



**S-Trader**





## KURT | Kurtosis

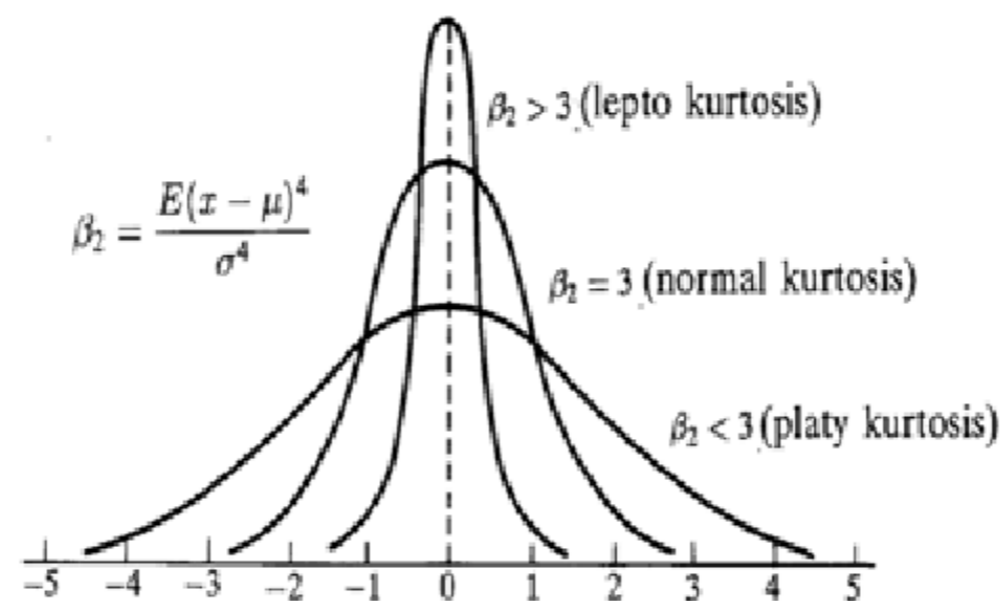
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## Description

In probability theory and statistics, kurtosis (from Greek: κυρτός, kyrtos or kurtos, meaning "curved, arching") is a measure of the "tailedness" of the probability distribution of a real-valued random variable. A univariate normal distribution – also known as mesokurtic – has a kurtosis of 3. This is why sometimes Kurtosis is expressed as Excess Kurtosis on top of the +3 value to depict the excess or deficit Kurtosis of a specific distribution versus that of the idealized normal distribution. A series with positive Excess Kurtosis is considered leptokurtic (thick tails, thin and tall peak) whereas one with negative Excess Kurtosis is considered platykurtic (thin tails, short and broad-looking peak).





## Formula

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

Step 2: Calculate  $SUM = (X_i - X_{AVERAGE})^4$

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

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

Step 5: Calculate  $EXCESS KURTOSIS = Kurtosis - 3$

$$K = \frac{\sum_{i=1}^n (x_i - \bar{x})^4}{(n-1)s^4}$$

## Parameters

<b>Source</b>	Any price source (O, H, L, C, Vol, OI) or any other built-in or custom study
<b>Periods</b>	Any number of periods
<b>MA Type</b>	Any available moving average type
<b>Display As Excess Kurtosis</b>	Check button to display raw or excess kurtosis numbers

## Output value(s)

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

## Plot

The plot is in a separate panel at the bottom.

