BFC3540 Week 6 Excel Spreadsheet –
Estimating Betas and the Security Market Line

Download the Excel File from the Week 6 Spreadsheet Material Folder and save it to your disk.

Open the Excel File. There are 2 worksheets (Name and Sheet2) in this workbook. The default worksheet when you open the file is **Name**.

You are given the rate of return on six securities and the Standard & Poor's 500 (SP500) portfolio between the years 1974 to 1983, and the variance-covariance matrix of the six securities.

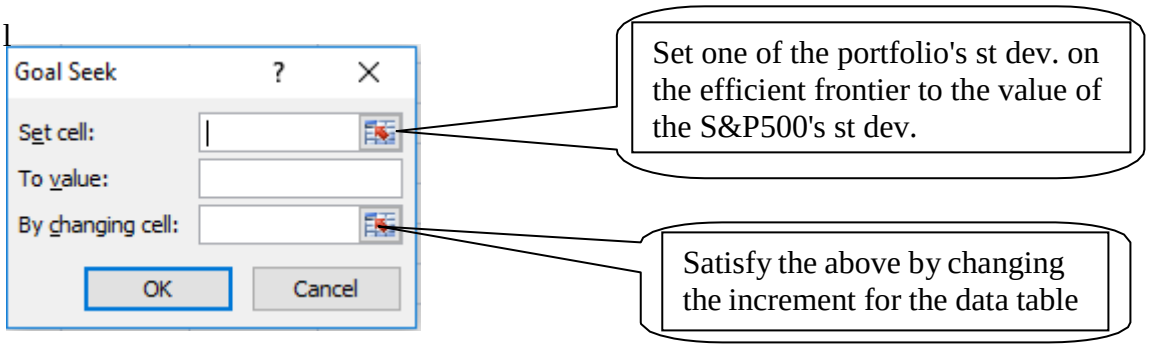
i. **Problem 1**: Find the mean and the beta of each security's return.

ii. **Problem 2**: Determine the equation of the Security Market Line equation using SP500 as the efficient portfolio two methods:
Excel functions: INTERCEPT(), SLOPE() and RSQ()
Excel's Regression Analysis Tool

iii. **Problem 3**: Calculate the mean and standard deviation of the SP500.

iv. **Problem 4**: Assuming the risk free rates, c = 0 and c = 0.1, derive the two efficient portfolios (x and y) in this six-assets model. Use these two portfolios to generate an efficient frontier for the six companies.

v. **Problem 5**: Use Excel Goal Seek to manipulate the data table in part c so that one of the portfolio standard deviations is equal to the standard deviation of the SP500. Find the proportion of x and y of this portfolio. Select **Data>What if analysis>Goal Seek** to produce the Goal Seek dialog box and follow the instructions:



vi. **Problem 7**: Re-derive the Security Market Line using the "market portfolio". You need to calculate the composite of the "market portfolio" and the returns of the "market portfolio" in each of the years.