster and more predictably to price fluctuations than the ADX.

Author: Tushar Chande

Parameters

periodShort

Default Value: 7 | Minimum: 1 | Maximum: 9999

Type: Numeric

periodLong

Default Value: 65 | Minimum: 1 | Maximum: 9999

Type: Numeric



Reversing MACD

Function Name: `reversing_macd`

Tags: [Moving Average Convergence Divergence](#), [Moving Averages](#)

Category: [Trend](#)

- MACDzero line shows the value that price needs to reach for MACD oscillator to get zero value. - MACDeq line shows the price value needed for MACD to retain it's current value.

Source: Stocks & Commodities, January 2012: "Reversing MACD" by Johnny Dough

Parameters

EMAFast

Default Value: 12 | Minimum: 3 | Maximum: 100

Type: Numeric

EMASlow

Default Value: 26 | Minimum: 3 | Maximum: 100

Type: Numeric

Trigger

Default Value: 9 | Minimum: 3 | Maximum: 100

Type: Numeric

Rising Three

Function Name: `rising_three`

Tags: [Bearish Falling Three](#)

Category: [Candlestick](#), [Pattern](#)

A bullish candlestick pattern that is used to predict the continuation of the current uptrend. This pattern is formed when the candlesticks meet the following criteria:

1. An uptrend is in progress.
2. A candle with long white body is formed.
3. Followed by a series of 2 to 5 descending small-bodied candlesticks that trade within the range of the first candlestick.
4. The final day opens up into the body of the last pull-back day and proceeds to close above the close of the first big white candle day.

Parameters:

AvgBodyHeightPeriod: Number of bars that are averaged to form a baseline for "long body" and "small body" criteria.

LongBodyRelativeThresh: Factor that multiplies the baseline to form the threshold for "long body" criterion.

SmallBodyRelativeThresh: Factor that multiplies the baseline to form the threshold for "small body" criterion.

MinNoOfSmallCandles: Minimum number of small descending candles.

MaxNoOfSmallCandles: Maximum number of small descending candles.



SmallCandlesMustBeBlack: If true, then small candles are tested if their open is higher than close.

SmallCandlesMustBeDescending: If true, then each small candle (except the first one) is tested whether its midline is below the midline of the previous candle.

UseClassicInsideCondition: If true, then small candles are tested if their highs are lower than first candle's high and if their lows are higher than first candle's low. If false, they are only tested if lows and closes are higher than the first candle's low and open (respectively).

UseUptrendCondition: If true, then the indicator checks for an uptrend prior to appearance of the first long white candle.

ShowTraderBar, ShowTraderMark: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 10

Type: Numeric

SmallBodyRelativeThresh

Default Value: 0.5 | Minimum: 0 | Maximum: 1

Type: Numeric

MinNoOfSmallCandles

Default Value: 2 | Minimum: 2 | Maximum: 5

Type: Numeric

MaxNoOfSmallCandles

Default Value: 5 | Minimum: 2 | Maximum: 5

Type: Numeric

SmallCandlesMustBeBlack

Default Value: 0

Type: Boolean

SmallCandlesMustBeDescending

Default Value: -1

Type: Boolean

UseClassicInsideCondition

Default Value: -1

Type: Boolean

UseUptrendCondition

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean



RSI

Function Name: rsi

Tags: Relative Strength Index

Category: Momentum

The Relative Strength Index (RSI) indicator calculates a value based on the cumulative strength and weakness of price (Close price), over the period specified by the Period parameter. For that number of bars, RSI accumulates the points gained on bars with higher Closes and the points lost on bars with lower Closes. These two sums are indexed, with the index plotted on the chart.

The Relative Strength Index is an oscillator with values that range from 0 to 100. The RSI plots upper and lower boundaries to determine overbought and oversold market conditions. The direction of RSI should confirm price movement. For example, a rising RSI confirms rising prices.

The RSI can also help identify turning points when there are non-confirmations or divergences. For example, a new high in price without a new high in RSI may indicate a false breakout. RSI is also used to identify overbought and oversold conditions when the RSI value reaches extreme highs or lows. This indicator automatically changes the color of the RSI plot when it exceeds either of the levels specified in the inputs BuyZone and SellZone. Horizontal reference lines are also plotted at these levels as visual aids.

Link: <http://www.investopedia.com/terms/r/rsi.asp>

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 70 | Minimum: 0 | Maximum: 100

Type: Numeric

lowerLevel

Default Value: 30 | Minimum: 0 | Maximum: 100

Type: Numeric

n

Default Value: 1 | Minimum: 1 | Maximum: 1000

Type: Numeric

RSI14Days

Function Name: rsi_signal

Tags: Relative Strength Index

Category: Momentum

RSI - A technical momentum indicator that compares the magnitude of recent gains to recent losses in an attempt to determine overbought and oversold conditions of an asset.



- Previous RSI value more than 70 and today RSI value less than 70 then displays "sell" signal
- Previous RSI value less than 30 and today RSI value more than 30 then displays "buy" signal

Parameters

Period	<i>Default Value: 14 Minimum: 2 Maximum: 1000</i> <i>Type: Numeric</i>
OverBought	<i>Default Value: 70 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OverSold	<i>Default Value: 30 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowRSI	<i>Default Value: -1</i> <i>Type: Boolean</i>

RSI Bands

Function Name: [rsi_bands](#)

Tags: [Bands](#)

Category: [Momentum](#)

Author: S&C Apr 2008: "RSI Bands"

Parameters

RSILength	<i>Default Value: 14 Minimum: 2 Maximum: 100</i> <i>Type: Numeric</i>
OverSold	<i>Default Value: 30 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OverBought	<i>Default Value: 70 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
Dampening	<i>Default Value: 0 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>



RSI-MACD-V Colored

Function Name: `rsi_macd_v_colored`

Tags: `macd`, `modified stochastic`, `rsi`

Category: `Momentum`, `Trend`

Signal conditions:

- If $(RSI14 < avgRSI)$ and $(MACD < TRIGG)$ and $(Last < Move2)$ and $(Volume > avgVol)$ and $(fullKmma < fullDmma)$ then display the pink arrow marker above the price chart.
- If $(RSI14 > avgRSI)$ and $(MACD > TRIGG)$ and $(Last > Move1)$ and $(Volume > avgVol)$ and $(fullKmma > fullDmma)$ then display the cyan arrow marker below the price chart.
- If $(previous\ RSI14 > previous\ avgRSI)$ and $(RSI14 < avgRSI)$ and $(MACD < TRIGG)$ and $(Last < Move2)$ and $(Volume > avgVol)$ and $(fullKmma < fullDmma)$ then display the pink arrow marker above the price chart and label it "RSI".
- If $(previous\ MACD > previous\ TRIGG)$ and $(MACD < TRIGG)$ and $(RSI14 < avgRSI)$ and $(Last < Move2)$ and $(Volume > avgVol)$ and $(fullKmma < fullDmma)$ then display the pink arrow marker above the price chart and label it "MACD".
- If $(previous\ RSI14 < previous\ avgRSI)$ and $(RSI14 > avgRSI)$ and $(MACD > TRIGG)$ and $(Last > Move1)$ and $(Volume > avgVol)$ and $(fullKmma > fullDmma)$ then display the cyan arrow marker below the price chart as cyan color and label it "RSI".
- If $(previous\ MACD < previous\ TRIGG)$ and $(MACD > TRIGG)$ and $(RSI14 > avgRSI)$ and $(Last > Move1)$ and $(Volume > avgVol)$ and $(fullKmma > fullDmma)$ then display the cyan arrow marker below the price chart and label it "MACD".

Parameters

RSIperiod

Default Value: **14** | Minimum: **3** | Maximum: **100**

Type: *Numeric*

RSI_EMAsperiod

Default Value: **20** | Minimum: **3** | Maximum: **100**

Type: *Numeric*

EMAsperiod1

Default Value: **10** | Minimum: **3** | Maximum: **100**

Type: *Numeric*

EMAsperiod2

Default Value: **5** | Minimum: **3** | Maximum: **100**

Type: *Numeric*

LBperiod

Default Value: **14** | Minimum: **1** | Maximum: **100**

Type: *Numeric*

Kperiod

Default Value: **3** | Minimum: **3** | Maximum: **100**

Type: *Numeric*

Dperiod



macd_mov1	<i>Default Value: 3 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>
macd_mov2	<i>Default Value: 12 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>
macd_trigger	<i>Default Value: 26 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>
emaVol_period	<i>Default Value: 9 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>
	<i>Default Value: 5 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>

RSI Oscillator Signal

Function Name: [rsi_osc_sig](#)

Tags: [Oscillator](#), [RSI](#)

Category: [Momentum](#)

The Relative Strength Index (RSI) indicator calculates a value based on the cumulative strength and weakness of price (Close price), over the period specified by the Period parameter. For that number of bars, RSI accumulates the points gained on bars with higher Closes and the points lost on bars with lower Closes. These two sums are indexed, with the index plotted on the chart. The Relative Strength Index is an oscillator with values that range from 0 to 100. The RSI plots upper and lower boundaries to determine overbought and oversold market conditions. The direction of RSI should confirm price movement. For example, a rising RSI confirms rising prices. The RSI can also help identify turning points when there are non-confirmations or divergences. For example, a new high in price without a new high in RSI may indicate a false breakout. RSI is also used to identify overbought and oversold conditions when the RSI value reaches extreme highs or lows. This indicator automatically changes the color of the RSI plot when it exceeds either of the levels specified in the inputs BuyZone and SellZone. Horizontal reference lines are also plotted at these levels as visual aids.

Link: <http://www.investopedia.com/terms/r/rsi.asp>

Parameters

Period	<i>Default Value: 14 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
OverBought	<i>Default Value: 80 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OverSold	<i>Default Value: 20 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderBar	



ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

S Close Between XY

Function Name: [c_betw_xy](#)

Tags: [Relation](#)

Category: [Price](#)

The S Close Between XY study marks a bar if the Close is between the two values you enter.

Parameters

HigherPrice	<i>Default Value: 15 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>
LowerPrice	<i>Default Value: 5 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>

S Close Greater X

Function Name: [c_gr_x](#)

Tags: [Relation](#)

Category: [Price](#)



The S Close Greater X study marks a bar if the Close is above the value you enter.

Parameters

Price

Default Value: 10 | Minimum: 0 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

S Close Less X

Function Name: [c_less_x](#)

Tags: [Relation](#)

Category: [Price](#)

The S Close Less X study marks a bar if the Close is below the value you enter.

Parameters

Price

Default Value: 10 | Minimum: 0 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

S Vol Percent Decrease

Function Name: [vol_pct_dec](#)

Tags: [Relation](#)

Category: [Volume](#)

The S Vol Percent Decrease study marks a bar if the volume is down from the previous bar within the defined percentage amount.



