Regression Lines

Linear regression is a statistical procedure that is used to predict future values from past values. In the case of security prices, it is commonly used to determine quantitatively the underlying trend and to project future prices.

Simply put, a Linear Regression trendline is a straight line through a series of data values that is drawn to represent an average of all the values. The least squares method is used to determine the line that best fits the data. In this method, the objective is to minimize the distances between the resulting line and the data values.

If you had to guess what a particular security's price would be tomorrow, a logical guess would be "fairly close to today's price." If prices are trending up, a better guess might be "fairly close to today's price with an upward bias." Linear regression analysis is the statistical confirmation of these logical assumptions.
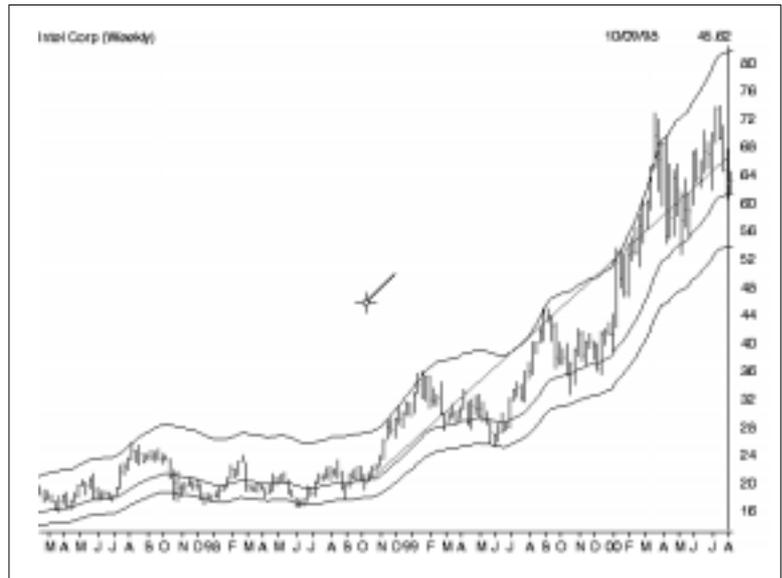
When drawing a Regression trendline on a chart, the user specifies the time interval which the trendline represents and the trendline is drawn using only those data values that fall within this interval. The trendline, which is displayed in the exact middle of the price data within the specified time interval, is always extended ahead in time to

the end of the chart. This allows you to easily determine if more recent price action is in line with or has deviated from a previously established trend.

If you think of this trendline as the "equilibrium" price, the price where buyers and sellers are in equilibrium, any move above or below the trendline indicates overzealous buyers or sellers. While prices may deviate above or below the equilibrium level for short periods of time, these excursions will only be temporary as long as the trend remains in effect. However, if prices remain significantly above or below the established trend for a long period of time, a reversal in trend may be imminent.

To create Regression Lines

❧ *To draw a Regression trendline on a chart:*

1. Display a chart of the ticker that you want to analyze with a Regression trendline.

2. Click the **Draw** command on the menu bar and from the drop-down menu select **Regression**. The arrow cursor will change to the Regression trendline drawing cursor.

3. Place the cursor at the point on the price chart where you would like the trendline to begin and press the left mouse button.

4. While continuing to hold down the button, move the cursor to the time period that you want the trendline to represent.

5. When you release the mouse button, a trendline will be automatically drawn. Although the line is extended all the way to the right, the position of the line is computed only from the data values lying between the two selected points.

6. To cancel the Regression drawing cursor and return to the normal arrow cursor, press the **Arrow** on the toolbar (to the left of the *Trendlines* toolbar button).
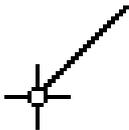
To edit Regression Lines

Regression Lines cannot be edited with the mouse but can be edited through the *Individual Properties* or *Edit* functions which allow you to enter revised *Start* and *End* dates for the line.

✦ *Edit a Regression Line in one of these two ways:*

1. Use the *Properties* function on the right-click menu to enter new start or end dates for the line.

   • With the <u>right</u> mouse button click anywhere on the regression line. This will both select the study and display a menu.

   • Select **Individual Properties** from this menu. A dialog box titled *Regression Line* is displayed. This dialog box displays the Start and End dates for the study.

   • To adjust the study, enter revised dates.

   • Click **OK** and the line will be automatically redrawn.

2. Use the *Edit* command on the *Draw* menu to enter new start and/or end dates for the line.

   • Click **Draw** on the menu bar, then **Edit** on the sub-menu. The *Edit Attributes* dialog box that appears lists all studies and other items that have been drawn on the displayed chart.

   • Select the Regression Line that you want to edit and click the **Edit** command at the bottom.

   • The next dialog box, *Regression Line,* lists the current Start and End dates for the study. To adjust the study, enter revised dates.

   • Click **OK** to return to *Edit Attributes* and click **OK** again. Based on the revised information, the study will be automatically redrawn.

To delete a Regression Line

To delete any type of study, selecting the **Delete** command from the right-click menu is the simplest approach.

✦ *To delete a Regression Line using the right-click menu:*

• With the <u>right</u> mouse button click anywhere on the Regression Line. This will both select the study (small black dots will appear on the Regression Line) and the right-click menu will appear.

• Select **Delete** from this menu. The selected study will be removed from the chart.

Alternative method for deleting a Regression Line

❧ *Delete a Regression Line from the Edit Attributes dialog box:*

1. Click **Draw** on the menu bar, then **Edit** on the sub-menu. The *Edit Attributes* dialog box that appears lists all studies and other items that have been drawn on the displayed chart.

2. Select the Regression Line that you want to delete and click the **Delete** command at the bottom.

3. When the *Edit Attributes* dialog box reappears, the Regression Line will be removed form the list of chart attributes.