Assignment 14

Estimating Beta

The purpose of this assignment is to practice estimating beta for a company's stock.You will continue to work with the firm you have been following throughout the course. You will estimate beta using two different length windows of returns: 60 months and 36 months. These two window lengths correspond to what Yahoo! Finance and MSN Money use.

Group:

Section:

1. Using the instructions on the next page, estimate beta over 60 months and 36 months separately.

Ticker		
60-month beta		(using regression technique)
36-month beta		(using regression technique)
60-month beta		(using covariance technique)
36-month beta		(using covariance technique)

Estimating Beta

To estimate the beta of a firm's stock:

1. Go to Yahoo! Finance
2. Type the stock's ticker symbol in the search box.
3. Select "Historical Prices".
4. Select "Monthly".
5. Change the dates so that you have the latest 61 months of data, then click "Get Prices".
6. At the bottom of the table select "Download to Spreadsheet" to save the file to your computer.
7. Repeat these steps for the ticker symbol ^GSPC to get the data for the S&P 500 (a proxy for the market portfolio). Make sure to include the "^".
8. Open both files in excel and combine them into a single spreadsheet.
9. The "Adjusted Close" heading from your stock is the closing price for the stock adjusted for dividends and splits so you can calculate monthly returns. Repeat this for the S&P 500 index to get the returns on the S&P 500. The formula for the return from month *t*-1 to *t* using adjusted prices is

$$r_t = \frac{P_t^{Adj.} - P_{t-1}^{Adj.}}{P_{t-1}^{Adj.}}$$

10. In excel, calculate the covariance between the company's stock return and the S&P 500 return using the function COVAR. This will create the numerator of the beta formula shown below. Use the STDEVP function to get the standard deviation of the S&P 500 return. Remember: you must square this standard deviation to get the variance, which is what you plug into the denominator of the beta formula shown below. Finally, plug these values into the beta formula:

$$\beta_i = \frac{\sigma_{i,m}}{\sigma_m^2}$$

10b. Alternatively, you can run a regression in excel to calculate beta. The excel function to calculate the coefficient from a simple linear regression is LINEST.