University of Sydney

Business Analytics

QBUS6830: Financial Time Series and Forecasting
Semester 1, 2019

Lab Tutorial Sheet 2

Q1 (Single factor CAPM) Get the Kenneth French data on factors and 5 industry portfolios (value-weighted) on a MONTHLY frequency from the files `F-F_Research_Data_Factors.txt` and `5_Industry_Portfolios.txt`. The data files are on Canvas. Note that these data files contain Monthly and Annual data so you will have to scroll down to find and select the appropriate data set in each of the text files.

(a) Form the excess returns on each industry portfolio and the excess returns on the market. Plot the industry portfolio and market index excess returns over time. Find summary statistics for each of the six return series. Comment and discuss.

(b) Construct a scatterplot of each excess industry return against the excess market return series. Comment on the apparent relationships and on whether outliers may be a problem/issue.

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(c) Calculate the pairwise correlations between each industry and market return series. Test whether each is different to 0 (or not) at the 5% level.

(d) Fit the single factor CAPM to each excess industry return series and report the estimates as well as 95% intervals for each estimate. Briefly comment.

(e) Discuss whether the assumptions made in these analyses might be valid or not. In particular, are outliers an issue or problem in any of these data sets?

(f) Report on how well and how strongly the CAPM fits each industry portfolio data set.

(g) Assess whether each industry could be classed as high, medium or low market risk. Provide a test or interval to support your conclusions.

(h) Are there any changes in conclusions from using daily data, as in lecture, to monthly data? Any other issues?
