Calculating a Beta Using Excel

Steps:

1. If you have price data first calculate returns using that data. You can use different periods to calculate return intervals. In other words, you can use daily, weekly, or monthly data to calculate returns for the purposes of estimating a beta.
2. Calculate returns for both a market-based index and the company. The most common market-based index is the S&P 500 but any market based index will do.
3. In Excel once the returns are calculated for the market index and the firm then place the return data in separate columns next to each other. It is best to put the returns for the market index in a column left of the returns for the individual firm (for the reason see the discussion in the steps below). If the returns for the market index are not in a column directly to the left of the returns for the firm you will not estimate the beta for firm correctly.
4. Once you have highlighted both columns go to the “Insert” tab in Excel and click on “Scatter” to graph a scatter chart. The type of scatter chart that is best for this is “Scatter with Only Markers.” This will create a scatter plot with the returns for the market index on the x axis and the corresponding returns for the firm on the y axis. You do not have to place the returns for the market index and firm next to each other. BUT if you don’t you will have to make sure that in the Scatter Plot that the y-axis represents the returns on the firm and the x-axis the returns for the market index. In other words, you need to be comfortable using the graph functions in Excel if you don’t follow the above instructions.
5. Once the Scatter Plot is done and the graph shows up in the spreadsheet then right click on the graph (best to right click on the center of the graph at the origin of the x-y axis). Then once the menu comes up select “Add Trend Line.” That will bring up a display titled “Format Trendline.” The default selections are what you need with one exception. You will want to select “Display Equation on Chart” in the menu. That will give you the equation with the beta for the company with the trendline and chart. The equation may get lost in the clutter of the plots of the returns in the chart so you may want to move it so you can see it better.
6. The beta is the coefficient of the x variable (which remember are the returns for the market). In other words it is the slope of the linear equation you have estimated for the scatter plot of points. This is why you need to have the returns for the market index as the x variable and the returns for the firm as the y variable. By default when you use the “Scatter Graph” function it graphs the returns in the left column you selected as the x variable and the returns to the right of that column as the y variable. That is why I said above you have to be careful of how you place the returns in columns. The intuition for what you are doing is you are estimating something like the equation for the CAPM (but not exactly)

RFirm = constant term + β×RMarket

The estimation technique you have used is referred to as ordinary least squares in statistics.