

Currency Strength Meter

Introduction

The key thing about currency pairs is that they just indicate the strength of one currency relative to another. If we see the EUR/USD going up, is it because the EUR is strengthening or the USD is weakening? It isn't possible to tell this by just looking at the EUR/USD in isolation.

A quick way to find out might be to check other currency pairs involving one or both of these currencies, e.g. check EUR/GBP and AUD/USD, etc. So, if both EUR/USD and AUD/USD were going up, it would really tend to indicate USD weakness was the common factor.

However, a more objective way is to work out the *average strength* of the currency relative to a "basket" of other currencies. This is what the US Dollar Index (USDX) and FXCM's USDOLLAR do for the dollar.

To find the average of a basket of currencies we have to use the *geometric mean* rather than the *arithmetic mean*. We have to do this, because you can't simply add up numbers in different units of measure - it just doesn't make sense.

The US Dollar Index (USDX) uses a weighted geometric mean of 6 currencies. The USDOLLAR from FXCM, is an un-weighted geometric mean of 4 currencies.

The Currency Strength Meter indicator uses the un-weighted geometric mean technique. However, it does this, not just for the USD, but for 7 other currencies too. That's 8 major currencies in total: USD, EUR, GBP, CHF, JPY, AUD, CAD and NZD.

Installation

Please use the provided installer.

This software is for MarketScope 2.0 charting/trading application. There are no special hardware or software requirements. If your PC will run the MarketScope 2.0 software then you should be good to go. A good performance internet connection is recommended.

VERY IMPORTANT NOTE:

The "Full" version of the Currency Strength Indicator computes the strengths for 8 base currencies. This requires 28 specific currency pairs in order to perform the calculations. To use the "Full" version of the indicator you must subscribe your Trading Station platform to all of the required currency pairs.

However, some FXCM account types have a limit on the maximum number of symbols that can be subscribed. Currently a Demo account is limited to 20 symbols and a Mini account is limited to 18 currency pairs.

A Standard account also has a default limit of 20 symbols, however this limit is arbitrary and if you contact your FXCM support desk they should be able to remove it, allowing you to subscribe to all symbols offered by FXCM.

The indicator supports different “versions” in order to accommodate the limitations of account types:

- The “Full” version computes the strengths for 8 base currencies (USD, EUR, GBP, CHF, JPY, AUD, CAD and NZD). It requires 28 currency pairs.
- The “Mini” version also computes the strengths for 8 base currencies (USD, EUR, GBP, CHF, JPY, AUD, CAD and NZD). However, it only requires 18 currency pairs.
- The “Lite” version only computes the strengths for 5 base currencies (USD, EUR, GBP, JPY and AUD). It requires only 10 currency pairs.
- The “Lite+” versions (e.g. “Lite + CHF”) compute the strengths for 6 base currencies (as “Lite” but with 1 additional currency). It only requires 15 currency pairs.

The “Full” version is recommended if you are able to subscribe to the required currency pairs. Otherwise the “Mini” and “Lite” versions are good alternatives.

The required (28) currency pairs for the “Full” version are...

EUR/USD, GBP/USD, USD/CHF, USD/JPY, AUD/USD, USD/CAD, EUR/GBP, EUR/CHF, EUR/JPY, EUR/AUD, EUR/CAD, GBP/CHF, GBP/JPY, GBP/AUD, GBP/CAD, CHF/JPY, AUD/CHF, CAD/CHF, AUD/JPY, CAD/JPY, AUD/CAD, NZD/USD, EUR/NZD, GBP/NZD, NZD/CHF, NZD/JPY, AUD/NZD and NZD/CAD.

The required (18) currency pairs for the “Mini” version are...

EUR/USD, USD/JPY, AUD/USD, EUR/AUD, EUR/CAD, EUR/CHF, EUR/GBP, EUR/JPY, EUR/NZD, AUD/JPY, GBP/CHF, GBP/JPY, GBP/USD, NZD/JPY, NZD/USD, USD/CAD, USD/CHF and AUD/NZD.

The required (10) currency pairs for the “Lite” version are...