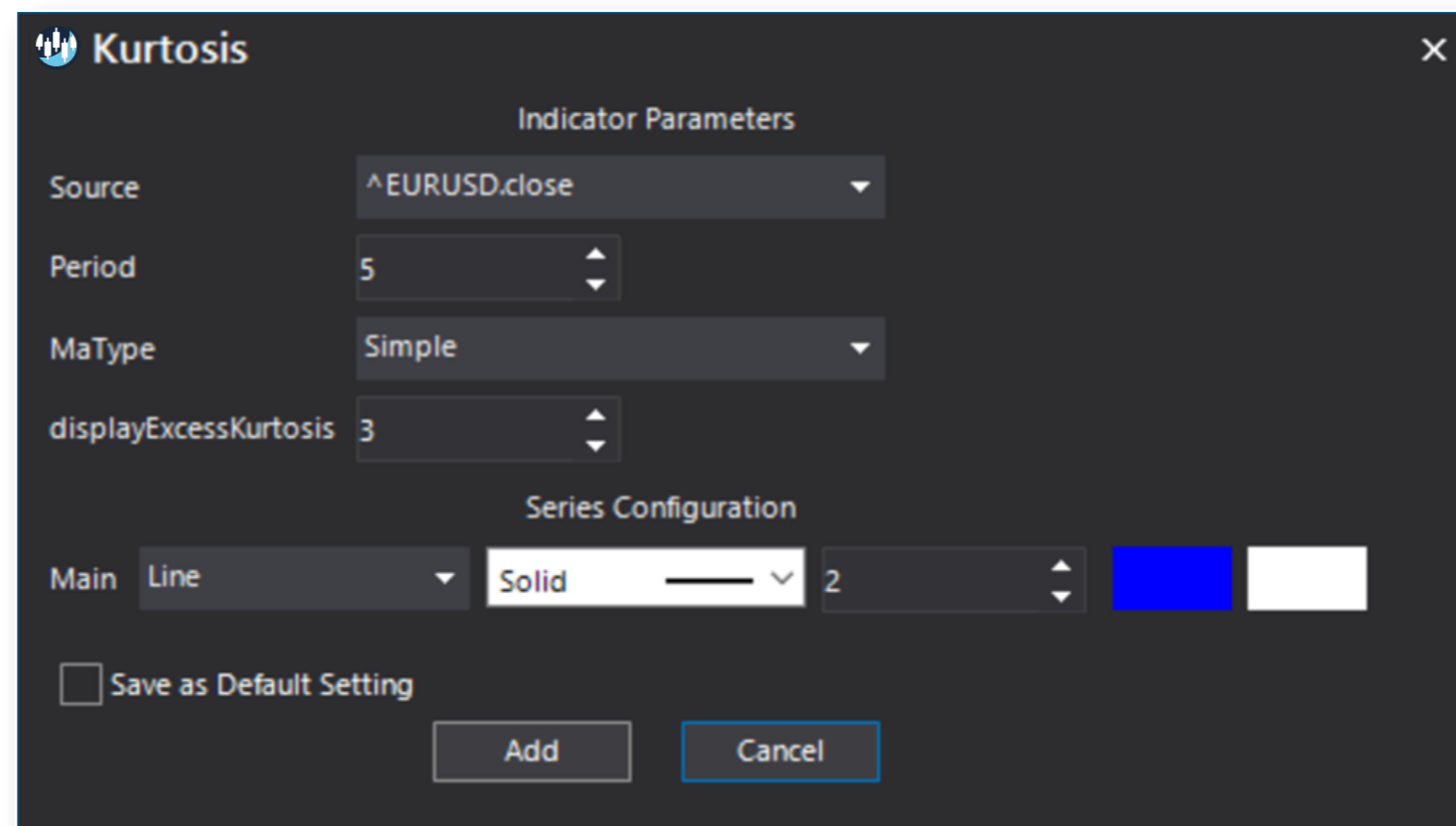


## Quant Script Syntax

<b>Short Form</b>	<i>KURT</i> (Source, Periods, MA Type, Display As Excess Kurtosis)
<b>Long Form</b>	<i>Kurtosis</i> (Source, Periods, MA Type, Display As Excess Kurtosis)

