**FINM3123 Introduction to Econometrics**

**Solution to Quiz 3**

1. **Multiple choice questions (12 points):**
2. B
3. D
4. B
5. C
6. A
7. D

**II. Problems (48 points)**

1. The parts of the output unrelated to the dummy variables will not be affected, so I, J, K, and L are as in column (1). A = 0.321 – 0.198 = 0.123, C = 0.213 – (–0.198) = 0.411, E = –0.110 – (–0.198) = 0.088, G = 0.198, H = 0.058. B, D, and F cannot be determined.
   1. Since is binary variable, we know that Thus
   2. Thus
   3. depends on the value of , so is heteroskedastic.
   4. 1. Estimate the model by OLS and the fitted values
      2. Determine whether all of the fitted values are inside the unit interval. If so, proceed to step (3). If not, some adjustment is needed to bring all fitted values into the unit interval. One suggestion for the adjustment is to set if and if .
      3. Construct the estimated variances
      4. Estimate the model by WLS, using weight .
2. The F-statistic is equal to

Another way to compute it is to use the formulation:

They are equal up to float rounding errors (the exact value is ).

The critical value is .

Since , we cannot reject H0 “” at the 5% significance level. In other words, we cannot reject the assumption that the linear model of Regression 1 is homoskedastic, at the 5% critical level.