EUR/USD, GBP/USD, USD/JPY, AUD/USD, EUR/GBP, EUR/JPY, EUR/AUD, GBP/JPY, GBP/AUD and AUD/JPY.

If you are not subscribed to all of the required currency pairs, then you will get an error message when adding the Currency Strength Meter indicator to a chart. If you see the error message (e.g. see Figure 1), then re-check that you have all the required currency pairs subscribed to your TradingStation platform, and try again.



Figure 1 : Error message due to missing currency pair

User Guide

This indicator uses the un-weighted geometric mean technique which calculates the ‘currency strength’ of the following 8 currencies: USD, EUR, GBP, CHF, JPY, AUD, CAD and NZD. To do this on 1 chart means that the chart has 28 currency pairs added to it, to get all the combinations!

The multiple currency indices can not be compared directly onto the same chart, because they all have different units of measure and scales. Instead the indicator plots % change from some reference datum. This reference datum can be set in a number of ways: for example, simply using the start of the chart, by entering the date & time manually into the indicator, or “N-days back”, etc.

The indicator can also perform additional post-processing of the ‘raw’ data. This includes the traditional technical analysis indicators: RSI, SMA (Simple Moving Average), EMA (Exponential Moving Average), MACD and STOCHASTIC.

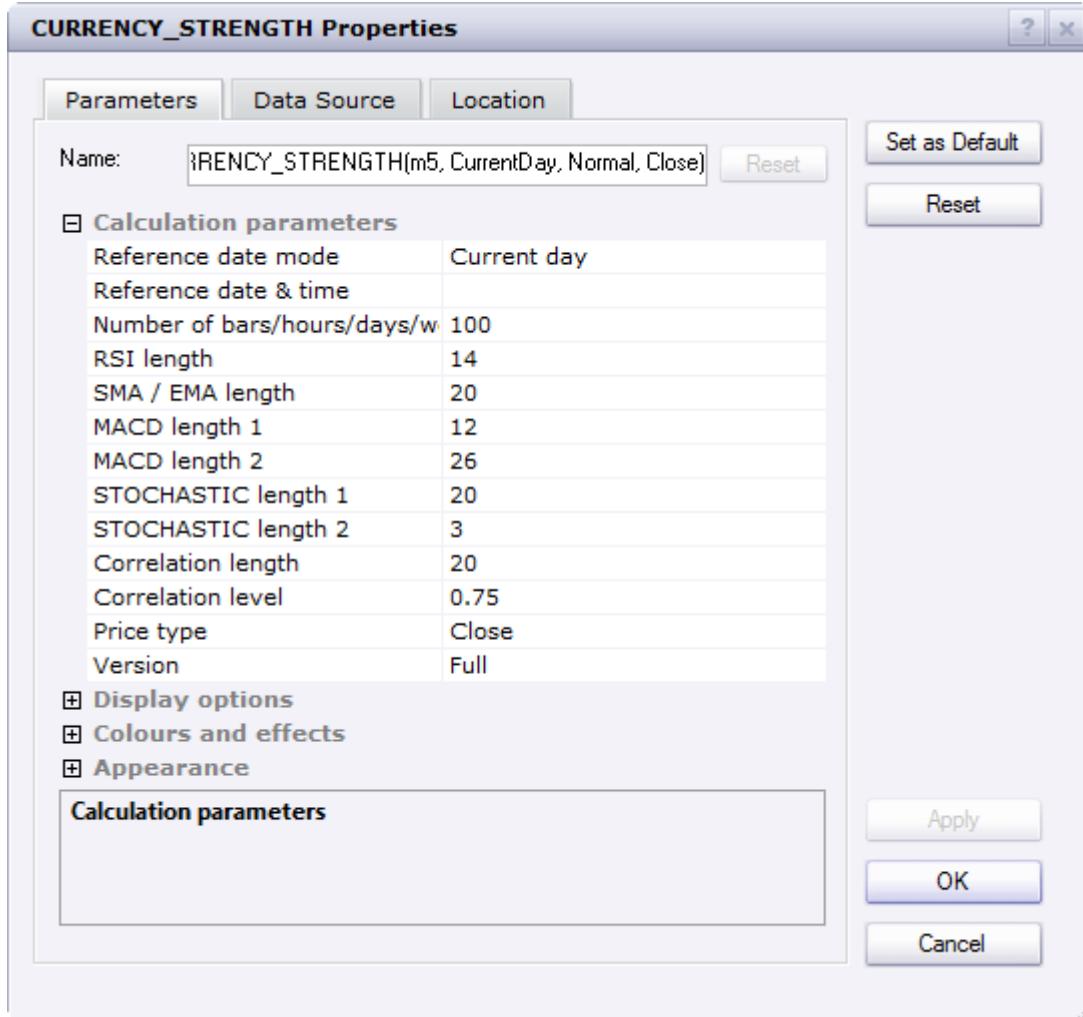
The Currency Strength Meter can also compute a “correlation matrix” for the base currencies. This matrix consists of every pairing of the base currencies. A correlation value of +1 indicates that the 2 instruments are highly correlated (e.g. if A goes up then B goes up too). A correlation value of -1 means the 2 instruments are highly anti-correlated (e.g. if A goes up then B goes down). A correlation value of 0 means the 2 instruments are not correlated.

