MONASH University

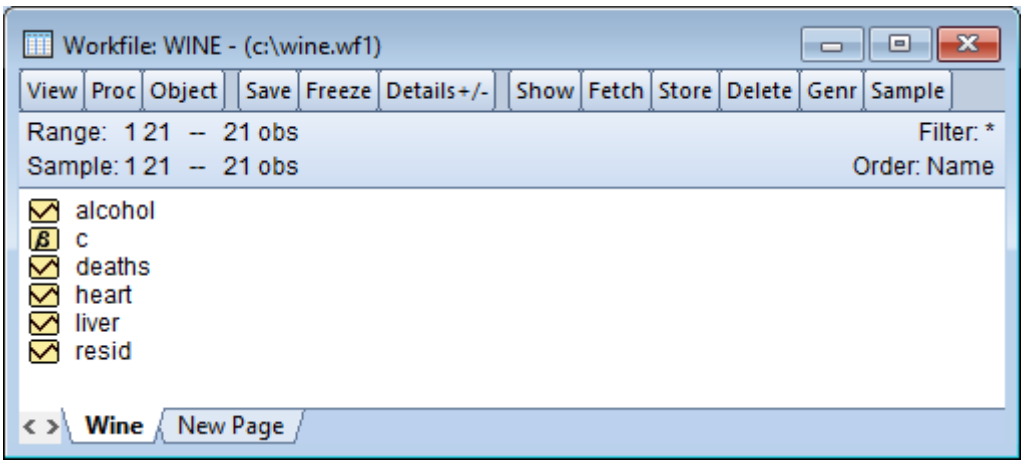
Department of Econometrics and Business Statistics
ETC2410 / ETC3440 / ETW2410 / ETS2410 Introductory Econometrics

Tutorial 1

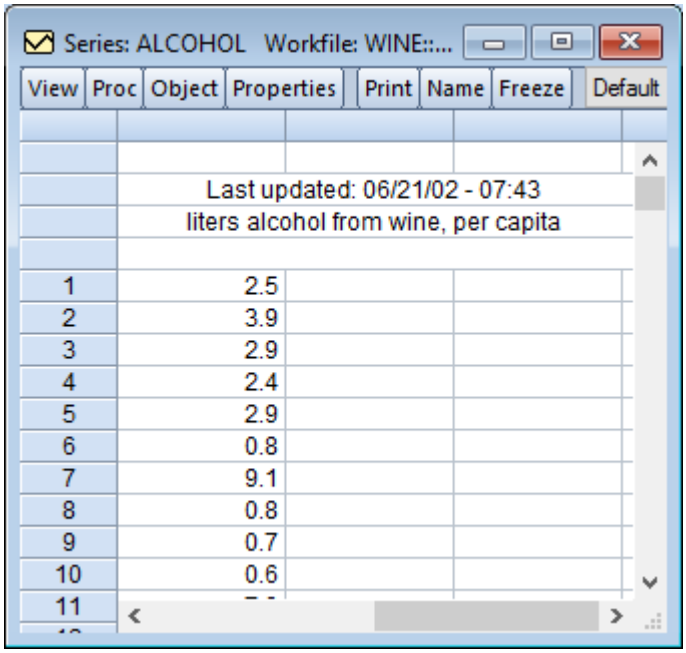
Learning the basics in EViews

The computer software you will be using throughout this unit is called EViews. EViews is a data analysis package that is designed specifically for econometric analysis. The following exercises will take you through some of the basic features of the program.

1. Download the ***wine.wf1*** data file from Moodle, save it, and then open it in EViews.



This workfile contains cross-sectional data for 21 countries on alcohol consumption (litres from wine per capita per annum), deaths (number of deaths per 100,000 of population), heart (number of deaths from heart disease per 100,000 of population), and liver (number of deaths from liver disease per 100,000 of population).



