## Capital Asset Pricing Model (CAPM) & Linear Factor Models

`Market_Portfolio.xlsx` contains monthly nominal (net) returns for the market portfolio, expressed as a percentage. These returns cover the ten-year period from Jan 2004 through Dec 2013. Assume that the risk-free rate is 0.13% per month.

Market Model

→ Regress the monthly *excess* returns for each of the ten industry portfolios on the monthly *excess* returns for the market portfolio, so as to estimate the intercept coefficient (α) and slope coefficient (β) for each of the ten industry portfolios.

→ Create a table showing the intercept and slope coefficients for the ten industry portfolios.

→ Briefly explain the economic significance of the intercept and slope coefficients.

Security Market Line (SML)

→ Calculate the mean monthly return for each of the ten industry portfolios, as well as the market portfolio.

→ Regress the mean monthly returns of the ten industry portfolios and the market portfolio on the corresponding β (by construction, the market portfolio has β of one). This will give you the intercept and slope coefficients for the SML. (Warning: the results may be very different from what you would expect!)

→ Using the estimated intercept and slope coefficients for the SML, plot the SML in the range of β from zero to two on the horizontal axis. Also plot the positions of the ten industry portfolios and the market portfolio. (You are NOT required to label the individual portfolios.)

→ Briefly explain the economic significance of the SML.

Please compile your results (including graphs and qualitative discussion of economic significance) and programming code into an Adobe PDF or Microsoft Word file. Please submit this file (without compression) to the submission folder for Homework 2 before Monday, 27 Sep.