



S-Trader





SKEW | Skewness

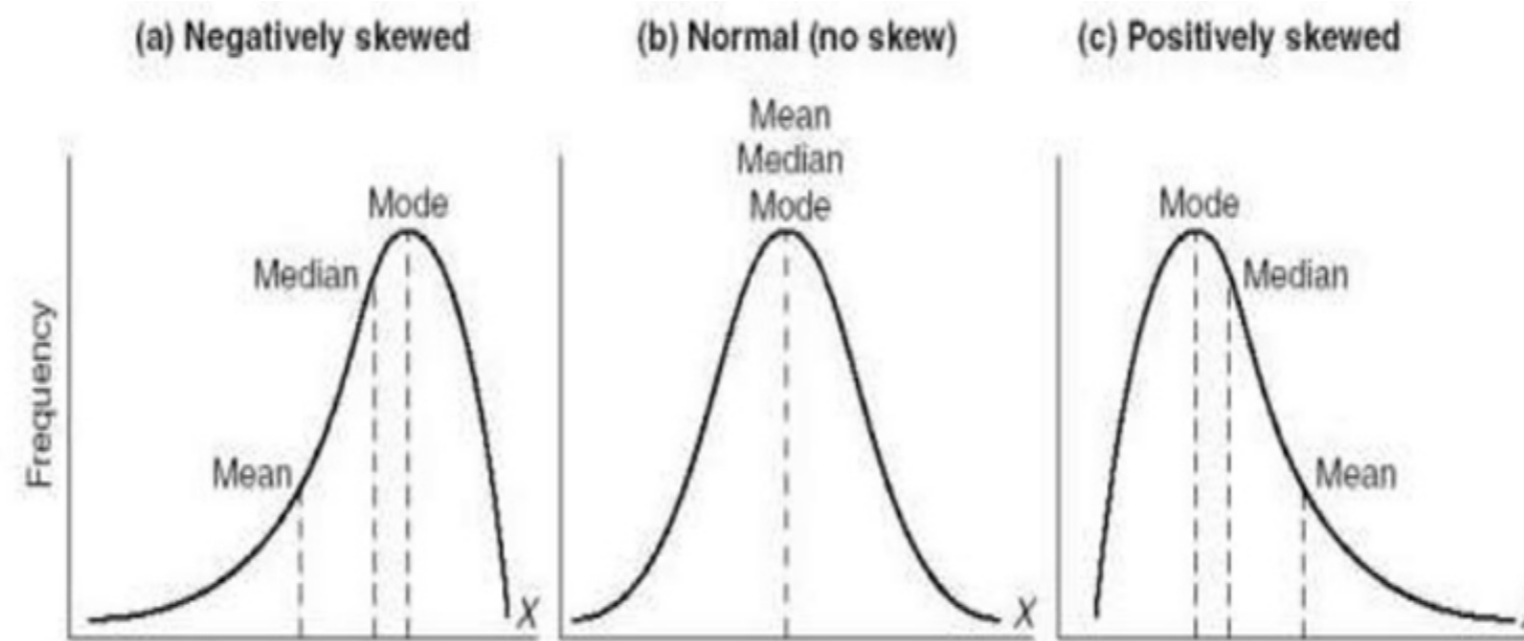
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Description

In probability theory and statistics, skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable about its mean. The skewness value can be positive or negative, or undefined. The qualitative interpretation of the skew is complicated and unintuitive. Skew does not refer to the direction the curve appears to be leaning; in fact, the opposite is true. For a unimodal distribution, negative skew indicates that the tail on the left side of the probability density function is longer or fatter than the right side – it does not distinguish these two kinds of shape. Conversely, positive skew indicates that the tail on the right side is longer or fatter than the left side. In cases where one tail is long but the other tail is fat, skewness does not obey a simple rule. For example, a zero value means that the tails on both sides of the mean balance out overall; this is the case for a symmetric distribution, but is also true for an asymmetric distribution where the asymmetries even out, such as one tail being long but thin, and the other being short but fat. Further, in multimodal distributions and discrete distributions, skewness is also difficult to interpret. Importantly, the skewness does not determine the relationship of mean and median. In cases where it is necessary, data might be transformed to have a normal distribution.





Formula

Step 1: Calculate the right moving average for the specified source, n periods and moving average type using existing formulas;

Step 2: Calculate $SUM = (X_i - X_{AVERAGE})^3$;

Step 3: Calculate the series STDEV using the required n periods and moving average type using existing formulas;

Step 4: Calculate $SKEWNESS = SUM / [(n-1)*STDEV^3]$

$$g = \frac{\sum_{i=1}^n (x_i - \bar{x})^3}{(n-1)s^3}$$

Parameters

Source	Any price source (O, H, L, C, Vol, OI) or any other built-in or custom study
Periods	Any number of periods
MA Type	Any available moving average type

Output value(s)

There is one output value resulting from the formula, the Skewness.

Plot

The plot is in a separate panel at the bottom.