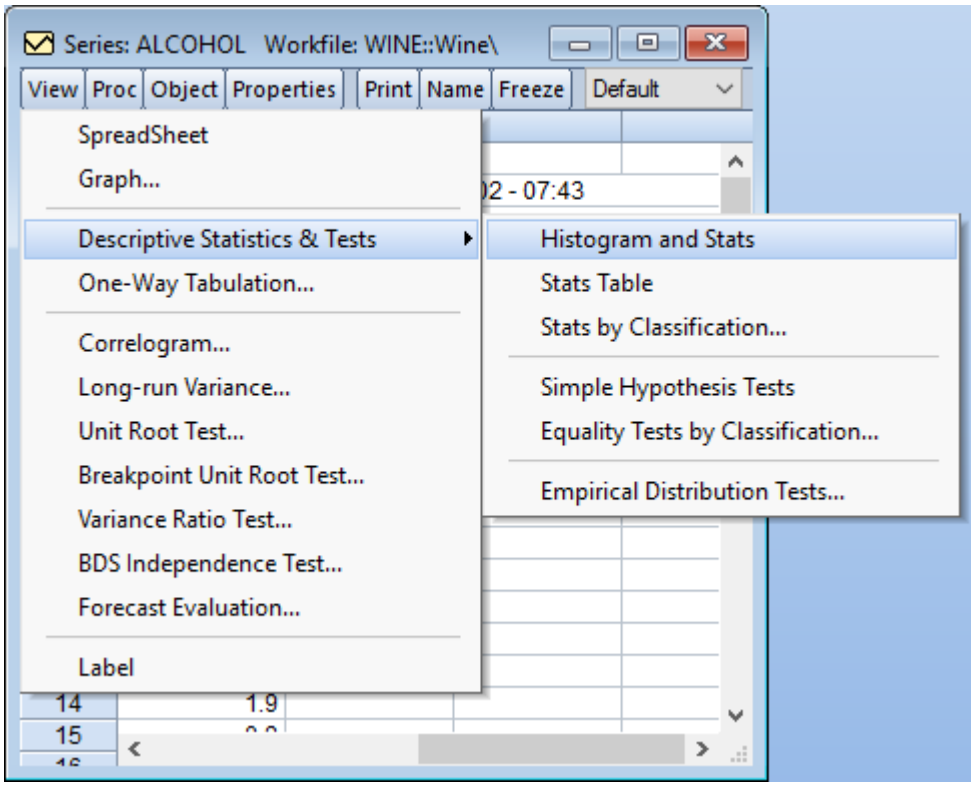
Variables appear in the centre of your workfile window with the series icon next to it. You can view details of each variable, such as the units they are measured in, by clicking on the ***Details +/-*** button.

Double click each variable to have a closer look at the observations. Each variable is represented as a column of data in a spreadsheet (or matrix as you will learn later in the unit), called a series.

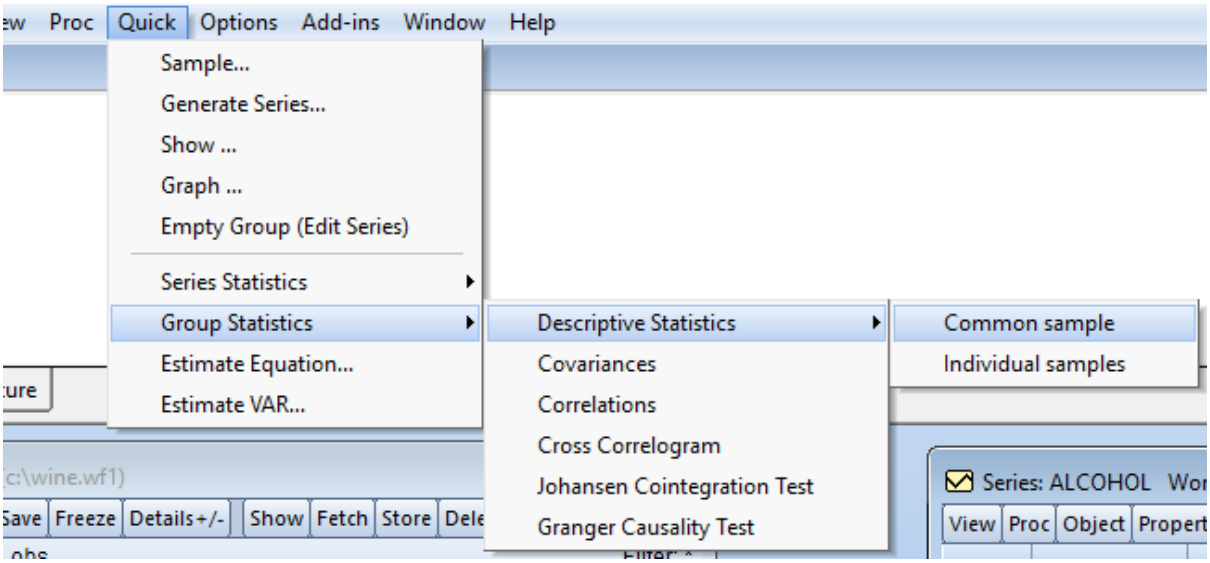
Notice ***resid*** contains NAs instead of numbers. This variable stores the residuals from the last regression estimated in EViews. Since we haven't estimated anything yet, it is empty. Also notice the ***c*** object has a different icon which represents a set of coefficients (called a coefficient vector) and is not a variable. This stores the coefficients from the last regression estimated in EViews. Both ***resid*** and ***c*** appear in every workfile by default. We will use these later when analysing our regressions, but for now we don't need to worry about them when checking our data.