Parameters

Percent

Default Value: 50 | Minimum: 1 | Maximum: 100

Type: Numeric

S Vol Percent Increase

Function Name: vol_pct_inc

Tags: Relation

Category: Volume

The S Vol Percent Increase study marks a bar if the volume is up from the previous bar within the defined percentage amount.

Parameters

Percent

Default Value: 50 | Minimum: 1 | Maximum: 100

Type: Numeric

Sanku

Function Name: sanku

Tags: None

Category: Candlestick

The Japanese word for a candlestick pattern that consists of three individual gaps located within a well-defined trend. After the appearance of the third gap, the pattern is used to suggest an impending reversal in the direction of the current trend. This pattern is used by traders to predict situations of exhaustion and change in a trend. Ultimately, the current trend is said to be reversed when the price of the asset fills the third gap. Technical traders should not rely solely on the three gaps pattern to predict a reversal; rather, they should combine this technique with other technical indicators.

Link: <http://www.investopedia.com/terms/s/sanku.asp>

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark



Default Value: -1

Type: Boolean

Schaff Cycle

Function Name: `schaff_cycle_ind`

Tags: Oscillator

Category: Momentum

The Schaff Cycle Indicator is a modified MACD line run through a modified stochastic algorithm smoothed with Wilders' smoothing to calculate the final STC indicator.

It helps to identify:

1. Direction a Trend Cycle is moving.
2. Tops and Bottoms within a Trend Cycle.

When the Schaff Trend Cycle Indicator is declining, the trend cycle is falling and prices tend to stabilize or follow the cycle down. When the STC is rising, the trend cycle is rising and prices tend to stabilize or follow the cycle higher.

Author: Doug Schaff

Source: <http://www.cmsfx.com/en/trading-software/vt-trader-features/many-technical-indicators/schaff-trend-cycle/>

Parameters

MAShort

Default Value: 23 | Minimum: 2 | Maximum: 99999

Type: Numeric

MALong

Default Value: 50 | Minimum: 2 | Maximum: 99999

Type: Numeric

Cycle

Default Value: 10 | Minimum: 2 | Maximum: 99999

Type: Numeric

Schaff Cycle Signal

Function Name: `schaff_cycle_sig`

Tags: Oscillator

Category: Momentum

The Schaff Cycle Indicator is a modified MACD line run through a modified stochastic algorithm smoothed with Wilders' smoothing to calculate the final STC indicator.

It helps to identify:

1. Direction a Trend Cycle is moving.
2. Tops and Bottoms within a Trend Cycle.



When the Schaff Trend Cycle Indicator is declining, the trend cycle is falling and prices tend to stabilize or follow the cycle down. When the STC is rising, the trend cycle is rising and prices tend to stabilize or follow the cycle higher.

Author: Doug Schaff

Source: <http://www.cmsfx.com/en/trading-software/vt-trader-features/many-technical-indicators/schaff-trend-cycle/>

Parameters

MAShort

Default Value: 23 | Minimum: 2 | Maximum: 99999
Type: Numeric

MALong

Default Value: 50 | Minimum: 2 | Maximum: 99999
Type: Numeric

Cycle

Default Value: 10 | Minimum: 2 | Maximum: 99999
Type: Numeric

ShowTraderBar

Default Value: 0
Type: Boolean

ShowTraderMark

Default Value: -1
Type: Boolean

ShowEachOccurrence

Default Value: 0
Type: Boolean

UseBullishSignals

Default Value: -1
Type: Boolean

UseBearishSignals

Default Value: -1
Type: Boolean

Sector Rotation Model

Function Name: [srmind](#)

Tags: [ROC](#), [SRM](#)

Category: [Cycles](#), [Market Breadth](#)

"A market sector is a group of companies conducting similar types of business, and a sector rotation model (SRM) is a paradigm that describes which sectors are expected to be the most active during various periods of the economic cycle. Since business activity for the companies translates to more revenue, an SRM has implications in the profitability of sectors. Thus, an SRM could be used to find the topperforming sectors in the stock market. While there is no common acceptance of an SRM, all variations have minor differences so they come under the same name: the sector rotation model."



Author: Giorgos E. Siligardos

Source: Stocks & Commodities, August 2012: "Stocks and Commodities"

Parameters

Exchange

Type:

RocPeriod

Default Value: **75** | Minimum: **1** | Maximum: **200**

Type: Numeric

Semi-Cup Formation

Function Name: SemiCupFormation

Tags: None

Category: Pattern

This algorithm identifies semi-cup formations (half of a completed cup, identified when the bottom of the cup is forming).

Note that an identified semi-cup may always fail to produce a completed cup. It should not be used as a mechanical buy/sell system or anything similar.

Parameters:

ShowGrid: Whether or not the grid will be displayed.

B0toB5ratio: Minimum ratio between closing price at B0 and B5. Recommended value: between 1.5 and 5

DX1min: Minimum value for directional index at B2. Recommended: 25

DX2max: Maximum value for directional index at B5. Recommended: 25

MinPeriod: Minimum number of bars in the pattern.

MaxPeriod: How many bars far back will the program look for a semicup formation

Source: Stocks & Commodities, April 2011: "Identifying Cup Formations Early"

Parameters

ShowGrid

Default Value: **-1**

Type: Boolean

ShowReferenceLine

Default Value: **-1**

Type: Boolean

B0toB5ratio

Minimum ratio between closing price at B0 and B5. Recommended value: between 1.5 and 5



	<i>Default Value: 1.5 Minimum: 1 Maximum: 99999</i> <i>Type: Numeric</i>
DX1min	Minimum value for directional index at B2. Recommended: 25 <i>Default Value: 25 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
DX2max	Maximum value for directional index at B5. Recommended: 25 <i>Default Value: 25 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
MinPeriod	Minimum number of bars in the pattern. <i>Default Value: 20 Minimum: 20 Maximum: 99999</i> <i>Type: Numeric</i>
MaxPeriod	How many bars far back will the program look for a semicup formation <i>Default Value: 1000 Minimum: 100 Maximum: 99999</i> <i>Type: Numeric</i>

Sentiment Zone Oscillator

Function Name: `szo`

Tags: None

Category: Price

"The SZO was devised on the belief that after several waves of rising prices, investors begin to get bullish on the stock with increasing confidence since the price has been rising for some time. The SZO measures that bullishness/bearishness and marks overbought/oversold levels."

Source: Walid Khalil - "Sentiment Zone Oscillator", Stocks & Commodities magazine, May 2012.

Parameters

Period	<i>Default Value: 14 Minimum: 3 Maximum: 100</i> <i>Type: Numeric</i>
Overbought	<i>Default Value: 7 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
Oversold	<i>Default Value: -7 Minimum: -100 Maximum: 0</i> <i>Type: Numeric</i>
ShowTradeMarks	<i>Default Value: -1</i> <i>Type: Boolean</i>



Sentiment Zone Oscillator Dynamic

Function Name: `szo_dynamic`

Tags: None

Category: None

"The SZO was devised on the belief that after several waves of rising prices, investors begin to get bullish on the stock with increasing confidence since the price has been rising for some time. The SZO measures that bullishness/bearishness and marks overbought/oversold levels."

Source: Walid Khalil - "Sentiment Zone Oscillator", Stocks & Commodities magazine, May 2012.

Parameters

Period

Default Value: **14** | Minimum: **3** | Maximum: **100**
Type: Numeric

LongPeriod

Default Value: **30** | Minimum: **3** | Maximum: **200**
Type: Numeric

Percent

Default Value: **95** | Minimum: **0** | Maximum: **100**
Type: Numeric

EMAPeriod

Default Value: **60** | Minimum: **3** | Maximum: **200**
Type: Numeric

OverboughtLevel

Default Value: **7** | Minimum: **0** | Maximum: **100**
Type: Numeric

ShowTradeMarks

Default Value: **-1**
Type: Boolean

Separating Lines

Function Name: `separating_lines`

Tags: None

Category: Candlestick, Pattern

The bullish separating lines are such that the first day is a black day and the next day is a white day. The key to the second day is that the issue has the same opening price as day one. The bearish separating lines pattern is the exact opposite of the bullish separating lines pattern

Recognition Criteria:

1. Market is characterized by an uptrend (downtrend).
2. We see a long black (white) candlestick in the first day.
3. Then we see that the second day has the same opening price as the first day, or extremely close to it.



4. The second day pattern is a White (Black) Opening Marubozu.

If all conditions are met, then Bullish (Bearish) Separating Lines are signaled.

Parameters:

AvgBodyHeightPeriod: Number of previous bars averaged to form a baseline body size.

LongBodyRelativeThresh: Baseline multiplier that produces the final threshold for minimum size of a long body.

RelativeCloseness: Maximum relative difference between first and second day open, expressed relative to first bar's body length.

UseTrendCondition: If false, then 1st recognition criterion is not checked.

LongSecondBar: If true, then second bar's body length is also compared with the long body threshold.

Link1: <http://www.candlesticker.com/Cs40.asp>

Link2: <http://www.candlesticker.com/Cs50.asp>

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 2 | Maximum: 999
Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 10
Type: Numeric

RelativeCloseness

Default Value: 0.01 | Minimum: 0 | Maximum: 0.200000000000000001
Type: Numeric

UseTrendCondition

Default Value: -1
Type: Boolean

LongSecondBar

Default Value: -1
Type: Boolean

Sharpe Ratio

Function Name: `sharpe_ratio`

Tags: None

Category: Other

A ratio developed by Nobel laureate William F. Sharpe to measure risk-adjusted performance. The Sharpe ratio is calculated by subtracting the risk-free rate (such as that of the 10-year U.S. Treasury bond in USA or

German government bills or Euribor rates in EU)

from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns. The Sharpe ratio formula is:

$$SR = E(R-R_f) / \sigma(R-R_f),$$



where: R: asset return,

Rf: return on a benchmark asset, such as the risk free rate of return,

E[R - Rf]: expected value of the excess of the asset return over the benchmark return and

s(R-Rf): standard deviation of the excess of the asset returns

Function usage: `sharpe_ratio(Period, RiskFreeReturn, BarsPerYear)` where: Period: number of bars to use in analysis. RiskFreeReturn: return on a benchmark asset, such as the risk free rate of return (such as that of the 10-year U.S. Treasury bond in USA or

German government bills or Euribor rates in EU). The value should be given in %, per annum. BarsPerYear: custom number of bars per year. Used only if UseCustomBarsPerYear is set to true. UseCustomBarsPerYear: if true, BarsPerYear parameter is used. Otherwise the value is automatically calculated: 12 for monthly, 52 for weekly, 250 for daily.