Of course, you can also use standard technical analysis techniques on the raw data like any other instrument. For example, drawing trend lines, looking for higher highs / lower lows, double tops / double bottoms, support & resistance lines, etc.

NOTE: The Currency Strength Meter indicator can be added to a chart of any instrument, and any timeframe. The underlying instrument is only used to create the time-base for the Currency Strength Meter, therefore it should normally be an instrument that is open 24 hours per day, e.g. EUR/USD.

Input Parameters

Calculation Parameters



Reference date mode: This can be “Chart”, “Specified date”, “N-bars/hours/days/weeks back”, “Current day/week/month/year”, etc.. When set to “Chart” the start of the chart is used as the reference. When set to “Specified date” the date (and optional time) should be entered into the “Reference date” field. When set to “N-bars/hours/days/weeks back”, the reference date is set to “N” bars/hours/days/weeks back from the current date & time, where “N” is specified in the “Number of bars/hours/days/weeks back” field. When set to “Current day/week/month/year” the start of the current day/week/month/year is used as the reference.

NOTE: when set to “N-bars back” mode, this sets the starting point at the time the indicator is activated. It is not a rolling value, i.e. it is not constantly updating to use always the last N-bars. The “N-hours/days/weeks back” work in a similar manner. Use the “N-bars back (rolling)” mode for a rolling computation.

Reference date: This is the reference date (and optional time) use when the mode is “Specified date”. NOTE: The format is YYYY/MM/DD hh:mm. The time part (hh:mm) is optional, but should be 24hour clock notation if used.

Number of bars/hours/days/weeks back: This is the value of “N” used when the mode is “N-bars back”, “N-bars back (rolling)”, “N-hours back”, “N-days back” or “N-weeks back”.

RSI length: The length for the RSI indicator when using the “post-processing” modes.

SMA/EMA length: The length for the SMA or EMA indicator when using the “post-processing” modes. This value is also used for the “NORMALIZED” option.

MACD length 1 / length 2: The lengths for the MACD indicator when using the “post-processing” modes (length 1 is the fast moving average, and length 2 is the slow moving average).

STOCHASTIC length 1 / length 2: The lengths for the STOCHASTIC indicator when using the “post-processing” modes (length 1 is equivalent to the %K period, and length 2 is equivalent to the %D period).

