PENN STATE UNIVERSITY
Department of Economics

Econ 597D Sec 001 Computational Economics	Gallant
Homework 8	Fall 2015
Due Nov 3, 2015	

Available at the course website http://www.aronaldg.org/courses/compecon by clicking on `Source Code` and then `ceh08` is file `industries.dat` containing daily value weighted returns on five industry portfolios from Kenneth French's website. A description of the data is in file `industries.txt`. The five industries are Cnsmr, Manuf, HiTec, Hlth, Other. The assignment is to analyze a pair of these industries using `SNP` and produce a plot of the conditional correlation of returns for the pair of industries for the decades 1970's, 1980's, 1990's, 2000's, that is, four separate plots. If you can get the four plots on one piece of paper, do so. If not, so be it. Figure 1, next page, is an example. Which pair of industries you analyze is determined by the month of your birth as follows:

Jan	Cnsmr & Manuf	Apr	Cnsmr & Other	Jul	Manuf & Other	Oct	Cnsmr & Manuf
Feb	Cnsmr & HiTec	May	Manuf & HiTec	Aug	HiTec & Hlth	Nov	Manuf & Hlth
Mar	Cnsmr & Hlth	Jun	Manuf & Hlth	Sep	HiTec & Other	Dec	Hlth & Other

This data set is large, 11,916 observations. Because the plots do not concern the 1960's, I suggest using all of the 1960's as initial lags; that is, 1,610 lags. Because the data set is large, you will have to use the parallel (MPI) version of `SNP` or you will be unlikely to finish this assignment by the due date. For guidance, review the tutorial section of the slides for the `SNP` lecture and read the *SNP User's Guide*. Scripts for running `SNP` under `MPI` are in the same directory as the data as is the code that produced Figure 1.

Turn in the aforementioned plots and a table that shows each `SNP` specification that you tried and the value of `BIC` for that specification. Make sure that the `SNP` run for each specification uses the full set of perturbations of the start value that are in the file `control.tpl`. Also, because the `BIC` "stars" in the `summary.dat` file are not reliable for parallel runs, inspect that file carefully to make sure that the fit you select is minimum `BIC`. The minimum `BIC` will be one of the "starred" values but it may not be the last of the "starred" values as it would be in a serial run.

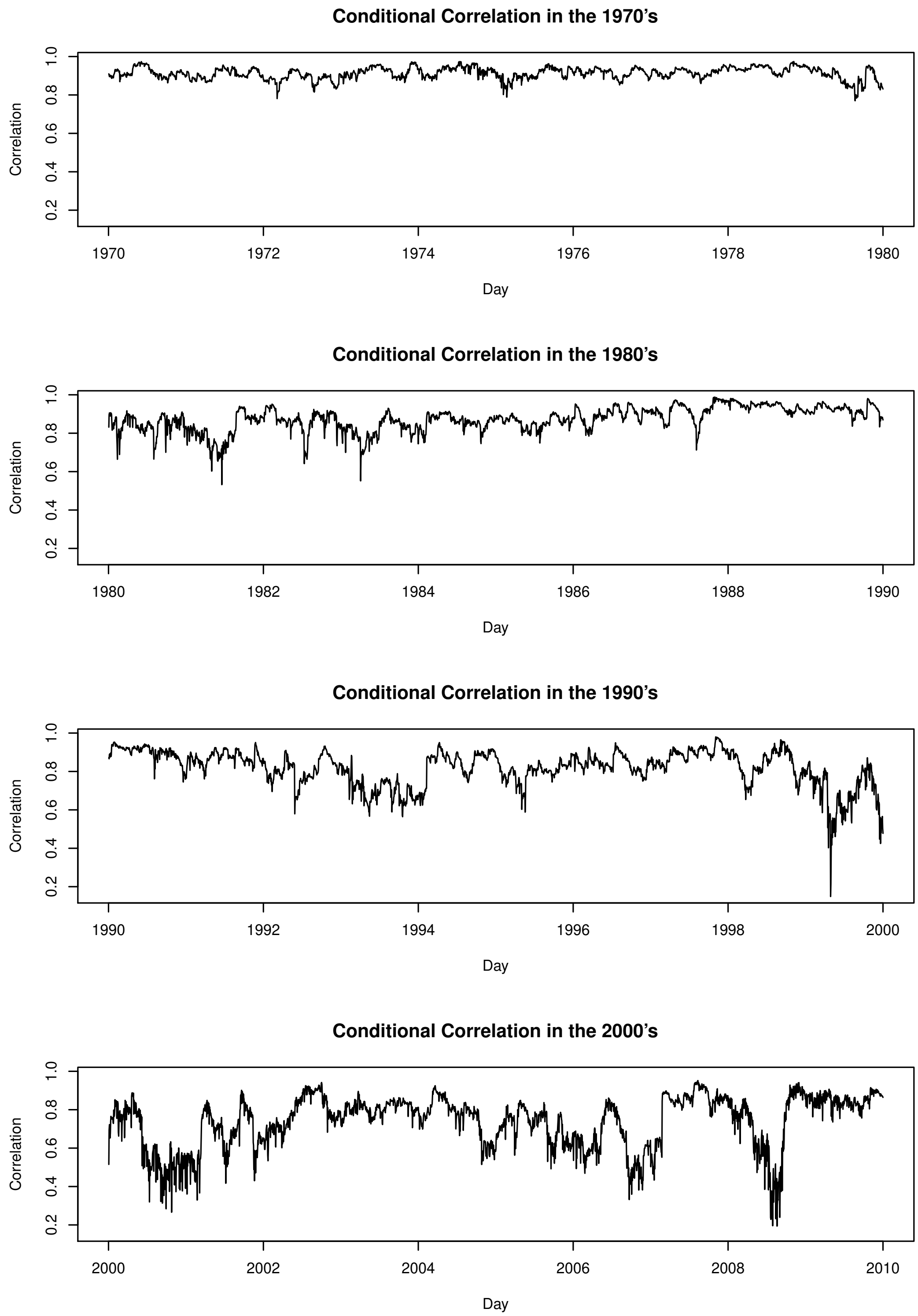

Figure 1. Daily Conditional Correlations. Shown are correlations between the returns on two industry portfolios, NAME_1 and NAME_2, conditional on the history of returns up to the previous day's trading. Correlation are computed from an SNP fit with tuning parameter settings `Lu=x`, `Lg=x`, `Qtype=x`, `Lr=x`, `Ptype=x`, `Lv=x`, `Vtype=x`, `Lw=x`, `Wtype=x`, `Lp=x`, `Kz=x`, `Iz=x`, `maxKz=x`, `maxIz=x`, `Kx=x`, `Ix=x`.