Author: William F. Sharpe

Links: <http://www.stanford.edu/~wfsarpe/art/sr/sr.htm>, http://en.wikipedia.org/wiki/Sharpe_ratio, <http://www.investopedia.com/terms/s/sharperatio.asp>

Parameters

Period	Number of bars to use in analysis <i>Default Value: 100 Minimum: 0 Maximum: 100000</i> <i>Type: Numeric</i>
RiskFreeReturn	in %, per annum <i>Default Value: 1.2509999999999999 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
BarsPerYear	Used only if UseCustomBarsPerYear set to true, otherwise automatically calculated <i>Default Value: 250 Minimum: 12 Maximum: 360000</i> <i>Type: Numeric</i>
UseCustomBarsPerYear	If true, BarsPerYear parameter is used. Otherwise the value is automatically calculated: 12 for monthly, 52 for weekly, 250 for daily. <i>Default Value: 0</i> <i>Type: Boolean</i>

Shooting Star

Function Name: `shooting_star`

Tags: None

Category: [Candlestick](#), [Pattern](#)

A type of candlestick formation that results when a security's price, at some point during the day, advances well above the opening price but closes lower than the opening price. In order for a candlestick to be considered a shooting star, the formation must be on an upward or bullish trend. Furthermore, the distance between the highest price for the day and the opening price must be more than twice as large as the shooting star's body. Finally, the distance between the lowest price for the day and the closing price must be very small or nonexistent.

Link: <http://www.investopedia.com/terms/s/shootingstar.asp>



Parameters

Period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
NBars	<i>Default Value: 1 Minimum: 0 Maximum: 2</i> <i>Type: Numeric</i>
UpperCoef	<i>Default Value: 0.8 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>
LowerCoef	<i>Default Value: 0.2 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>

Smoothed Rate of Change

Function Name: `roc_smooth`

Tags: EMA, ROC

Category: Momentum

Instead of the actual price, the calculation uses the exponential moving average, to which the rate of change principle is applied.

Source: "Trading for Living.", Alexander Elder

Link: http://www.finecharts.com/vzdelavani/6-indicators/357-smoothed_rate_of_change.htm

Parameters

EMAPeriod	<i>Default Value: 4 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
ROCperiod	<i>Default Value: 14 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>



Slow Stochastic Cross N Days Signal

Function Name: `slow_stochastic_cross_n_days_signal`

Tags: Stochastic

Category: Momentum

The slow stochastics is a momentum indicator, it indicates whether the market is moving to new highs, new lows, or is just meandering in the middle. It's also used as an overbought/oversold indicator.

- Previous Slow%K value more than previous Slow%D value and today Slow%K value less than today Slow%D value then displays "sell" signal

- Previous Slow%K value less than previous Slow%D value and today Slow%K value more than today Slow%D value then displays "buy" signal

Parameters:

LBPeriod: Look-back period. Number of bars to compare for highest and lowest.

SlowK_SMA_Period: Period for SMA smoothing applied on Fast %K to calculate the Slow %K.

SlowD_SMA_Period: Period for SMA smoothing applied on Slow %K to calculate the Slow %D.

ShowTraderMarks, ShowStochasticLines: Display flags.

Parameters

LBPeriod

Default Value: 14 | Minimum: 1 | Maximum: 1000

Type: Numeric

SlowK_SMA_Period

Default Value: 3 | Minimum: 1 | Maximum: 1000

Type: Numeric

SlowD_SMA_Period

Default Value: 3 | Minimum: 1 | Maximum: 1000

Type: Numeric

ShowTraderMarks

Default Value: -1

Type: Boolean

ShowStochasticLines

Default Value: -1

Type: Boolean

Spearman Indicator

Function Name: `spearman`

Tags: None

Category: Momentum



This indicator is a very old statistical tool that even to this day helps determine trend strength and turning points. The concept was originally proposed in 1904: the Spearman's rank correlation coefficient, also known as the Spearman indicator. It is a statistical measure for the strength of association between two variables and computes the degree of correlation between the ranks of the elements in two data groups of equal size. The Spearman indicator can be used to determine trend intensity and turning points. The author Dan Valcu believes that values above +80 warn about possible tops, while values below -80 point to approaching lows.

Source: Stocks & Commodities, February 2011: "The Spearman Indicator for Technical Analysis"

Parameters

Period

Default Value: 10 | Minimum: 2 | Maximum: 100

Type: Numeric

Spinning Top

Function Name: `spin_top`

Tags: None

Category: Candlestick

A type of candlestick formation where the real body is small despite a wide range of price movement throughout the trading day. This candle is often regarded as neutral and used to signal indecision about the future direction of the underlying asset. If a spinning top formation is found after a prolonged uptrend, it suggests that the bulls are losing interest in the stock and that a reversal may be in the cards. On the other hand, if this formation is found in an defined downtrend, it suggests that the sellers are losing conviction and that a bottom may be forming.

Link: <http://www.investopedia.com/terms/s/spinning-top.asp>

Parameters

ShowTraderBar

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

Spread Absolute

Function Name: `spread_abs`

Tags: None

Category: Spread



The Spread Absolute indicator compares the price of one contract with the price of another to obtain the spread between the two contracts. It is calculated as a difference between Close price of one contract and the Close price of another contract.

Link: <http://www.investopedia.com/terms/s/spread.asp>

Bases

Source1	Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.
Source2	Choose any symbol as the second base. By default, the second symbol that is shown on the chart is used. If only one symbol is visible on the chart, you can choose a second symbol with Symbol Search by clicking on Other .

Spread Relative

Function Name: [spread_rel](#)

Tags: [None](#)

Category: [Spread](#)

The Spread Relative indicator computes the difference in the closing prices between two instruments as a percentage. It is calculated as a ratio between Close price of one contract and the Close price of another contract.

Link: <http://www.investopedia.com/terms/s/spread.asp>

Bases

Source1	Choose any symbol as the first base. By default, the first symbol that is shown on the chart is used.
Source2	Choose any symbol as the second base. By default, the second symbol that is shown on the chart is used. If only one symbol is visible on the chart, you can choose a second symbol with Symbol Search by clicking on Other .

Standard Deviation

Function Name: [std_dev](#)

Tags: [Statistics](#)

Category: [Volatility](#)

The Standard Deviation indicator is a statistical measurement of volatility. It is derived by calculating an n-time period Simple Moving Average of the data item; summing the squares of the difference between the data item and its Moving Average over each of the preceding n-time periods; dividing this sum by n and calculating the square root of this result.

Standard deviation is a statistical concept that illustrates how a specific set of values spread around an average value. This statistical tool is used in several analysis techniques such as Bollinger Bands.



Link: <http://www.investopedia.com/terms/s/standarddeviation.asp>

Parameters

period

Default Value: 5 | Minimum: 1 | Maximum: 9999

Type: Numeric

SampleMethod

Default Value: 0

Type: Boolean

Starc Bands

Function Name: `starcb`

Tags: Bands

Category: Volatility

The STARC Bands indicator creates a channel that surrounds a Simple Moving Average. The width of the channel varies with a period of the average range; thus the name ('ST' for Stoller, plus 'ARC' for Average Range Channel). The STARC Bands indicator plots two curves on the chart - above (STARC1) and below (STARC2) the Simple Moving Average.

Link: <http://www.investopedia.com/terms/s/starc.asp>

Parameters

period1

Default Value: 6 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 30 | Minimum: 2 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 10

Type: Numeric

mult1

Default Value: 3 | Minimum: 0.1 | Maximum: 30

Type: Numeric

mult2

Default Value: -3 | Minimum: -30 | Maximum: -0.1

Type: Numeric



Stochastic Cross Signal

Function Name: `stoccr_sig`

Tags: Crossover

Category: Momentum

The theory behind this indicator is that in an upward-trending market, prices tend to close near their high, and during a downward-trending market, prices tend to close near their low. Transaction signals occur when the %K crosses through a three-period moving average called the "%D".

Link: <http://www.investopedia.com/terms/s/stochasticoscillator.asp>

Parameters

Period	<i>Default Value: 14 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
Smooth	<i>Default Value: 3 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OverBought	<i>Default Value: 70 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
OverSold	<i>Default Value: 30 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

Stochastic Fast

Function Name: `stoc_fa`



Tags: None

Category: Momentum

The Stochastic Fast indicator is an oscillator that works similarly to the Relative Strength Index. It plots between 0 and 100; however, its overbought/oversold boundaries are wider which tend to make this oscillator more volatile.

The Stochastic Fast indicator calculates the location of a current price in relation to its range over a period of bars. The default settings are to use the most recent 14 bars (`k_period` parameter), the High and Low of that period to establish a range and the Close as the current price. This calculation is then indexed and plotted as %KF. A smoothed average of %KF, known as %DF, is also plotted. %KF and %DF plot as oscillators with values from 0 to 100. The direction of the Stochastic should confirm price movement. For example, a rising Stochastic confirms rising prices.

Stochastic can also help identify turning points when there are non-confirmations or divergences. For example, a new high in price without a new high in Stochastic may indicate a false breakout. Stochastic is also used to identify overbought and oversold conditions when the Stochastic reaches extreme highs or lows. Additionally, %KF crossing above the smoother %DF can be a buy signal and vice versa.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/Stochastics.html>

Parameters

k_period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

d_period

Default Value: 3 | Minimum: 2 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 80 | Minimum: 0 | Maximum: 100

Type: Numeric

lowerLevel

Default Value: 20 | Minimum: 0 | Maximum: 100

Type: Numeric

Stochastic Momentum

Function Name: `stoc_mom`

Tags: None

Category: Momentum

The Stochastic Momentum Index (SMI) incorporates an interesting twist on the popular Stochastic Oscillator. While the Stochastic Oscillator provides you with a value showing the distance the current Close is relative to the recent x-period high/low range, the SMI shows you where the Close is relative to the midpoint of the recent x-period high/low range.

Author: William Blau



Parameters

period1

Default Value: **13** | Minimum: **1** | Maximum: **9999**

Type: Numeric

period2

Default Value: **25** | Minimum: **1** | Maximum: **9999**

Type: Numeric

period3

Default Value: **2** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Stochastic RSI

Function Name: `stoc_rsi`

Tags: None

Category: Momentum

The Stochastic RSI indicator calculates the level of RSI over a given period of time, and it varies between 0 and 1.

There are two conditions that you look for when interpreting the Stochastic - RSI indicator: When the Stochastic - RSI indicator advances from below to above 0.20 a buy signal is generated. A sell signal is generated when the indicator crosses from above to below 0.80.