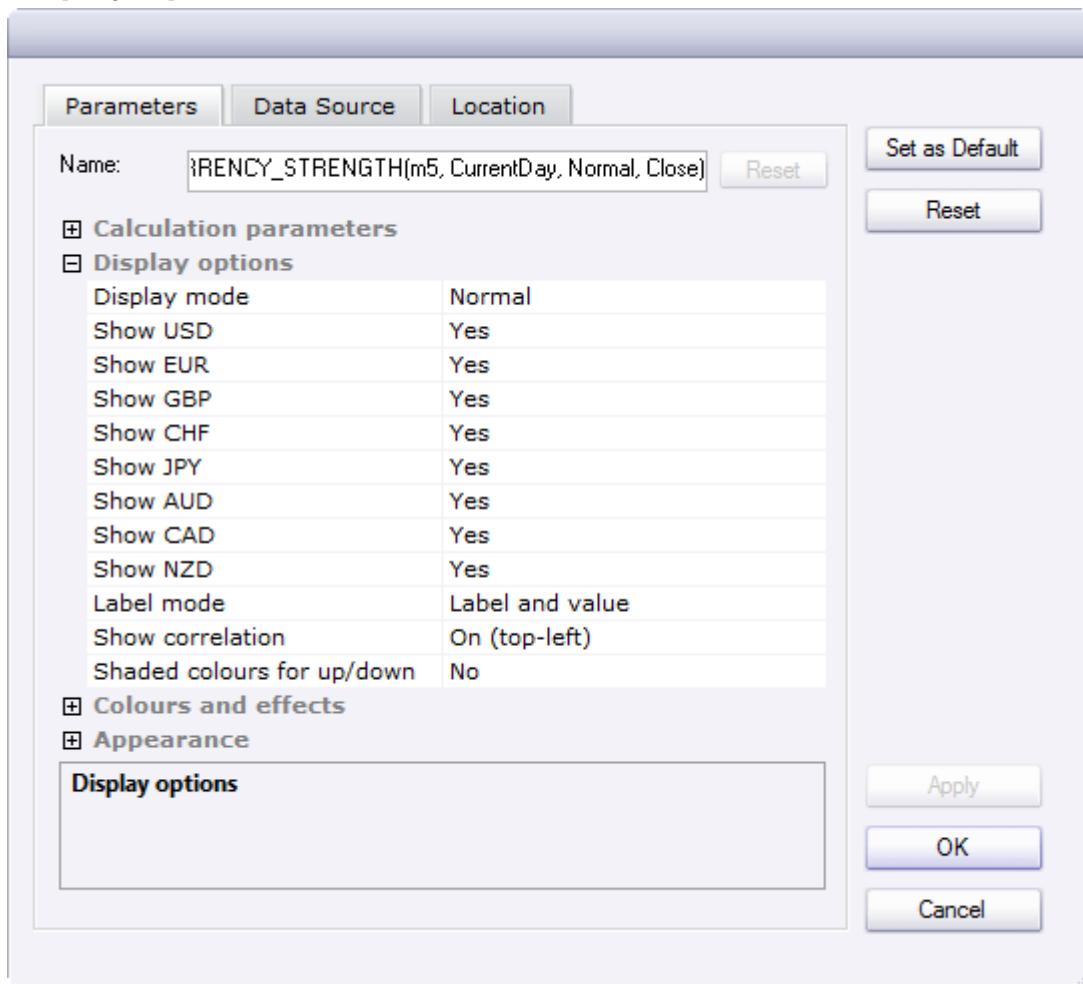
Correlation length: The length of the correlation study, i.e. how many bars back to use for the correlation computation.

Correlation level: This value is used when colouring the correlation matrix. For example, setting to 0.75 will cause values ≥ 0.75 to be highlighted in the positive colour, and values ≤ -0.75 to be highlighted in the negative colour.

Price type: This can Close, Median or Typical. The default is the Close price, however Median and Typical might also give useful results.

Version: This can be Full, Mini or Lite. Also “Lite + CHF”, “Lite + CAD” and, “Lite + NZD” are now supported.

Display Options



Display mode: This can be Normal, RSI, SMA, EMA, MACD, STOCHASTIC or NORMALIZED. The Normal setting just displays the usual currency strength indices. The other modes perform some post-processing on the data by feeding it through another indicator (i.e. an RSI, SMA, EMA, MACD or STOCHASTIC indicator). The lengths for these indicators are set via input parameters in the Calculation Parameters section.