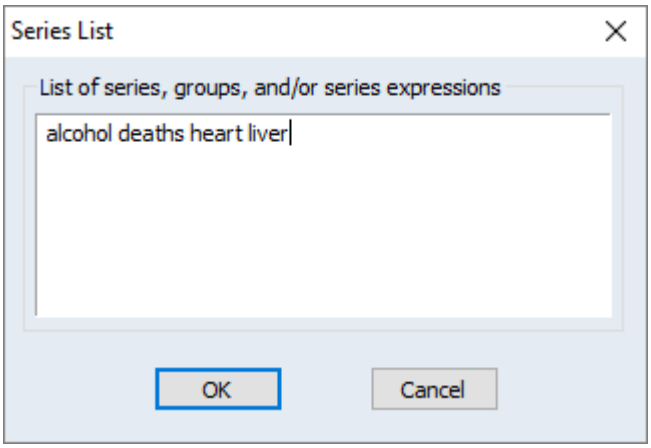
2. Get a histogram and descriptive statistics for the variables ***deaths***, ***alcohol***, ***heart*** and ***liver***.

   To get a histogram and descriptive statistics, double click on each variable to open it and then click ***View*** → ***Descriptive Statistics & Tests*** → ***Histogram and Stats***. Note here that you also have the option to obtain the descriptive statistics without a histogram (***Stats Table***) or to get separate statistics for different groups of observations (***Stats by Classification…***).

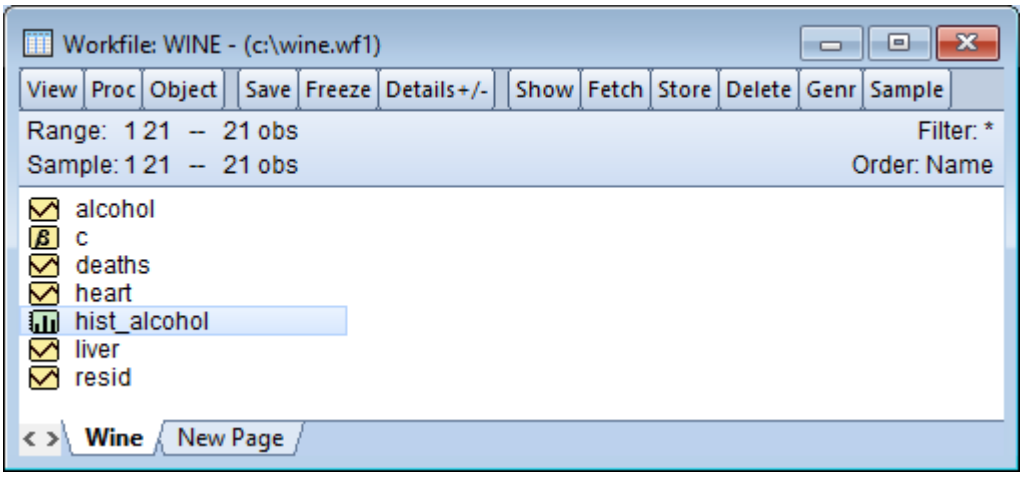


   To save time, you can also do this for all four variables at once, instead of one-by-one, by selecting ***Quick*** → ***Group Statistics*** → ***Descriptive Stats*** → ***Common Sample***. Then type in the names of the variables you want statistics for in the ***Series List*** dialog box.





You can save any output that you create to your workfile for later access (handy when doing your assignments!). To save the histograms, first click the ***Freeze*** button, which will take a screenshot of your output and open it up as a new object. Click ***Name*** and give your graph a name (e.g. hist_alcohol). You should now see it has been added to your workfile window with the graph icon next to it. If you only obtained the statistics, your output will be added with a table icon next to it.