To confirm signals and reduce whipsaws a centerline (0.50) was introduced. The sell signal is generated when the indicator crosses the centerline from below. Conversely, when the indicator crosses the centerline from above, a sell signal is generated.

Author: Tushar Chande, Stanley Kroll

Link: <http://www.investopedia.com/terms/s/stochrsi.asp>

Parameters

period

Default Value: **14** | Minimum: **2** | Maximum: **9999**

Type: Numeric

Stochastic Slow

Function Name: `stoc_sl`

Tags: None

Category: Momentum

The Stochastic Slow indicator is an oscillator that works similarly to the Relative Strength Index. It plots between 0 and 100; however, its overbought/oversold boundaries are wider which tend to make this oscillator more volatile. The Stochastic Slow is a smoother version of the Stochastic Fast.



The Stochastic Slow indicator calculates the location of a Close price in relation to its range over a period of bars. The default settings are to use the most recent 14 bars (k_period), the High and Low of that period to establish a range and the Close as the current price.

This calculation is then indexed, smoothed and plotted as %KS. A smoothed average of %KS, known as %DS, is also plotted. %KS and %DS plot as oscillators with values from 0 to 100. The direction of the Stochastic should confirm price movement. For example, rising Stochastic confirms rising prices.

Stochastic can also help identify turning points when there are non-confirmations or divergences. For example, a new high in price without a new high in Stochastic may indicate a false breakout. Stochastic is also used to identify overbought and oversold conditions when the Stochastic reaches extreme highs or lows. Additionally, %KS crossing above the smoother %DS can be a buy signal and vice versa.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/Stochastics.html>

Parameters

k_period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

d_period

Default Value: 3 | Minimum: 2 | Maximum: 9999

Type: Numeric

k_SlowingPeriod

Default Value: 3 | Minimum: 2 | Maximum: 9999

Type: Numeric

upperLevel

Default Value: 80 | Minimum: 0 | Maximum: 100

Type: Numeric

lowerLevel

Default Value: 20 | Minimum: 0 | Maximum: 100

Type: Numeric

Super Trend

Function Name: `supertrend`

Tags: None

Category: Volatility

SuperTrend is a moving stop and reversal line based on the volatility.

Parameters:

Period - calculation period for average volatility

Factor - determines the distance to the market



Parameters

Factor

Default Value: 1.5 | Minimum: 0 | Maximum: 100

Type: Numeric

Period

Default Value: 10 | Minimum: 2 | Maximum: 9999

Type: Numeric

Swenlin IT Breadth Momentum Oscillator

Function Name: `swenlin`

Tags: `Oscillator`

Category: `Market Breadth`

The intermediate Term Breadth Momentum Oscillator is a barometer of breadth. To calculate the ITBM, add the daily McClellan Oscillator (ration adjusted) to the daily 39-day exponential average, then calculate a 20-day exponential average of the result. It is better if this indicator is above the zero line and rising. Below the zero line and falling is the worst scenario. Rising is better then falling, even if below the zero line. he absolute value indicates how overbought/oversold the market is.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single klick on the index name, then the drop-down appears); e.g. if the ITBM of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: Carl Swenlin

Parameters

Index

Type:

fastPeriod

Default Value: 19 | Minimum: 1 | Maximum: 9999

Type: Numeric

slowPeriod

Default Value: 39 | Minimum: 1 | Maximum: 9999

Type: Numeric



Swenlin Trading Oscillator Breadth

Function Name: `stob`

Tags: Oscillator

Category: Market Breadth

The Swenlin Trading Oscillator-Breadth was designed for short-term trading. It is a 5-day simple moving average of a 4-day exponential average of the daily advances minus declines divided by the total daily advances and declines times 1000. This is the ratio that is common in Swenlin's work.

The double smoothing of the short-term data results in a reliable oscillator that persists in one direction, usually tops near short-term market tops, and bottoms near short-term market bottoms. As with most indicators, the primary trend of the market will determine how you will use the indicator. In a bull market, the tops will not be very reliable. In a bear market, the bottoms will not be very reliable.

Data components required:

- Advances - Declines

What Does Market Breadth Mean? A technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Positive market breadth occurs when more companies are moving higher than are moving lower, and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to confirm bearish momentum.

The market, in which a security is traded, has to be selected from the parameter drop-down menu (single click on the index name, then the drop-down appears); e.g. if the ITBM of "Adidas" should be calculated, one has to select "DAX".

Source: "The Complete Guide to Market Breadth Indicators - How to Analyze and Evaluate Market Direction and Strength"

by G. L. Morris, McGraw-Hill

Author: Carl Swenlin

Parameters

Index

Type:

movsPeriod

Default Value: 5 | Minimum: 0 | Maximum: 99999

Type: Numeric

movePeriod

Default Value: 4 | Minimum: 2 | Maximum: 99999

Type: Numeric

Swing Index

Function Name: `swing_index`

Tags: None

Category: Momentum



The Swing Index uses the Open, High, Low and Close prices of a market in an attempt to identify market direction, and in turn, identify realistic market swings. It returns a numerical value for each trading day. An up day will return a value between 0 and +100, and a down day a value between 0 and -100.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/SwingIndex.html>

Parameters

limitMove

Default Value: 3 | Minimum: 0 | Maximum: 20000

Type: Numeric

Tasuki Gap

Function Name: `tasuki_gap`

Tags: None

Category: [Candlestick](#), [Pattern](#)

Tasuki Gaps are price continuation candlesticks patterns.

Bullish Tasuki Gap Candlestick Patterns are where an upward price gap is observed after the first candlestick of the pattern, followed by a third bearish candlestick that results as traders pursue brief and temporary profit-taking. The third candlestick closes unable to fill the real price gap. The upward trend of price is expected to continue.

Similarly, a downward bearish candlestick pattern is the result of investors taking advantage of a temporary purchase price increase to open short positions and should confirm an on-going downtrend as the third candlestick period ends without price filling the real gap. The downward trend of price is expected to continue.

Criteria:

1. Market is in an uptrend (downtrend)
2. A long white (black) body appears.
3. Followed by a white (black) candlestick that gaps up.
4. Third candlestick is black (white), opens inside second candle's body and closes inside the gap, while not filling the gap.

Parameters:

AvgBodyHeightPeriod: The number of body heights that are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

UseTrendCondition: If false, then the criterion No. 1 is not tested.

ShowMark, ShowBar: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric



LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 999

Type: Numeric

UseTrendCondition

Default Value: -1

Type: Boolean

ShowMark

Default Value: -1

Type: Boolean

ShowBar

Default Value: -1

Type: Boolean

Three-Bar Inside Bar

Function Name: [ThreeBarInsideBar](#)

Tags: [None](#)

Category: [Pattern](#), [Price](#)

This three-bar pattern searches for Inside Bars (bars that are completely within the range of the preceding bar) that are formed inside two higher closes (positive reversal) or inside two lower closes (negative reversal).

When the pattern is found, it is marked with an area over the three bars and a signal is drawn on the open of the bar after.

Author: Johnan Prathap

Source: Stocks & Commodities, March 2011: "Three-Bar Inside Bar Pattern"

Parameters

ShowTraderBars

Default Value: -1

Type: Boolean

ShowTraderMarks

Default Value: -1

Type: Boolean

Three Black Crows

Function Name: [three_black_crows](#)

Tags: [Three Bar Pattern](#)

Category: [Candlestick](#), [Pattern](#)

A bearish candlestick pattern that is used to predict the reversal of the current uptrend. This pattern consists of three consecutive long-bodied candlesticks that have closed lower than the previous day with each session's open



occurring within the body of the previous candle. This pattern is used to predict the top of an uptrend, but traders will want to confirm this signal with other technical indicators to confirm that the momentum is actually changing.

Recognition Criteria:

1. Market is characterized by uptrend.
2. Three consecutive long black candlesticks appear.
3. Each day closes at a new low.
4. Each day opens within the body of the previous day.
5. Each day closes near or at its lows.

Note:

The study averages AvgBodyHeightPeriod number of bars and uses that value as a baseline for body height. That baseline is multiplied with BodyHeightRelativeThresh and then compared with the height of three red (black) bars. If each of the three bars' bodies is longer than the calculated value, then those bars are eligible.

Parameters:

AvgBodyHeightPeriod: How many body heights are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

LowerShadowRelativeSize: Lower shadow relative to body size.

UseTrendCondition: If false, then first recognition criterion is not tested

ShowTraderMark, ShowTraderBar: Display control flags

Link: <http://www.candlesticker.com/Cs74.asp>

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 0.59999999999999998 | Minimum: 0 | Maximum: 100

Type: Numeric

LowerShadowRelativeSize

Default Value: 0.40000000000000002 | Minimum: 0 | Maximum: 1

Type: Numeric

UseTrendCondition

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowTraderBar



Default Value: -1

Type: Boolean

Three Level ZZ Semaphore

Function Name: Three_Level_ZZ_Semaphore

Tags: None

Category: Swing

The indicator deduces extreme points of maxima and minima of the senior, average and small period on the price chart. It's created on the basis of improved ZigZag algorithm.

Link: http://www.forex-tsd.com/indicators-metatrader-4/12015-3_level_zz_semafor-indicator-mt4.html

Parameters

Period1

Default Value: **5** | Minimum: **0** | Maximum: **100**

Type: Numeric

Period2

Default Value: **13** | Minimum: **0** | Maximum: **100**

Type: Numeric

Period3

Default Value: **34** | Minimum: **0** | Maximum: **100**

Type: Numeric

Deviation1

Default Value: **1** | Minimum: **0** | Maximum: **100**

Type: Numeric

Deviation2

Default Value: **8** | Minimum: **0** | Maximum: **100**

Type: Numeric

Deviation3

Default Value: **21** | Minimum: **0** | Maximum: **100**

Type: Numeric

Step1

Default Value: **3** | Minimum: **0** | Maximum: **100**

Type: Numeric

Step2

Default Value: **5** | Minimum: **0** | Maximum: **100**

Type: Numeric

Step3

Default Value: **12** | Minimum: **0** | Maximum: **100**

Type: Numeric

PointValue

Default Value: **0.0001** | Minimum: **0** | Maximum: **100**



Type: Numeric

Three-Line Break

Function Name: ThreeLineBreak

Tags: None

Category: Other

The three-line break chart looks like a series of white and black blocks of varying heights. A new block is in a separate column. Each of these blocks is called a line. Using the closing price, a new white line is added if the previous high is exceeded and a new black line is drawn if the market reaches a new low for the move. If there is neither a new high nor a low, nothing is drawn.

If a rally (sell-off) is powerful enough to form three consecutive white lines (three black lines), then the low of the last three white lines (the high of the last three black lines) has to be exceeded before the opposite color line is drawn. The term "three-line break" comes from the fact that the market has to "break" above (or below) the prior three lines before a new opposite color line is drawn.