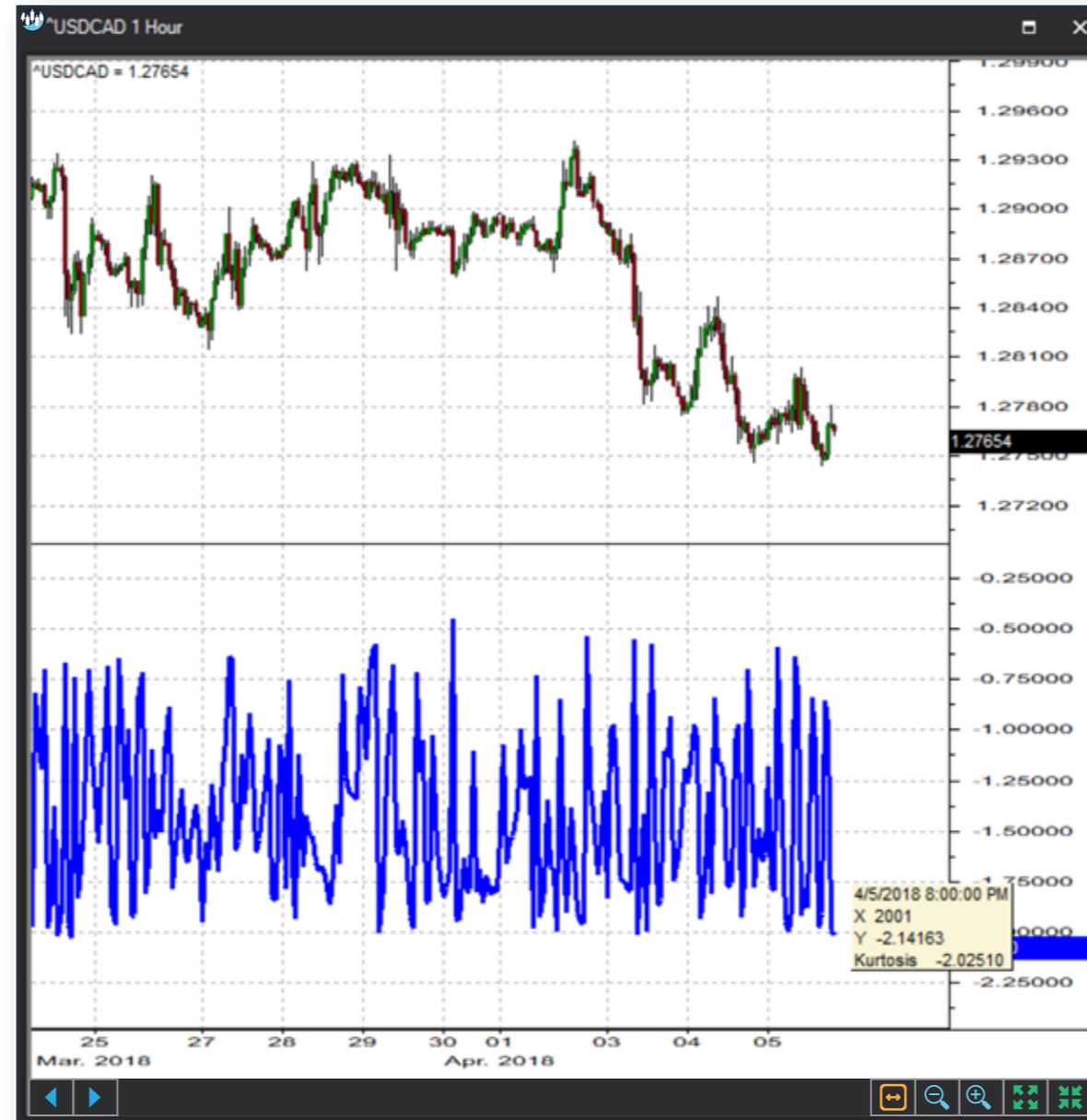
## Dialogs

### Chart Study Dialog





## Sample Chart With Study





## Quant Script™ Wizard Study Dialog

The image shows two overlapping dialog boxes in the S-Trader desktop platform. The 'Custom Study Wizard' dialog is on the left, and the 'Add Variable' dialog is on the right.

**Custom Study Wizard**

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

**Add Variable**

- Name: [Empty text box]
- Description: [Empty text box]
- Variable List: CorrelationAnalysis, KURT, Kurtosis, MedianPrice, MP, SDV, SERR, SKEW, SKEWNESS, StandardDeviations, StandardError, TP, TypicalPrice, WC, WeightedClose, SVA Functions, Trend Indicators, Volatility
- Parameters: Source (CLOSE), Period (5), MaType (Simple), displayExcessKurtosis (3)
- Button: Create Script Line
- Preview: Kurtosis(CLOSE, 5, Simple, 3)
- Buttons: OK, Cancel



## Quant Script™ Study Dialog

**Custom Study Editor** [Close]

Save To Group: 7\_STATISTICS [Dropdown] A 14.25 [Dropdown]

Custom Study Name: KURT

Password: [Empty]

Result: Line [Dropdown] Solid [Dropdown] 2 [Spinner] [Color Picker]

Reverse\_Result: Line [Dropdown] Solid [Dropdown] 2 [Spinner] [Color Picker]

Formula Add To New Panel

```
SET RESULT = KURT(CLOSE, 5, SIMPLE, 3)
SET REVERSE_RESULT = Kurtosis(CLOSE, 5, SIMPLE, 3)
```

[OK] [Cancel]