5th set GAUSS assignments Financial Econometrics

Plot the average realized return vs. predicted return

1. Estimate the Fama/French Three Factor Model as well as the Consumption Based Model with GMM using the return data set from the last assignments. Save the estimated parameters.

2. The predicted returns R^i for each return decile can be calculated from

$$E(R^i) = \frac{1 - cov(m, R^i)}{E(m)}.$$

First calculate the series of the stochastic discount factor using the estimated parameters for each model. Calculate the expected mean return for each return series (i.e. each decile) according to the formula above. Hint: A loop and the Gauss command `vcx` might be of use.

3. Calculate the realized mean returns $\bar{R}^i$ for each decile and collect them in a vector. Plot the realized mean returns on the x-axis versus the predicted mean returns on the y-axis (use percentage returns, i.e., substract one and multiply by 100). Draw an additional 45° line to provide an illustration how well the model fits the data. Plot both graphs into one window. Also label the graphs and axis and use the same tick marks for both graphs to make them comparable. Hint: The pgraph globals `pline`, `xtics`, `ytics`, as well as the command `window` might be of help. Have a look into the User Guide for details on graphics!

This assignment can be handed in for grading until 9th Dec. 2008.
If you want to hand in this assignment for grading, include a pdf file (beside your program code) that shortly describes the procedures. Describe the main features of the two models CBM and Fama/French and interpret the graph.
Send your program code and the pdf file to franziska-julia.peter@uni-tuebingen.de