

## [Linear Regression Acceleration](#) [1]

First, the data, based on the price selected, is smoothed using the moving average period and type. If you prefer no smoothing, choose a period of 1 here. The resulting data is then used to form regression lines ending at each bar, using the regression period specified. The linear regression acceleration of each bars regression line is then recorded as the change in slope of the regression line from the slope of the regression line of the previous bar. For instance, using the preferences specified above, the raw closing price would be used (smoothing period of 1). Then, using that resulting data, for each bar, we would use that bar and the previous 8 bars (9 total) to form a regression line. The LRA of that bar is then recorded as the difference between that regression lines slope and the slope of the regression line of the previous bar.. The same calculation is done for each bar and then plotted in the chart, as a histogram or a line.

If the "x 100 / Price (Normalize)" options is checked, then the resulting value will be the change in normalized slope per bar. This normalizes the data for the sake of comparison among instruments that trade in different price ranges. If you are interested in using this study to compare acceleration between instruments, it's important that this normalizing option be used. The difference between the normalized acceleration and the raw acceleration is similar to the difference between percent change (normalized), and change(unnormalized). If you're comparing two instruments, one that's trading at 200 and another that's trading at 10, then it's not fair to compare the change in price, although the normalized value of percent change does give us a fair basis of comparison.

The normalized acceleration value essentially gives us the change in the normalized slope of the regression (best fit) line, from bar to bar. If the normalized acceleration is 0.10, then the regression line normalized slope is rising at a rate of 0.10 per bar. Similarly, a normalized acceleration of -0.25 would indicate that the normalized slope of line that best fits the last N bars of data is falling at the rate of 0.25 per bar. For example, if the normalized slope of the last bar was 0.25 (meaning the regression line ending on that bar rises at a rate of 0.25% per bar on average), and the normalized slope of the current bar was 0.27, then the normalized acceleration of the current bar would  $0.27 - 0.25 = 0.02$ . A positive acceleration value does not equate to a positive slope, simply to an increasing slope. Similarly, a negative acceleration equates to a decreasing slope.

### **Presentation**



Above is a Daily Candlestick Chart of an Intel Corporation (INTC). The Linear Regression Acceleration (LRA) is drawn in histogram form in the lower chart pane. The LRA oscillates about the zero line.

See Also

- [Linear Regression](#) [2]
- [Linear Regression Forecast](#) [3]
- [Linear Regression Slope](#) [4]

## Preferences:

Price:

MA Type:

MA Period:

Regression Period:

☒  $\times 100 / \text{Price}$  (Normalize)

Histogram Colors..... Up  Dn

- **Price** -Price data to be used in computation.
- **MA Type** -Type of smoothing to be applied prior to regression.

- **MA Period** -Smoothing period to be used prior to regression.
- **Regression Period** -Number of bars to be used in computing the regression line.
- **x 100 / Price (Normalize)** -Option to normalize the resulting acceleration value. More details on normalization can be found in the description below.
- **Histogram Color** -Color of the resulting histogram in the chart. Up bars will be drawn in the first (Up) color, down bars will be drawn in the second (Dn) color.

## Formula Copy

Acceleration =  
 Change in Slope /  
 Bar = Slope -  
 Slope.1 Normalized  
 Acceleration =

## Related RTL Tokens

The RTL Token for Linear Regression Acceleration is LRA. If the normalize value is required, then check the "x 100 / Price (Normalize)" check box. This option is recommended for doing comparisons among indicators that don't trade in the same range. If the normalize check box is unchecked, then the result will be the raw acceleration value (Slope - Slope.1) of the regression lines. If it is checked, the result will be the normalized acceleration, or change in normalized slope, of the regression lines.

## Keyboard Adjustment

The periods involved in the LRA indicator can be adjusted directly from the keyboard without opening the preferences. Select the indicator, then use the up and down arrow keys to adjust the regression period up or down by 1. To adjust the MA period, hold down the shift-key while pressing the up and down arrows

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**Source URL:**<https://www.linnsoft.com/techind/linear-regression-acceleration>

### Links

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