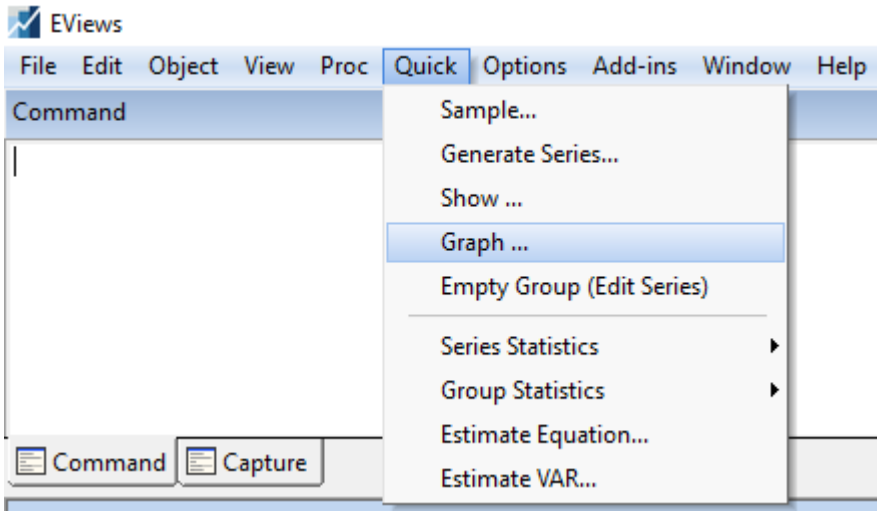


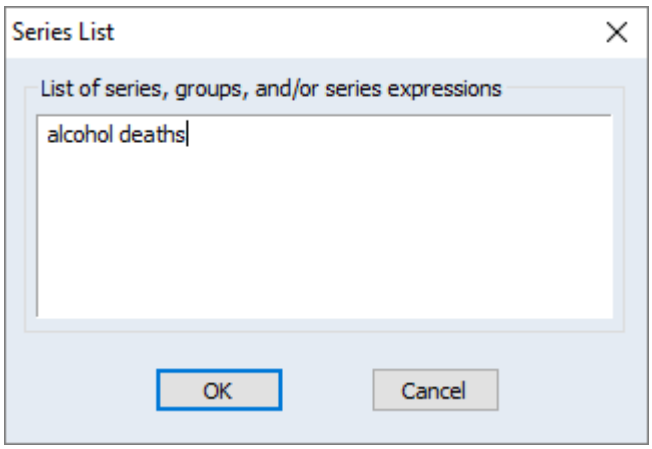
HANDY TIP: It is important not to change the names of your variables!

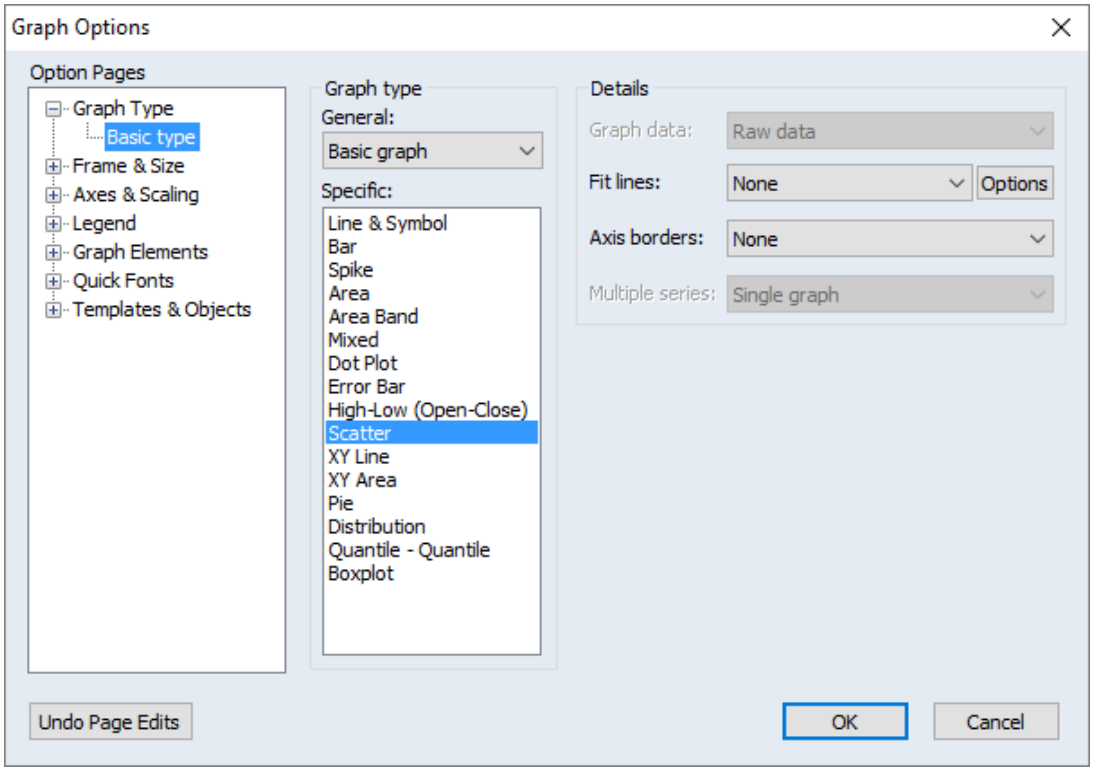
There are two ways of saving your output to your workfile. When you want to keep anything that appears in a box, check the top to see if it already has a name. If it says "UNTITLED" you can ***Name*** it straight away without having to ***Freeze*** it. If it does have a name, you will need to ***Freeze*** the box first and then ***Name*** the new box that pops up. Also note that you can't use spaces when naming objects in your workfile but you can use an underscore.