A major advantage of the three-line break chart is that there is no arbitrary fixed reversal amount. It is the market's action that will give the indication of a reversal.

Source: "Steve Nison - Beyond Candlesticks: New Japanese Charting Techniques Revealed"

Parameters

ShowThreeLineBreak

Default Value: -1

Type: Boolean

Three White Soldiers

Function Name: three_white_soldiers

Tags: Three Bar Pattern

Category: Candlestick, Pattern

A bullish candlestick pattern that is used to predict the reversal of the current downtrend. This pattern consists of three consecutive long-bodied candlesticks that have closed higher than the previous day, with each session's open occurring within the body of the previous candle. These long-bodied candlesticks are a sign of the change in investor sentiment and are used by traders to confirm a shift in momentum. This pattern may form after a period of consolidation, which is still a valid sign of a move higher, but it is not as desirable as it would be if it were found at the end of a prolonged downtrend.

Recognition Criteria:

1. Market is characterized by downtrend.
2. We see three consecutive long white candlesticks.
3. Each candlestick closes at a new high.
4. The opening of each candlestick is within the body of the previous day.



5. Each consecutive day closes near or at its highs.

Note:

The study averages AvgBodyHeightPeriod number of bars and uses that value as a baseline for body height. That baseline is multiplied with BodyHeightRelativeThresh and then compared with the height of the three bars. If each of the three bars' bodies is longer than the calculated value, then those bars are eligible.

Parameters:

AvgBodyHeightPeriod: How many body heights are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

UpperShadowRelativeSize: Lower shadow relative to body size.

UseTrendCondition: If false, then first recognition criterion is not tested.

FirstCandleClosesNearHigh: If false, then first candle is not required to close near or at its high.

ShowTraderMark, ShowTraderBar: Display control flags

Link: <http://www.candlesticker.com/Cs63.asp>

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 0.59999999999999998 | Minimum: 0 | Maximum: 100

Type: Numeric

UpperShadowRelativeSize

Default Value: 0.40000000000000002 | Minimum: 0 | Maximum: 1

Type: Numeric

UseTrendCondition

Default Value: -1

Type: Boolean

FirstCandleClosesNearHigh

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean



TMV

Function Name: `tmv`

Tags: None

Category: Momentum, Trend, Volatility, Volume

Excerpt from S&C article:

The Keltner channels overlaid on price serve to identify both trend and volatility. Note that some charting packages use a modification to the Keltner channels that was created by Linda Raschke.

To further assist with trend identification, I added an average directional movement (ADX) indicator to show trend strength. Direction of the movement is calculated from price relation to an eight-period simple moving average. Rather than plot them as separate indicators, I colored the price bars green when a 10-period ADX is rising and price closes above its eight-period simple moving average. The price bars are red when the ADX is rising, but price is closing below an eight-period moving average.

The CCI serves to identify increases and decreases in momentum, price extremes above the +100 and below the -100 levels, price divergences, and price reversals. And because a move above or below the zero line on the indicator corresponds to price moving above or below its 13-period moving average, it also reveals price direction.

The final component of the TMV is a volume oscillator created by subtracting a short-term average of volume from a long-term volume average. To obtain the extremes during a normal trading month, I subtracted a one-period simple moving average of volume from a 20-period simple moving average of volume to determine the percent change. Even though there are no upper or lower limits for this indicators, spikes generally tend to occur above +50. Those levels can be raised to +75 or higher for those stocks that usually trade on heavy volume.

Note: Volume oscillator extremes are marked with light blue area boxes with white edges.

Source: Stocks & Commodities, February 2012: "Trade Breakouts and Retracements with TMV"

Parameters

KeltnerPeriod

Default Value: **20** | Minimum: **1** | Maximum: **999**

Type: Numeric

ShowVolatilityAndTrend

Default Value: **-1**

Type: Boolean

UseLindaRaschkeKeltner

Default Value: **0**

Type: Boolean

ADXPeriod

Default Value: **10** | Minimum: **1** | Maximum: **999**

Type: Numeric

SMAPeriod

Default Value: **8** | Minimum: **1** | Maximum: **999**

Type: Numeric

ShowTrendStrengthAndDirection

Default Value: **-1**

Type: Boolean

CCIPeriod



UpperLevel	<i>Default Value: 13 Minimum: 1 Maximum: 999</i> <i>Type: Numeric</i>
LowerLevel	<i>Default Value: 100 Minimum: -999 Maximum: 999</i> <i>Type: Numeric</i>
ShowMomentumAndTrend	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShortTermVolumePeriod	<i>Default Value: 1 Minimum: 1 Maximum: 999</i> <i>Type: Numeric</i>
LongTermVolumePeriod	<i>Default Value: 20 Minimum: 1 Maximum: 999</i> <i>Type: Numeric</i>
VolumeOscSpikeThreshold	<i>Default Value: 50 Minimum: 0 Maximum: 999</i> <i>Type: Numeric</i>
ShowVolumeOscillationExtremes	<i>Default Value: -1</i> <i>Type: Boolean</i>

Trading in the Zone

Function Name: zone

Tags: None

Category: Momentum

When both the momentum (Awesome Oscillator - AO) and acceleration (Acceleration / Deceleration Oscillator - AC) have the same direction (both green or red) this means that the momentum is accelerating in the favorable direction. Such a situation gives an opportunity to create the Zone (the fourth dimension):

If both histogram bars (AC and AO) are green, this is defined as the Green Zone (a very bullish market).

When both are red this is the Red Zone (a very bearish market).

If histogram bars point in opposite directions then it is the Gray Zone (market is in transition).

In order to open a new long positions in the Green Zone (short positions in the Red Zone) you need to have at least two consecutive green (red) bars, and the close price of the second bar must be higher (lower) than the closing price of the preceding one.

Parameters

TickValue

Default Value: 0.001 | Minimum: 0 | Maximum: 10



Type: Numeric

Trend Intensity Index

Function Name: tii

Tags: None

Category: Trend

TII is used to indicate the strength of the current trend in the market. The stronger the current trend, the more likely the market will continue moving in the current direction.

Author: M.H. Pee

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/TRIX.html>

Parameters

major_period

Default Value: **60** | Minimum: **2** | Maximum: **9999**

Type: Numeric

minor_period

Default Value: **30** | Minimum: **1** | Maximum: **9999**

Type: Numeric

Trend Strength Index - TSI

Function Name: TrendStrengthIndex

Tags: None

Category: Trend

TSI is an indicator designed to identify true trend strength. A high TSI value indicates that short-term trend continuation (=follow through)

is more likely than short-term trend reversal (=mean reversion), e.g. NASDAQ100 stocks with a value of greater than 1.65 indicate a healthy trend environment.

The creator of TSI is Frank Hassler from Engineering Returns in cooperation with David Varadi from CSS Analytics.

Parameters:

ATR_Period: The period on which the Ratio value is calculated and averaged.

TSI_Period: The period on which the resulting average is averaged.

Link: <http://engineering-returns.com/tsi/>



Parameters

ATR_Period

Default Value: **10** | Minimum: **2** | Maximum: **9999**

Type: *Numeric*

TSI_Period

Default Value: **100** | Minimum: **1** | Maximum: **9999**

Type: *Numeric*

ShowTSI

Default Value: **-1**

Type: *Boolean*

ShowATR

Default Value: **0**

Type: *Boolean*

Triple Exponential Moving Average (TEMA)

Function Name: [tema](#)

Tags: [EMA](#), [Moving Averages](#)

Category: [Trend](#)

A technical indicator used for smoothing price and other data. It is a composite of a single exponential moving average, a double exponential moving average and a triple exponential moving average. Developed by Patrick Mulloy, the TEMA was first published in 1994.

The TEMA smooths the price fluctuations and filters out volatility, thereby making it easier to identify trends with little lag. It is a useful tool in identifying strong, long lasting trends, but may be of limited use in range-bound markets with short term fluctuations.

Parameters

Period

Default Value: **15** | Minimum: **2** | Maximum: **999**

Type: *Numeric*

TRIX

Function Name: [trix](#)

Tags: [Moving Averages](#)

Category: [Trend](#)

The TRIX oscillates around a zero line. Its triple exponential smoothing is designed to filter out insignificant cycles and show the prevailing trend of the base instrument.

The TRIX indicator is an oscillator used to identify oversold and overbought markets and it can also be used as a momentum indicator. When used as an oscillator, a positive value indicates an overbought market while a negative value indicates an oversold market. As a momentum indicator, a positive value suggests momentum is increasing while a negative value suggests momentum is decreasing. TRIX crossing above the zero line is a buy signal while closing below the zero line is a sell signal. Also, divergences between price and TRIX can indicate significant turning points in the market.



TRIX calculates a triple exponential moving average of Close price over the period of time specified by the Period parameter. The current bar's value is subtracted by the previous bar's value. This value along with zero line is plotted it on the chart.

Two main advantages of TRIX compared to other trend-following indicators are its excellent filtration of market noise as well as its tendency to be a leading rather than a lagging indicator. It filters out market noise using the triple exponential average calculation thus eliminating minor short term cycles that may otherwise signal a change in market direction. Its ability to lead a market stems from its measurement of the difference between each bar's "smoothed" versions of the price information. When interpreted as a leading indicator, TRIX is best used in conjunction with another market timing indicator to minimize the effect of false indications.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/TRIX.html>

Parameters

period

Default Value: 12 | Minimum: 2 | Maximum: 9999

Type: Numeric

ShowArea

Default Value: -1

Type: Boolean

ShowLine

Default Value: 0

Type: Boolean

True High

Function Name: `true_high`

Tags: None

Category: Other

The True High function returns a value that is the greater of either the current bar's High or the previous bar's Close. This function can be used to find Gap Open bars, when the current bar's High is less than the previous bar's Close.

True Low

Function Name: `true_low`

Tags: None

Category: Other

The True Low function returns a value that is the lesser of either the current bar's Low or the previous bar's Close. This function can be used to find Gap Open bars, when the current bar's Low is greater than the previous bar's Close.

True Range

Function Name: `true_range`



Tags: None

Category: Volatility

The True Range indicator is a tool for a precise and realistic calculation of the market's price activity. This value is considered when calculating the directional movement of a market.

Author: Welles Wilder

Link: <http://www.investopedia.com/terms/a/atr.asp>

True Strength Index - TSI

Function Name: TrueStrengthIndex

Tags: None

Category: Momentum

A technical momentum indicator that helps traders determine overbought and oversold conditions of a security by incorporating the short-term purchasing momentum of the market with the lagging benefits of moving averages. Generally a 25-day exponential moving average (EMA) is applied to the difference between two share prices, and then a 13-day EMA is applied to the result, making the indicator more sensitive to prevailing market conditions.

