Exercise Sheet 10

This exercise sheet is to be done prior to your Support and Feedback class. The Stata DO/R file, which you write as a group, should then be submitted by **one** of your group by e-mail to your designated marker by Monday 10am of Week 4 (Term 2). You MUST take the output generated from your Stata/R programme to your tutorial classes and be prepared to discuss your Stata DO/R script in class.

Use the dataset **condra long shaver wright 2018.dta**, which is taken from the replication files of "The Logic of Electoral Insurgent Violence" by Condra, Long, Shaver, and Wright, American Economic Review, 2018. The study looked at the issue of electoral violence in unstable democracies. Using data from Afghanistan, they examined the extent to which electoral violence discouraged voting at a presidential election.

(a) While one would never normally consider throwing away a lot of the information in a variable for this exercise sheet we use the variable $total\_v2\_agcho10$ to create a binary variable $vote\_h$ which is 1 when $total\_v2\_agcho10$ is at least at the 75th percentile and 0 otherwise.
Estimate equation (1) as a linear probability model

$$
\begin{aligned}
P(vote_h = 1) = &F(\alpha + \beta_1 df\_5to11_i + \beta_2 first_i + \beta_3 temp\_00Z_i + \beta_4 temp\_06Z_i + \\
&\beta_5 rain\_00Z_i + \beta_6 rain\_06Z_i)
\end{aligned}
\tag{1}
$$

where df_5to11 is the number of fire attacks between 5AM and 11AM on the day of election, $first$ is the indicator of the first-round election (the presidential election went to a second-round runoff), $temp\_00Z$, $temp\_06Z$ are the temperature measures on the day of election at different times (in Kelvin), and $rain\_00Z$, $rain\_06Z$ are the amount of rainfall on the day of election at different times (in millimeters).

(b) Estimate equation (2) as a logit model

$$
\begin{aligned}
P(vote\_h_i = 1) = F(\alpha &+ \beta_1 df\_5to11_i + \beta_2 first_i + \beta_3 temp\_00Z_i + \beta_4 temp\_06Z_i \\
&+ \beta_5 rain\_00Z_i + \beta_6 rain\_06Z_i)
\end{aligned}
\tag{2}
$$

(c) Using the appropriate marginal effects command in Stata/R calculate the average marginal effects (AME) of each of the variables in equation (2).

(d) Compare the marginal effects on the variables $first$ and $temp\_00Z$ in equation (1) with those estimated in equation (2).

(e) For equation (2) and using the appropriate built-in Stata/R commands work out the probability of being at or above the 75th percentile of voter turnouts, conditional on being a first-round election, with average values for all variables but when $temp\_00Z$ takes values between 260 and 300 going up in units of 4.

(f) Reproduce the AMEs found in (c) on the variables: $first$ and $temp\_00Z$ without using the programmed marginal effects command in Stata/R.

(g) Estimate the model in equation (2) using a probit model. Using appropriate commands in Stata/R calculate the AME of each of the variables.

(h) Reproduce the AMEs found in (g) on the variables: $first$ and $temp\_00Z$ without using the programmed marginal effects command in Stata/R.

NOTE:

Before you e-mail your Stata DO/R file to your class tutor:

 (i) Check the file runs all the way through from start to end without intervention from the marker.

 (ii) Annotate your Stata DO/R file with the appropriate question number to which your answer relates to help the marker understand what part of the DO file is answering which question.

 (iii) Ensure that your Stata DO/R file only contains the commands necessary to answer the questions from the exercise sheet.

Based on your understanding of the coding related to this exercise sheet which will be discussed in your class you will be given a mark out of 3. Failure to email the DO/R file by the indicated time will result in an automatic mark of zero. Failure to follow the other instructions noted above might mean you losing marks on a particular exercise sheet.