Assignment 2

The data in Table17.1 in "Data" section of the website for Econ5025 contain the observations on two firms GE and WE.

1. Estimate two separate regressions by OLS for WE and GE and next estimate the SUR model for the two firms by feasible GLS. Comment on the differences between the two estimators.

2. Test the null hypothesis that the errors are uncorrelated across the equations (i.e errors of WE are uncorrelated with errors of GE) $H_0 : \sigma_{12} = 0$

3. Test the null hypothesis that jointly the coefficients of both equations are identical $H_0 : \{\beta 11 = \beta 21, \beta 12 = \beta 22, \beta 13 = \beta 23\}$

4. Estimate the SUR model with a block-diagonal variance matrix by feasible GLS and compare the results to the outcome of separate OLS regressions in 1.

5. Estimate the SUR model by feasible GLS under the restriction that all coefficients are identical. Compare the outcome of the joint test in 4 to the outcome of separate tests: $H_{01} : \beta 11 = \beta 21$, $H_{02} : \beta 12 = \beta 22$, $H_{03} : \beta 13 = \beta 23$.

6. Compare the outcomes of the two "proc print" commands in the code. What are the differences between the data matrices in the SUR and panel formats?

7. What model is estimated in the last part of the output: a fixed-effect model or a pooled regression? Justify your response by considering the test of fixed effects and the estimation outcome.