Parameters:

period1: Period of the first EMA pass.

period2: Period of the second EMA pass.

Link: <http://www.investopedia.com/terms/t/tsi.asp#ixzz1b7TXrvdy>

Parameters

period1

Default Value: 25 | Minimum: 2 | Maximum: 9999

Type: Numeric

period2

Default Value: 13 | Minimum: 2 | Maximum: 9999

Type: Numeric

ShowTSI

Default Value: -1

Type: Boolean

TSI/RSI Long Signal

Function Name: TSI_RSI_LongSignal

Tags: None

Category: Trend



There are two RSI entry values to be identified. The first one is the entry value for trading when the trend condition (Close>MA50 or ROC(150)>0) is met and the second RSI value is the one for trades in case our trend condition isn't met. The idea is to have TSI to help define if the market is in a trending environment. So let's define a TSI>1.65 as trending vs. non-trending. So in total we have a matrix of 4 RSI entry values: Long condition is given (Close > MA(50) or ROC(150)>0):

- RSI1: TSI>1.65

- RSI2: TSI<1.65 Long condition is NOT given:

- RSI3: TSI>1.65

- RSI4: TSI<1.65 If the market is above 1.65 it's in a trending environment and we want to exit the trade later than in a non-trending environment. The best value to exit in a trending environment is above 61 while it's recommended to exit at 39 in a non-trending environment.

Parameters:

MAperiod, ROCperiod, RSIperiod: Period values for corresponding functions.

TSIthreshold: Trending vs nontrending value.

RSI1, RSI2, RSI3, RSI4: As defined in description above

RSIexit1, RSIexit2: RSI exit values in trending and nontrending environment, respectively.

ShowConsecutive: Toggles display of multiple consecutive buy/sell markers. If True, will show up to three consecutive buy (sell) markers.

Author: Frank Hassler

Source: "Combining TSI and RSI into a winning swing trading system" by Frank Hassler, engineering-returns.com

Link: http://engineering-returns.com/2010/07/13/tsi_rsi_system_parti/

Link: http://engineering-returns.com/2010/07/14/tsi_rsi_system_partii/

Parameters

MAperiod	moving average period <i>Default Value: 50 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ROCperiod	rate of change period <i>Default Value: 150 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
RSIperiod	used for short-term weakness detection <i>Default Value: 2 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
TSIthreshold	trending vs nontrending threshold <i>Default Value: 1.6499999999999999 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
RSI1	RSI threshold 1 <i>Default Value: 18 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
RSI2	RSI threshold 2 <i>Default Value: 8 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>



RSI3	RSI threshold 3 <i>Default Value: 13 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
RSI4	RSI threshold 4 <i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
RSlexit1	RSI exit threshold in trending <i>Default Value: 61 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
RSlexit2	RSI exit threshold in non-trending <i>Default Value: 39 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowConsecutive	display multiple buy/sell signals in a row <i>Default Value: 0</i> <i>Type: Boolean</i>

Tweezers

Function Name: [tweezers](#)

Tags: [None](#)

Category: [Candlestick](#), [Pattern](#)

A pattern found in technical analysis of options trading. Tweezers patterns occur when two or more candlesticks touch the same bottom for a tweezers bottom pattern or top for a tweezers top pattern. This type of pattern can be made with candlestick charts of various types. Tweezers bottoms are considered to be short-term bullish reversal patterns. Tops are bearish, and either end means that buyers or sellers were not able to push the top or bottom any further. Both types of patterns require close observation and research in order to be interpreted and used correctly.

Criteria:

1. Market is in uptrend (downtrend).
2. A white (black) candlestick forms
3. And closes near or at its high (low).
4. Second candle is black (white)
5. And opens near or at its high (low).
6. Second candle's high (low) is near or at first candle's high (low).

Parameters:

MaxRelativeShadow: Maximum upper (lower) shadow of the first candlestick relative to its real body length (criterion No 3). Maximum upper (lower) shadow of the second candle, relative to its body length (criterion No 5).

MaxRelativeDifference: Maximum difference between first and second candle's high (low) relative to average real body height of the two candlesticks (criterion No 6).

UseTrendCondition: If set to false, first criterion is not tested.

ShowMark, ShowBar: Display control flags.



Parameters

MaxRelativeShadow

Default Value: **0.050000000000000003** | Minimum: **0** | Maximum: **10**

Type: Numeric

MaxRelativeDifference

Default Value: **0.050000000000000003** | Minimum: **0** | Maximum: **1**

Type: Numeric

UseTrendCondition

Default Value: **-1**

Type: Boolean

ShowMark

Default Value: **-1**

Type: Boolean

ShowBar

Default Value: **-1**

Type: Boolean

Two Crows

Function Name: [two_crows](#)

Tags: [None](#)

Category: [Candlestick](#), [Pattern](#)

The two crows candlestick pattern is a bearish reversal signal. The first candlestick in the formation is a long white (green) candlestick that closes near its high. The second candle gaps away from the previous days close, but finishes near its low, which is still above the high of the first candle. The last candle opens inside the body of the second candle, but sells off to fill the gap between the first and second candle. On quick glance the two crows pattern will resemble the dark cloud cover.

Recognition criteria:

1. Market is in an uptrend.
2. The first candlestick is long white that closes near its high.
3. The second candle gaps up and closes near its low.
4. Second candle's low is above 1st candle's high.
5. The last candle opens inside the second candle's body and closes inside the first candle's body.
6. The last candle's close is in upper half of the first candle's real body.

Parameters:

AvgBodyHeightPeriod: The number of body heights that are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

MaxShadowRelativeSize: Maximum length of a shadow relative to the candle's body used for the "close near its low (high)" criteria. (See Recognition criteria No.2 and No.3)

UseTrendCondition: If false, then the first criterion is not tested.

UseStrictGapCondition: If false, then the criterion No.4 is not tested.



LastBarCloseInUpperHalf: If false, then criterion No. 6 is not tested.

ShowTraderMark, ShowTraderBar: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 1 | Minimum: 0 | Maximum: 10

Type: Numeric

MaxShadowRelativeSize

Default Value: 0.20000000000000001 | Minimum: 0 | Maximum: 1

Type: Numeric

UseTrendCondition

Default Value: -1

Type: Boolean

UseStrictGapCondition

Default Value: -1

Type: Boolean

LastBarCloseInUpperHalf

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowTraderBar

Default Value: -1

Type: Boolean

Ulcer Index

Function Name: [ulcer_index](#)

Tags: None

Category: [Volatility](#)

The Ulcer Index (UI) is a method for measuring investment risk that addresses the real concerns of investors, unlike the widely used standard deviation of return (SD). It is a measure of the depth and duration of drawdowns in prices from earlier highs.

Using UI instead of SD can lead to very different conclusions about investment risk and risk-adjusted return, especially when evaluating strategies that seek to avoid major declines in portfolio value (market timing, dynamic asset allocation, hedge funds, etc.).

The Ulcer Index, developed in 1987, has been widely recognized by the investment community.

Author: Peter Martin, Byron McCann



Publication: "The Investor's Guide to Fidelity Funds: Winning Strategies for Mutual Fund Investors" (Peter Martin & Byron McCann, John Wiley & Sons, 1989.)

Links: <http://www.tangotools.com/ui/igff.htm>, http://en.wikipedia.org/wiki/Ulcer_Index

Parameters

period

Default Value: 20 | Minimum: 1 | Maximum: 9999

Type: Numeric

level

Default Value: 5 | Minimum: 0 | Maximum: 100

Type: Numeric

Ultimate Oscillator

Function Name: `ultimate_osc`

Tags: Oscillator

Category: Volatility

The Ultimate Oscillator is an oscillator that combines short, intermediate and long-range market cycles. It is primarily used to identify divergences between the indicator and price activity, and works best in choppy or non-trending markets.

The Ultimate Oscillator indicator calculates the sums of the True Ranges of the number of bars specified by the Period1, Period2 and Period3 parameters. These sums are divided into the sums of the distance from the Close to the Low. This value is weighted for the three lengths and plotted on the chart.

Divergences between the Ultimate Oscillator as well as a breakout in the trend of the indicator are significant signals. For example, a bullish divergence is said to occur if market prices reach a new low but the indicator does not follow. Conversely, a bearish divergence is said to occur if market prices reach a new high but the indicator does not follow.

Parameters

period1

Default Value: 14 | Minimum: 1 | Maximum: 9999

Type: Numeric

period2

Default Value: 21 | Minimum: 1 | Maximum: 9999

Type: Numeric

period3

Default Value: 28 | Minimum: 1 | Maximum: 9999

Type: Numeric

Variable Accumulation Distribution

Function Name: `variable_acc_dist`

Tags: VAD



Category: Volume

Accumulation distribution is a study that plots the acquisition of long position in anticipation of a bull market. Distribution serves the same function in anticipation of a market decline. Accumulation distribution modifies the OBV concept by comparing the closing price to the opening price of the same period rather than the previous close to determine whether there was accumulation or distribution in the market for a given period.

Parameters

Period

Default Value: 10 | Minimum: 1 | Maximum: 999

Type: Numeric

Vegas Tunnel

Function Name: vegas

Tags: Bands, Moving Averages

Category: Trend

This indicator implements the 1 hour Tunnel method described by Vegas. The system is primarily traded on Forex and should be used with one hour intraday charts. Use the PointValue parameter to adapt to the point value of the currency traded.

Parameters

PointValue

Default Value: 0.0001 | Minimum: 0.00001 | Maximum: 100

Type: Numeric

Vegas Tunnel Signal

Function Name: vegas_sig

Tags: Bands, Moving Averages

Category: Trend

This indicator is suited for 1h Forex Trading, and was developed by Vegas.

Step 1. Create a 1 hour chart on whatever currency pairs interest you. Barcharts or candlesticks really make no difference.

Overlay on this 3 things: 1) a 169 period [1 hour] ema [exponential moving average] 2) a 144 period [1 hour] ema 3) a 12 period [1hour] ema.

The 144 and 169 ema's create the "tunnel".

Step 2. For trading purposes, the fibonacci numbers of interest are 55, 89, 144, 233, and 377.

Step 3. Wait for the market to come into the area of the "tunnel". When it breaks ABOVE the upper tunnel boundary, you go long. When it breaks BELOW the lower tunnel boundary, you go short.

Step 4. Stops and reverse are placed on the other side of the tunnel.



Step 5. As the market trades in your direction, you take partial profits at the successive fib numbers respectively, with the final portion of your position left on until one of the following conditions occur: 1) market hits the last fib number [377 pips] from the ema's, or 2) the market eventually comes back to the tunnel and violates the other side.