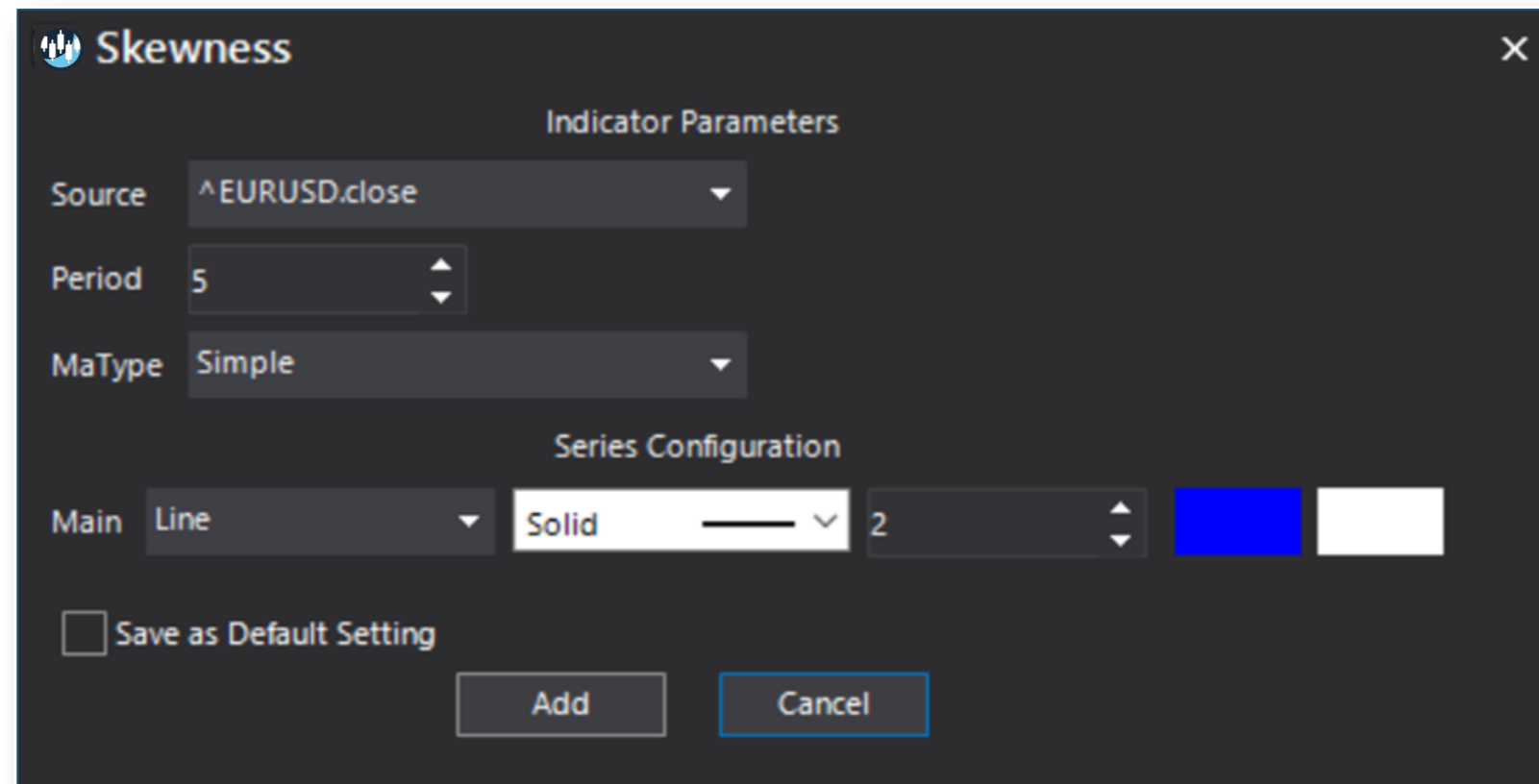


Quant Script Syntax

Short Form	<i>SKEW</i> (Source, Periods, MA Type)
Long Form	<i>Skewness</i> (Source, Periods, MA Type)

Dialogs

Chart Study Dialog



The Skewness dialog box is titled "Skewness" and contains the following settings:

- Indicator Parameters:**
 - Source: ^EURUSD.close
 - Period: 5
 - MaType: Simple
- Series Configuration:**
 - Main: Line
 - Style: Solid
 - Width: 2
 - Color: Blue
- Save as Default Setting
- Buttons: Add, Cancel



Sample Chart With Study





Quant Script™ Wizard Study Dialog

The image shows two overlapping dialog boxes in the S-Trader desktop platform. The background dialog is the 'Custom Study Wizard' and the foreground dialog is the 'Add Variable' dialog.

Custom Study Wizard Dialog:

- Save To Group: Default
- Custom Study Name: [Empty text field]
- Password: [Empty text field]
- Result: Line, Solid, 2, [Color swatches]
- Reverse_Result: Line, Solid, 2, [Color swatches]
- Buttons: Add To New Panel (checked), Add New Variable, Edit Selected Variable
- Table with columns: Name, Description
- Buttons: OK, Cancel

Add Variable Dialog:

- Name: [Empty text field]
- Description: [Empty text field]
- Variable List: CA, CorrelationAnalysis, KURT, Kurtosis, MedianPrice, MP, SDV, SERR, SKEW, **SKEWNESS**, StandardDeviations, StandardError, TP, TypicalPrice, WC, WeightedClose, SVA Functions, Trend Indicators
- Source: CLOSE
- Period: 5
- MaType: Simple
- Button: Create Script Line
- Code preview: SKEWNESS(CLOSE, 5, Simple)
- Buttons: OK, Cancel



Quant Script™ Study Dialog

Custom Study Editor [X]

Save To Group: 7_STATISTICS [A] 16.25

Custom Study Name: SKEW

Password: []

Result: Line [Solid] 2 [Color: Teal]

Reverse_Result: Line [Solid] 2 [Color: Purple]

Formula [Add To New Panel]

```
SET RESULT = SKEW(CLOSE, 5, SIMPLE)
SET REVERSE_RESULT = Skewness(CLOSE, 5, SIMPLE)
```

[OK] [Cancel]