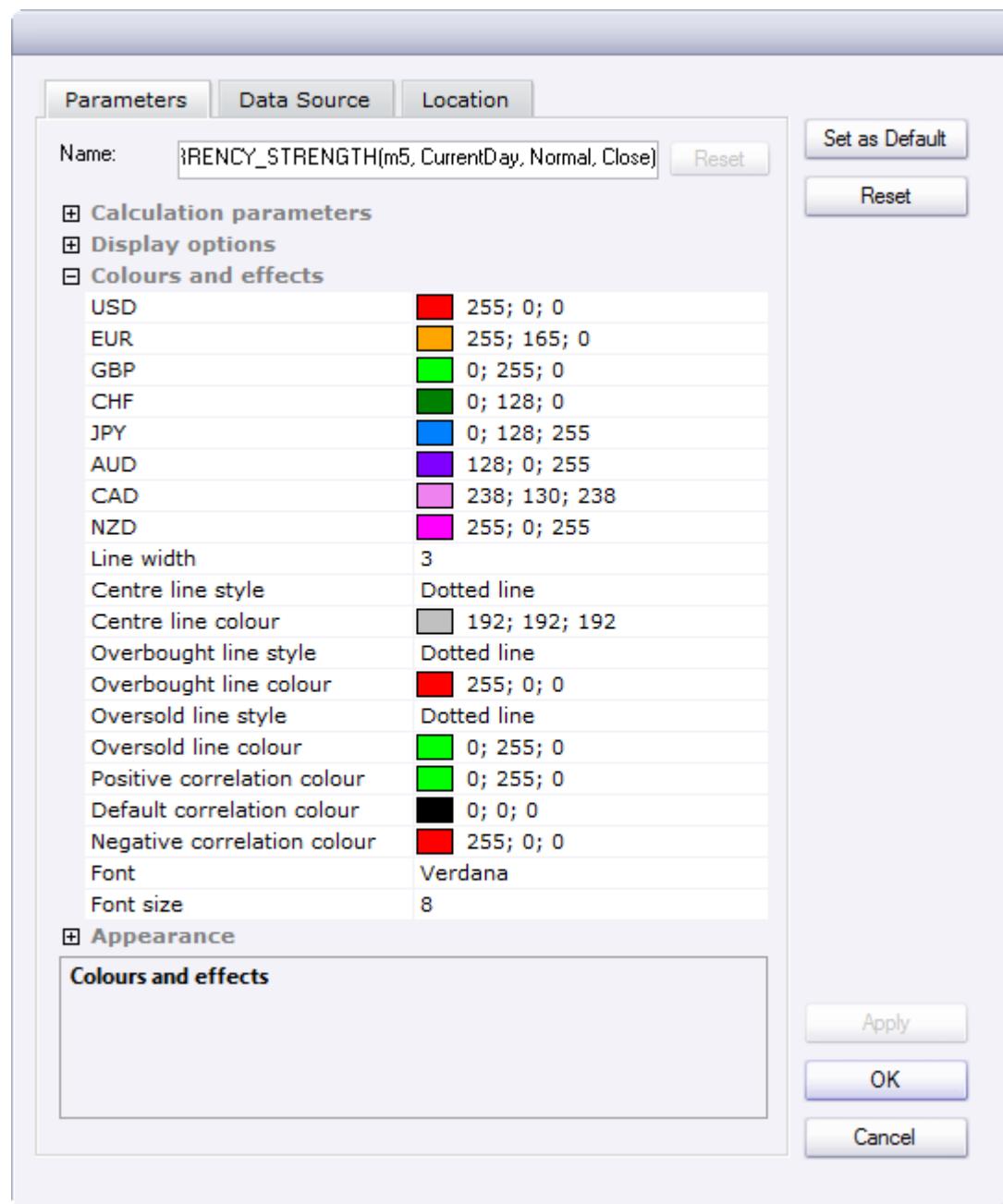
Show USD/EUR/GBP/etc.: This option can be used to turn off the displayed line for the selected currency index. NOTE: The calculation for the remaining currency strength indices remains the same; it is simply a display option to reduce some clutter on the chart.

Label mode: This can be Off, Label, Value or Label and Value. This mode controls the text which can be displayed as a label next to the plotted line.

Show correlation: This can be set to "Off", "On (top-left)" or "On (bottom-left)". The correlation is calculated over the number of bars given by the "Correlation length" input parameter. The correlation values are displayed as a triangular matrix in the corner of the chart (either top-left or bottom-left corner).