Parameters

PointValue

Default Value: 0.0001 | Minimum: 0 | Maximum: 1

Type: Numeric

ShowTraderBar

Default Value: 0

Type: Boolean

ShowTraderMark

Default Value: -1

Type: Boolean

ShowEachOccurence

Default Value: 0

Type: Boolean

UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean

Vertical Horizontal Filter

Function Name: vhf

Tags: None

Category: Trend

The Vertical Horizontal Filter ("VHF") indicator determines whether prices are in a trending phase or a congestion phase. The VHF indicator attempts to determine the "trendiness" of prices to help you decide which indicators to use.

There are three ways to interpret the VHF indicator:

- You can use the VHF values themselves to determine the degree that prices are trending. The higher the VHF, the higher the degree of trending and the more you should be using trend-following indicators.

- You can use the direction of the VHF to determine whether a trending or congestion phase is developing. A rising VHF indicates a developing trend; a falling VHF indicates that prices may be entering a congestion phase.

- You can use the VHF as a contrarian's indicator. Expect congestion periods to follow high VHF values; expect prices to trend following low VHF values.

Parameters

period

Default Value: 28 | Minimum: 1 | Maximum: 9999



Type: Numeric

Vervoort Cross Over

Function Name: `vervoort_cross`

Tags: Crossover, Moving Averages

Category: Trend

Author: Sylvain Vervoort

Source: S&C May 2008: "The Quest For Reliable Crossovers "

Parameters

Period

Default Value: **55** | Minimum: **2** | Maximum: **9999**

Type: Numeric

VIX Trading System

Function Name: `vix_ts`

Tags: fear index, s&p 500, vix, volatility index

Category: Volatility

Three data series are used in the system: the iPath S&P 500 VIX (VIX), SPDR S&P 500 exchange traded fund (ETF) (SPY), and the ProShares Ultra Dow 30 ETF (DDM). SPY is a proxy for the S&P 500 and DDM is a leverage version of the Dow Jones Industrial Average (DJIA). All calculations are done on the VIX series, and when a VIX buy signal is issued, equal amounts of SPY and DDM are bought the next trading day.

A time series has three values for each day: low, high, and close. For this trading system, the VIX time series is calculated based upon the low of each day. The system rules are as follows:

For buys:

1. Calculate the 50-day moving average using the low price from the VIX time series.
2. Count the number of times in 11 days the VIX is below its moving average. Do this by looking back 11 days from the current bar and checking to see if the VIX is below the 50-day moving average. The VIX must have 11 days below the moving average before a signal is generated.
3. If the 11-day count is exactly 11, then buy the SPY and DDM.

The "sell" rules are the same as the "buy," with the exception that the VIX must be above the moving average and the count reflects the number of days the VIX is below the average.

COLORING NOTE: If past 11 days are below moving average, MA line will be colored red. If past 11 days are above MA, the line will be colored green. Otherwise, the line will be blue.

Author: Trent Gardner

Source: Stocks & Commodities, December 2012: "Using VIX To Forecast The S&P 500"



Parameters

MAperiod	moving average calculation range <i>Default Value: 50 Minimum: 1 Maximum: 999</i> <i>Type: Numeric</i>
LBperiod	lookback period to check if vix is above or below the MA <i>Default Value: 11 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>
LBtrig	threshold number of bars in the lookup period that will trigger buy/sell signal <i>Default Value: 11 Minimum: 1 Maximum: 100</i> <i>Type: Numeric</i>

Volatility

Function Name: volatility

Tags: Statistics

Category: Volatility

The Volatility indicator calculates and plots a smoothed average of the True Range. True Range measures the conventional range of a bar but checks the previous bar's closing price to see if it is outside the current bar's range. If it is, then that closing price is used instead of the High or Low. That is, the previous bar's Close is considered part of the current bar's range. This helps account for gaps between bars. This indicator may be considered a tool for measuring the volatility of a market using a price range concept. Often, extremes in Volatility are associated with a change in character of a market, from trending to trading range and vice versa. This volatility calculation, based on True Range, returns a value in points.

Link: <http://www.investopedia.com/terms/v/volatility.asp>

Parameters

period	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
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Volatility Chaikin

Function Name: vola_chaikin

Tags: Statistics

Category: Volatility

The Volatility Chaikin indicator compares the spread between an instrument's High and Low prices. This is done by first calculating an Exponential Moving Average of the difference between the daily High and Low prices and then calculating the Price Rate of Change of that Exponential Moving Average.

Parameters

period1



period2	<i>Default Value: 10 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
ShowArea	<i>Default Value: 10 Minimum: 1 Maximum: 9999</i> <i>Type: Numeric</i>
ShowLine	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowLine	<i>Default Value: 0</i> <i>Type: Boolean</i>

Volatility Wilders

Function Name: `vola_wilder`

Tags: Statistics

Category: Volatility

The Volatility Wilder is used to measure the volatility of a market and can be used in any market type.

Parameters

period	<i>Default Value: 7 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
constant	<i>Default Value: 3 Minimum: 2.8 Maximum: 3.1</i> <i>Type: Numeric</i>

VolEx Avg Signal

Function Name: `volexavg_sig`

Tags: ATR, Volume

Category: Volatility, Price

This is a consolidated study of the former VolEx Avg Bull and VolEx Avg Bear Trader Bar/Mark. It marks the bar if Close is higher/lower than Open minus Average True Range multiplied by the value you enter.

Parameters

Period	<i>Default Value: 14 Minimum: 0 Maximum: 9999</i> <i>Type: Numeric</i>
Mult	



ShowTraderBar	<i>Default Value: 2 Minimum: 0 Maximum: 100</i> <i>Type: Numeric</i>
ShowTraderMark	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBullishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>
UseBearishSignals	<i>Default Value: -1</i> <i>Type: Boolean</i>

VolEx Perc Signal

Function Name: `volexpct_sig`

Tags: ATR, Volume

Category: Other

This is a consolidated study of the former VolEx Perc Bull and VolEx Perc Bear Trader Bar/Mark. It marks the bar if Close is lower/higher of Close of previous bar minus VtyPercent of the Average True Range.

Parameters

Period	<i>Default Value: 14 Minimum: 2 Maximum: 9999</i> <i>Type: Numeric</i>
VtyPercent	<i>Default Value: 0.2 Minimum: 0 Maximum: 1</i> <i>Type: Numeric</i>
ShowTraderBar	<i>Default Value: 0</i> <i>Type: Boolean</i>
ShowTraderMark	<i>Default Value: -1</i> <i>Type: Boolean</i>
ShowEachOccurence	<i>Default Value: 0</i> <i>Type: Boolean</i>



UseBullishSignals

Default Value: -1

Type: Boolean

UseBearishSignals

Default Value: -1

Type: Boolean

Volume (Units)

Function Name: VolumeUnits

Tags: Volume

Category: Volume

Volume can provide insight into the strength or weakness of a price trend. When a market's price is in an uptrend, buying pressure should be greater than selling pressure. If the volume bar indicates greater volume in an uptrend, generally that uptrend is considered stable. If the uptrend begins to fall and the volume is heavier than is evident on previous rallies, this may be an early warning the uptrend is losing momentum.

Link: <http://www.investopedia.com/terms/v/volume.asp>

Parameters

ShowLine

Default Value: 1

Type: Boolean

ShowHistogram

Default Value: 0

Type: Boolean

Coloring

Default Value: 0

Type: Boolean

Volume Accumulation Distribution

Function Name: vol_acc_dist

Tags: None

Category: Volume

The Volume Accumulation-Distribution indicator is a further stage of the On Balance Volume indicator. In contrast to the On Balance Volume, the overall trade volume is not taken into account, but rather a measured proportion according to the relationship between closing price and the median price.

Author: Marc Chaikin

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/VolumeAccumulation.html>



Volume And Open Interest

Function Name: vol_oi

Tags: Open Interest

Category: Volume

The values for Volume and Open Interest are transmitted from the exchanges. However, the Volume and Open Interest figures are usually one day behind price information.

The Volume and Open Interest indicator plots current symbol's volume and current symbol's open interest on the chart.

Link: <http://www.investopedia.com/terms/v/volume.asp>

Volume Average

Function Name: vol_avg

Tags: None

Category: Volume

The Volume Average indicator plots a 50-bar average of the volume overlaid on the current volume. You can change the number of bars used to calculate the average.

Link: <http://www.investopedia.com/terms/v/volume.asp>

Parameters

period

Default Value: 50 | Minimum: 1 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: 0 | Maximum: 100

Type: Numeric

Volume Colored EMA

Function Name: volume_colored_EMA

Tags: Volume

Category: Volume

- Volume Colored EMA is the another type of moving average that applies weighing factors to reduce the lag in a simple moving average.



- Volume Colored_EMA is the volume analysis, it displays a Exponential Moving Average (EMA) over a specified period of time of Volume and a Volume line which using color conditions. If the today volume is more than a specified period of EMA, the volume line displays green color. In the opposite site the today volume is less than a specified period of EMA, the volume line displays red color.

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 999

Type: Numeric

Volume Colored SMA

Function Name: [volume_colored_SMA](#)

Tags: [Volume](#)

Category: [Volume](#)

Volume Colored SMA is the simplest volume based technical indicator. It is used in chart and in technical analysis to smooth and describe a volume trend by filtering short term spikes and gaps.

As a rule, volume can be somewhat turbulent and, due to some large trades, you may see surges here and there. By using a moving average of volume, you can smooth out those single fluctuations in volume so it becomes possible to evaluate the general direction of volume visually, as well as receiving a numeric representation of the volume trend for further use with other indicators.

Volume Colored_SMA is the volume analysis, it displays a Simple Moving Average (SMA) over a specified period of time of Volume and a Volume line which using color conditions. If the today volume is more than a specified period of SMA, the volume line displays green color. In the opposite site the today volume is less than a specified period of SMA, the volume line displays red color.

Parameters

Period

Default Value: 5 | Minimum: 1 | Maximum: 999

Type: Numeric

Volume Oscillator

Function Name: [vol_osc](#)

Tags: [Oscillator](#)

Category: [Volume](#)

The Volume Oscillator calculates and plots in the chart difference between LongPeriod and ShortPeriod simple moving average of Volume, shown as percentages.

You can use the difference between two moving averages of volume to determine if the overall volume trend is increasing or decreasing. When the Volume Oscillator rises above zero, it signifies that the shorter-term volume moving average has risen above the longer-term volume moving average, and thus, that the short-term volume trend is higher (i.e., more volume) than the longer-term volume trend.



