***EViews* Exercises for Chapter 13**

**EXAMPLE 13.1: The interaction of the UK bond and gilt markets**

This example uses the workfile interest\_rates.wf1. As before, it uses the first differences drs = d(rs) and dr20 = d(r20). To estimate a VAR, open the series drs and dr20 as a group and click ***Open VAR…***. The default settings fit a VAR(2) with a constant and this should be done. The material for Table 13.1 can then be obtained by clicking ***View/Lag Structure/Lag Length Criteria…*** and changing ‘Lags to Include’ to 4.

Clicking ***Estimate*** and changing ‘Lag Intervals for Endogenous’ to ‘1 1’ fits a VAR(1). Clicking ***View/Residual Tests/Correlograms*** then produces residual autocorrelation and residual cross-correlation graphs (or tables if selected), from which the significant second order residual autocorrelation of the dr20 equation may be observed.

Clicking ***Estimate*** and returning ‘Lag Intervals for Endogenous’ to ‘1 2’ obtains the VAR(2) fit again. On noting that the estimates of the intercept (c) in both equations are insignificant, repeating the estimation with c deleted as an Exogenous Variable will yield the estimates shown in the example. Various diagnostic checks can be applied with ***View/Residual Tests*** and selecting from the options list.

The Granger causality Wald statistics may be obtained with ***View/Lag Structure/Granger Causality/Block Exogeneity Tests***, while the contemporaneous correlation between the equation residuals is obtained with ***View/Residuals/Correlation Matrix***.

**EXAMPLE 13.2: Variance decomposition and innovation accounting for the bond and gilt markets**

The VMA coefficient matrices may be obtained from the VAR(2) by clicking ***View/Impulse Response…***, selecting ‘Table’ for ‘Display Format’, clicking ‘Impulse Definition’ and selecting ‘Residual - one unit’. The first row of is given by the period row of the ‘Response of DRS’ table. Similarly, the second row of the matrix is given by the period row of the ‘Response of DR20’ table. The estimated error covariance matrix is obtained with ***View/Residuals/Covariance Matrix***.

The Cholesky decomposition matrix **S** is obtained with ***View/Impulse Response*,** clicking ‘Impulse Definition’ and selecting ‘Cholesky – dof adjusted’. The first row of **S** is given by the period 1 row of the ‘Response of DRS’ table and the second row is given by the period 1 row of the ‘Response of DR20’ table. The elements of the are then obtained as before. The accumulated response functions are obtained by repeating the command but this time checking ‘Accumulated Responses’. Changing the ‘Cholesky Ordering’ to ‘dr20 drs’ will change the ordering of the series. Selecting the graphical representation of these impulse response functions will then provide the material for Figure 13.1. Repeating and selecting ‘Generalise Impulses’ as the ‘Impulse Definition’ will similarly provide the material for Figure 13.2. The variance decompositions shown in Figure 13.3 are obtained by clicking ***View/Variance Decomposition…***.

**EXAMPLE 13.3: Quenouille’s hog series example revisited**

This example uses the workfile Quenouille.wf1, which contains the series y1,…,y5 and the time trend t. Graphs of the five series are shown as Figure 13.4. Table 13.2 is constructed by opening y1,…,y5 as a group, clicking ***Open VAR…*** and including t as an additional exogenous variable. After estimation of the default VAR(2), now with a constant and trend included, clicking ***View/Lag Structure/Lag Length Criteria…*** and changing ‘Lags to Include’ to 6 will produce the necessary material for the table.

To fit the VAR(4) model, click ***Estimate***  and change ‘Lag intervals for Endogenous’ to ‘1 4’. The matrix can then be extracted from the table of estimates: the th column of being the th row of the table. Figure 13.5 is obtained by clicking ***View/Residual Tests/Correlogram…*** and choosing ‘6’ as the ‘Lags to include’. Figure 13.6 is obtained by clicking ***View/Lag Structure/AR Roots Graph***. The Granger causality statistics reported in Table 13.3 are obtained with ***View/Lag Structure/Granger Causality/Block Exogeneity Tests***, while the residual correlation matrix reported as Table 13.4 is obtained with ***View/Residuals/Correlation Matrix***.

To estimate the SVAR, click ***Proc/Estimate Structural Factorization…***. In the ‘Restriction Preset:’ drop-down list select ‘†Unknown variances (B diagonal)’, then click on the pattern matrix A and select ‘Manual’. Edit the matrix to read

and click OK to obtain the SVAR estimates and LR test statistic of the six overidentifying restrictions. Figures 13.7 and 13.8, showing the accumulated impulse responses and variance decompositions, may then be obtained in the usual way. The long-run restrictions may be imposed by again clicking ***Proc/Estimate Structural Factorization…***.and then clicking ‘Clear all’. Edit the A matrix to become an identity matrix and then edit the F matrix to be