Shaded colours for up/down: When set to Yes, the output lines are shaded (i.e. darker variant of the base colour) when the value is decreasing. This results in a two-tone display line which is sometimes useful for distinguishing direction.

Colours and Effects



USD/EUR/GBP/etc.: Specify the colours for the USD, EUR, GBP, etc.

Line width: This is the width of the plotted lines.

Centre line style: This controls the line style for the centre level line.

Centre line colour: This controls the line colour for the centre level line.

Overbought line style: This controls the line style for the overbought level line.

Overbought colour: This controls the line colour for overbought level line.

Oversold line style: This controls the line style for the oversold level line.

Oversold colour: This controls the line colour for oversold level line.

Positive correlation colour: This colour is used to highlight strong positive correlations.

Default correlation colour: This is the default colour used for the correlation values.

Positive correlation colour: This colour is used to highlight strong negative correlations.

Font: This is the font for the labels.

Font size: This is the font size used for the labels and the correlation value matrix.

Screenshots



Figure 2 : H4 chart using "N-days back" mode (N = 50)



Figure 3 : Correlation study added to chart (top-left)



Figure 4 : RSI display mode (using RSI(14))

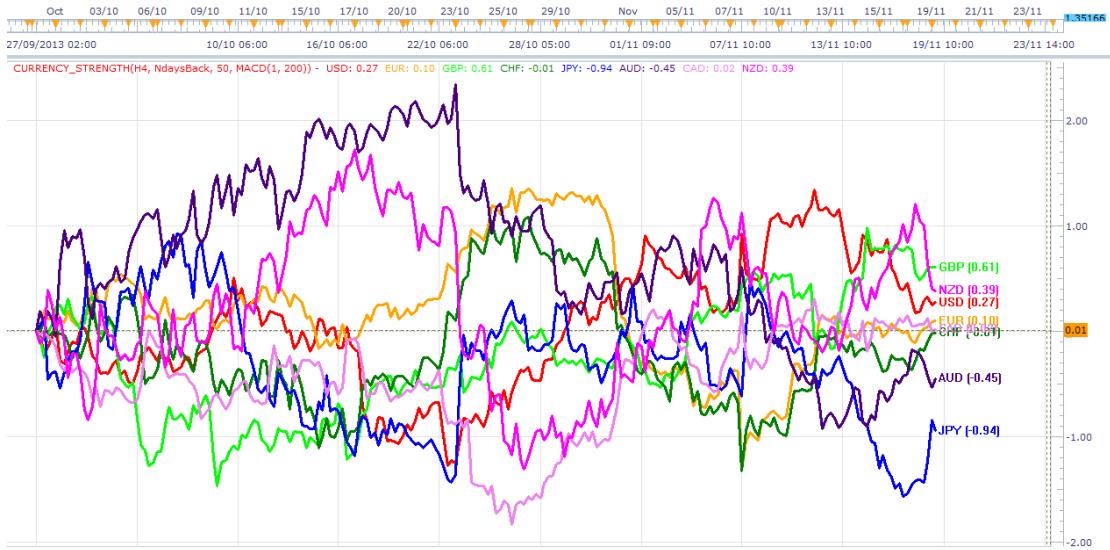


Figure 5 : MACD display mode (using MACD(1, 200))

Educational Links

The following links provide some good background information on currency indices and the formulae behind them:

- http://en.wikipedia.org/wiki/U.S._Dollar_Index
- <http://www.fxcm.co.uk/usdollar-dow-jones-fxcm-dollar-index-basket.jsp>
- http://en.wikipedia.org/wiki/Geometric_mean

Additional information can be found on my blog (<http://robocod.blogspot.co.uk/>).

Support

Should you have any problems with installation or use of this indicator, then please email sjdcnnsn@gmail.com with a description of your problem or query.

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The described application does not consider your individual circumstances and trading objectives. Therefore, it should not be considered as a personal recommendation or investment advice. Past performance is not indicative of future results.

There is no guarantee that the systems, trading techniques, trading methods, and/or indicators will result in profits or not result in losses