There are many ways to interpret changes in volume trends. One common belief is that rising prices coupled with increased volume, and falling prices coupled with decreased volume, is bullish. Conversely, if volume increases when prices fall, and volume decreases when prices rise, the market is showing signs of underlying weakness.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/VolumeOscillator.html>

Parameters

shortPeriod

Default Value: 10 | Minimum: 1 | Maximum: 9999

Type: Numeric

longPeriod

Default Value: 30 | Minimum: 1 | Maximum: 9999

Type: Numeric

ShowLine

Default Value: 0

Type: Boolean

ShowArea

Default Value: -1

Type: Boolean

Volume Rate Of Change

Function Name: vroc

Tags: None

Category: Volume

The Volume Rate of Change (VROC) indicator displays the difference between the current volume and the volume x-time periods ago. The difference is displayed as a percentage. Almost every significant chart formation (e.g., tops, bottoms, breakouts, etc) is accompanied by a sharp increase in volume. The Volume ROC shows the speed at which volume is changing.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/VolumeRateofChange.html>

Parameters

period

Default Value: 12 | Minimum: 1 | Maximum: 9999

Type: Numeric

Volume Up

Function Name: volume_up

Tags: Volume



Category: Volume

- Volume is the total number of shares of transacted during a specified period.

Although this is a rather basic indicator, volume can provide some very powerful clues to anticipate price behavior.

- Volume can be used to determine the strength of a trend, or confirm the movement of the price. During trending markets, volume tends to be positively correlated with the direction of a trend. During the sideways markets, a higher level of volume can mean that the price will break out of the trading range.

- Volume Up uses comparing concept to defines the color of volume. That means if the today volume more than previous volume, it displays green color. In the opposite site the today volume is less than previous volume, it displays red color.

Volume Weighted EMA

Function Name: `vwema`

Tags: Moving Averages

Category: Trend, Volume

The moving average may be the most widely used indicator. The Exponential Moving Average indicator calculates and plots an exponentially weighted average of prices (Close prices), from each of the most recent number of bars specified by the Period parameter. The Exponential Moving Average indicator assigns more weight to recent price data, and less weight to prices further back in time. It is more sensitive to price activity than the simple moving average and tends to stick closer to the trend. A moving average is generally used for trend identification. Attention is given to the direction in which the average is moving and to the relative position of prices and the moving average. Rising moving average values (direction) and prices above the moving average (position) would indicate an uptrend. Declining moving average values and prices below the moving average would indicate a downtrend.

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

shift

Default Value: 0 | Minimum: -5 | Maximum: 5

Type: Numeric

Volume Zone Oscillator

Function Name: `VolumeZoneOscillator`

Tags: Oscillator

Category: Volume

An Axiom of technical analysis states that with few exceptions, all technical indicators can be classified as either trending or oscillating (nontrending) in their design. This new indicator, the volume zone oscillator (VZO), addresses both. In his book "Technical Analysis Of The Financial Markets", John J. Murphy explains that using oscillators provides three benefits: - Overbought and oversold conditions warn that price trend is overextended and vulnerable. - Divergence between oscillator and price action shows hidden strength or weakness in the market, which is not apparent in the price action. - The crossing of the zero line can give an important trading signal. The formula depends



on only one condition: If today's closing price is higher than yesterday's, then the volume will have a positive value (bullish). Otherwise, it will have a negative value (bearish).

Source: Stocks & Commodities, May 2011: "In The Volume Zone"

Parameters

period

Default Value: 14 | Minimum: 2 | Maximum: 9999

Type: Numeric

ShowVZO

Default Value: -1

Type: Boolean

ShowLevels

Default Value: -1

Type: Boolean

VWAP

Function Name: vwap

Tags: None

Category: Other

The Volume Weighted Average Price (VWAP) of a stock over a specified market period is defined as the average price paid per share during that period (price of each transaction in the market weighted by its volume). It is calculated from the volumes and prices of all trades during a certain period of time.

Link: <http://en.wikipedia.org/wiki/VWAP>

Parameters:

StdDevFactor

Default Value: 1 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowTraderMark

Default Value: -1

Type: Boolean

Williams Percent R

Function Name: perc_r

Tags: None



Category: Momentum

The Williams Percent R indicator shows the relationship between the current Close and the trading range over the look back period. The values are then treated as an overbought/oversold indicator.

It can be used to indicate when to buy on troughs in bull markets and sell on rallies in bear markets. In general, this indicator can help you take advantage of shorter-term counter trend moves occurring within longer-term trends as well as indicate the best time to exit or enter a market.

An oversold market is believed to occur when the William's Percent R line is less than the BuyZone line. Conversely, an overbought market is believed to occur when the Percent R line is greater than the SellZone line.

Link: <http://www.onlinetradingconcepts.com/TechnicalAnalysis/WilliamsR.html>

Parameters

period

Default Value: 14 | Minimum: 1 | Maximum: 9999
Type: Numeric

upperLevel

Default Value: -20 | Minimum: -100 | Maximum: 0
Type: Numeric

lowerLevel

Default Value: -80 | Minimum: -100 | Maximum: 0
Type: Numeric

Williams Price Accumulation Distribution

Function Name: `pr_acc_dist`

Tags: None

Category: Trend

Williams Price Accumulation Distribution is used to identify divergences between market price and indicator.

The Williams Price Accumulation Distribution indicator was developed by Larry Williams and is based on Volume Accumulation Distribution. It is similar to the classic Volume Accumulation Distribution indicator except that the Williams Accumulation Distribution does not include volume in its calculation. Accumulation occurs when the Close of the current bar is greater than the Close of the previous bar and its value is calculated based on the difference between the Close of the current bar and the True Low. Distribution occurs when the Close of the current bar is less than the Close of previous bar and its value is calculated based on the difference between the Close of the current bar and the True High.

The value of Williams Accumulation Distribution is cumulative. Accumulation (positive values) is added to the previous Williams Accumulation Distribution value, while Distribution (negative values) is subtracted from the previous value. If the current Close equals the previous bar's Close, the Accumulation-Distribution value is unchanged.

The William's Accumulation Distribution indicator is used to identify divergences between price activity and the indicator itself. As with other divergences, if the market reaches new highs while the indicator is stagnant or falling, the current trend may be weakening suggesting a possible reversal. Conversely, if the market reaches new lows while the indicator is stagnant or rising, the trend may be weakening, perhaps signaling a reversal.



Woodies CCI System

Function Name: woodies_cci

Tags: None

Category: Trend

Author: Ken Wood

Yorikiri

Function Name: yorikiri

Tags: Belt-Hold

Category: Candlestick, Pattern

Yorikiri or Belt-Hold is a one candle pattern. It is basically a long real body with zero size or insignificant lower and/or upper shadows. The bullish belt-hold line pattern consists of a long white body. If this pattern appears at the bottom of a down trend it could be a reversal sign with bullish implications. The bearish belt-hold line pattern consists of a long black body. If this pattern appears at the top of an uptrend it could be a reversal sign with bearish implications.

Criteria:

1. Market is in uptrend (downtrend).
2. A long black (white) candle appears.
3. It opens near or at it's high.

Parameters:

AvgBodyHeightPeriod: The number of body heights that are averaged to form the body length baseline.

LongBodyRelativeThresh: Baseline multiple used to form the threshold for "long body".

MaxRelativeShadowLength: Maximum size of the open side shadow relative to the length of the real body.

UseTrendCondition: If false, then the criterion No. 1 is not tested.

ShowMark, ShowBar: Display control flags.

Parameters

AvgBodyHeightPeriod

Default Value: 14 | Minimum: 1 | Maximum: 999

Type: Numeric

LongBodyRelativeThresh

Default Value: 2 | Minimum: 0 | Maximum: 100

Type: Numeric

MaxRelativeShadowLength

Default Value: 0.02 | Minimum: 0 | Maximum: 0.5

Type: Numeric

UseTrendCondition

Default Value: -1



ShowMark	<i>Type: Boolean</i>
	<i>Default Value: -1</i>
	<i>Type: Boolean</i>
ShowBar	
	<i>Default Value: -1</i>
	<i>Type: Boolean</i>

Zero Lag Indicator

Function Name: zerolag

Tags: None

Category: Trend

The indicator is based on an exponential moving average, the calculation of which is easy to understand. Exponential averages belong to the calculation methods with shorter lags. In simple terms, for each time period in market data, a simple calculation is carried out that first determines the deviation of the current price from the previous average value. This value - described as an error - is multiplied with a weighing factor and then added to the previous average value. This results in the current average value.

Ehlers expands this calculation by two steps. In the first step, a gain value greater than zero and smaller than 50 is added to the current price, which can then be used to determine the deviation (described as an error above) from the previous average. In the second step the entire value range between zero and 50 is run through as an input value for the error calculation in order to determine the optimal gain value. This is then added to the modified calculation of the exponential average. The result is a much more rapidly reacting indicator that shows a much lower lag movement and never shoots above the movement at price turning points.

Interpretation It is not possible to effectively determine the value of this indicator. Reducing unwanted lags in the calculation of averages certainly has its advantages. Completely eliminating this delay, however, is not necessary sensible as such an indicator would show the pure price movement. In order to provide the reader with an opportunity to evaluate the method, Ehlers developed a "Cross Over System". The system shown here offers two parameters that can be optimised.

Length - The basis for setting the period of the exponential average. GainLimit- The maximum value for strengthening the input signal of the EMA calculation.

Author(s): John F. Ehlers, Ric Way

Source: Stocks & Commodities November 2010

Parameters

Length

Default Value: 20 | Minimum: 2 | Maximum: 99999

Type: Numeric

GainLimit

Default Value: 50 | Minimum: 1 | Maximum: 99999

Type: Numeric



Zig Zag

Function Name: zigzag

Tags: None

Category: Swing

A trend following indicator that is used to predict when a given security's momentum is reversing. The indicator is used by traders to eliminate random price fluctuations and attempts to profit when the trend changes. The Zig Zag tool is often used in wave analysis to determine the positioning of the stock in the overall cycle. Like many trend following indicators, the disadvantage is that the result is based off past price history and doesn't change direction until a certain move occurs. Given the lag, many traders will want to use the Zig Zag indicator to confirm the direction of the trend rather than timing an entry/exit.

Parameters:

Sensitivity - Minimum relative difference (given in percentage) between consecutive turnpoints on the zigzag line.

Link: http://www.investopedia.com/terms/z/zig_zag_indicator.asp

Parameters

Sensitivity

Default Value: 7 | Minimum: 0 | Maximum: 100

Type: Numeric

ShowLine

Default Value: -1

Type: Boolean

ShowTraderMark

Default Value: 0

Type: Boolean

ShowTraderBar

Default Value: 0

Type: Boolean



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