



S-Trader





VMA | Variable Moving Average

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Description

A major flaw in all forms of moving averages is that, they are unable to function properly and predict the future trends when periods of trending and non-trending market activity succeed one another. Similarly, when moving averages are set over a longer period of time, moving averages are unable to respond to trend reversals. This leads to unreliable trade signals.

The Variable Moving Average (VMA) distinguishes itself from the other moving averages on the basis of sensitivity. The VMA functions far better than other moving averages because it adjusts its smoothing constant according to market conditions like Market Volatility. A Variable Moving Average (VMA) is in fact an Exponential Moving Average which automatically adjusts its smoothing constant on the basis of Market Volatility. The Sensitivity of the Variable Moving Average is directly proportional with the volatility of the data series under scrutiny.

The most common tool used to determine "Market Volatility" is a 9 Period Chande Momentum Oscillator. Chande presented the idea of using the Volatility Index to determine the smoothing period. In order to function properly, the Volatility Index must catch up the pace of the market trend. If it is highly trending, the Volatility Index must adjust its length to determine price trends of immense importance. An additional recent development in the CMO is the use of the Absolute CMO to determine the Volatility Index.

Formula

Step 1: Determine the level of market volatility and based on it the smoothing constant, n

Step 2: $VMA_n = [2/(n+1)] * \text{Volatility Index} * \text{Close} + [1 - 2/(n+1)] * \text{Volatility Index} * vMA_{n-1}$



Parameters

Source	Any price source (O, H, L, C, Vol, OI) or any other built-in or custom study
Periods	Any number of periods (for studying volatility to determine the smoothing constant, n)

Output value(s)

There is a single output value resulting from the formula, the Variable Moving Average.

Plot

The plot is an overlay inside the price series panel.

Quant Script™ Syntax

Short Form	<i>VMA</i> (Source, Periods)
Long Form	<i>VariableMovingAverage</i> (Source, Periods)



Dialogs

Chart Study Dialog

Variable MA

Indicator Parameters

Source @ESH18.close

Period 8

Series Configuration

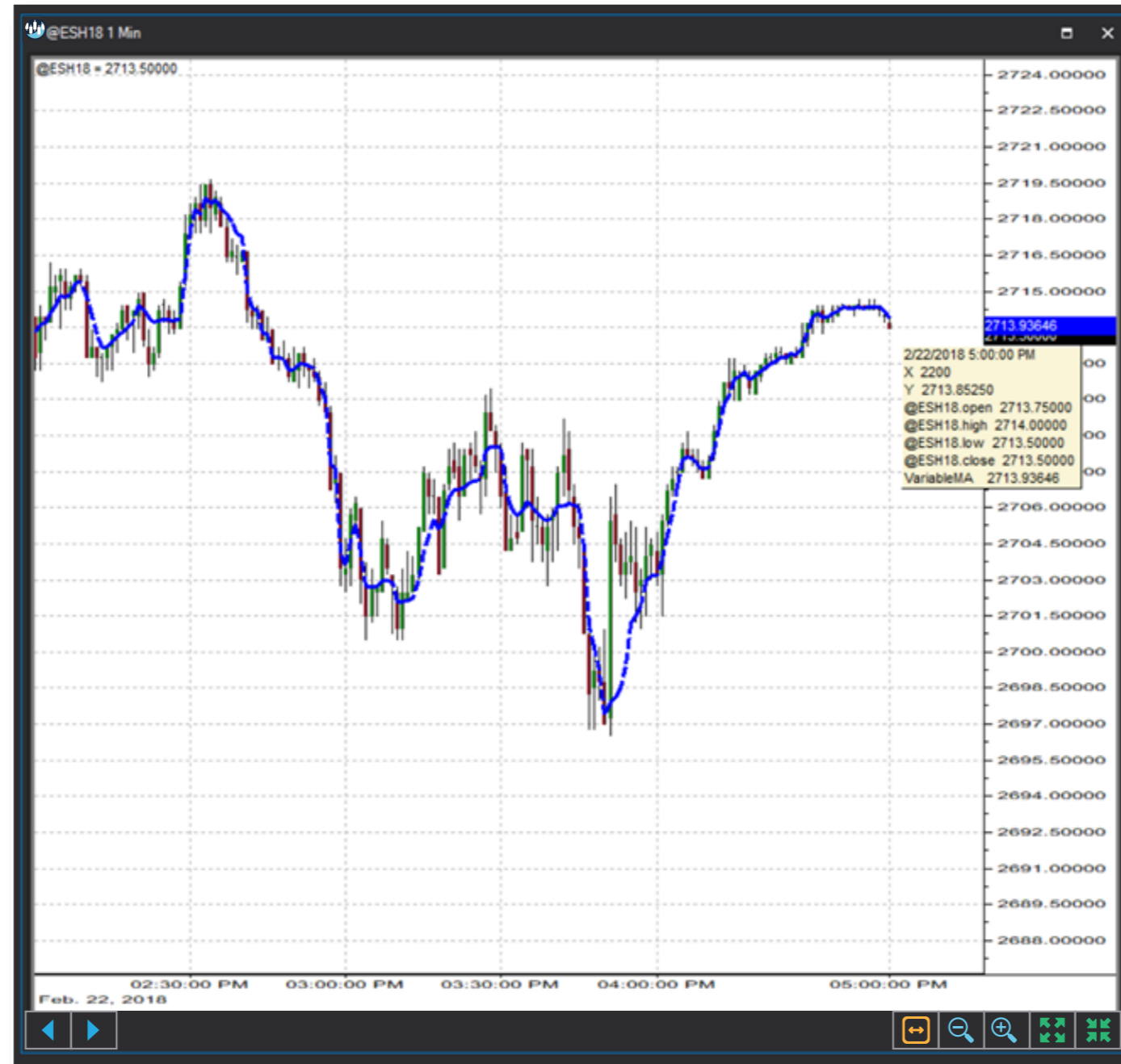
Main Line Dash 3

Save as Default Setting

Add Cancel



Sample Chart With Study





Quant Script™ Wizard Study Dialog

The image shows two overlapping dialog boxes from the S-Trader platform. The top dialog is the 'Custom Study Wizard' and the bottom one is the 'Add Variable' dialog.

Custom Study Wizard:

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

Add Variable:

- Name: [Empty text field]
- Description: [Empty text field]
- Tree view of categories: Envelopes, General Indicator Functions, Math Function - Algebraic, Math Function - Trigonometric, Moving Averages (expanded), VIDYA, VMA, VolumeWeightedMovingAverage
- Selected item: VariableMovingAverage
- Source: CLOSE
- Period: 8
- Button: Create Script Line
- Preview: VariableMovingAverage(CLOSE, 8)
- Buttons: OK, Cancel



Quant Script™ Study Dialog

Custom Study Editor

Save To Group: 1_MOVING_AVERAGES

Custom Study Name: VMA

Password:

Result: Line, DashDotDot, 2

Reverse_Result: Line, DashDot, 2

Formula: SET RESULT = VMA(CLOSE,8)
SET REVERSE_RESULT = VariableMovingAverage(CLOSE,8)

OK Cancel