

## Exercise Sheet 4

### B203 Econometrics

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1. Find the critical values for testing hypotheses at the 90% and 95% level of significance for the case where you would use the Normal distribution.

Repeat the exercise for the case where you would use the  $t$  distribution having estimated a regression model with two parameters (intercept  $a$  and slope  $b$ ) for the following cases: observations 8, 14, 20, 100. Compare the critical values with those that you obtained for the Normal case above. What do you notice?

2. You have regressed consumption growth for households over 12 time periods ( $Y$ =change in log consumption denoted by  $\Delta \log C_t$ ) on a constant and the interest rate ( $X$  is the interest rate denoted by  $r_t$ ) and you have obtained the following result:

$$\Delta \log C_t = \underset{(0.008)}{0.02} + \underset{(0.41)}{0.83} r_t$$

The numbers in brackets are the standard errors of the estimates.

Provide a 95% confidence interval for the coefficient on the interest rate and for the intercept.

Test the hypothesis that the coefficient on the interest rate is 1.0. Use a 95% level of significance. Then use a 90% level of significance.

Test the hypothesis that the intercept is zero. Use a 95% level of significance. Then use a 90% level of significance.

**State any assumptions you are making about the model that are necessary to justify your hypothesis testing.**