3. Create a scatterplot with ***deaths*** on the y-axis and ***alcohol*** on the x-axis. Obtain the corresponding correlation coefficient in EViews and save both to your workfile.

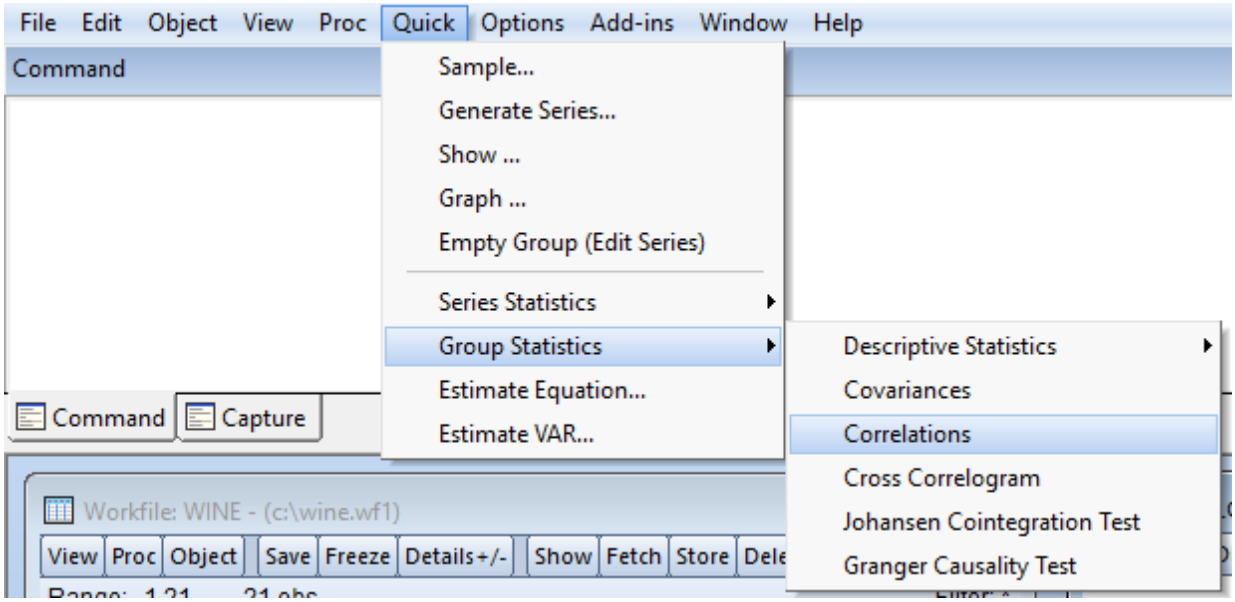
   To create a scatterplot, click ***Quick*** → ***Graph…***. In the dialog box, first type in the variable to go on the x-axis and then the variable to go on the y-axis. That is, type "alcohol deaths" into the ***Series List*** dialog box. Then in the next dialog box select ***Scatter*** under ***Graph type*** and click ***OK***.







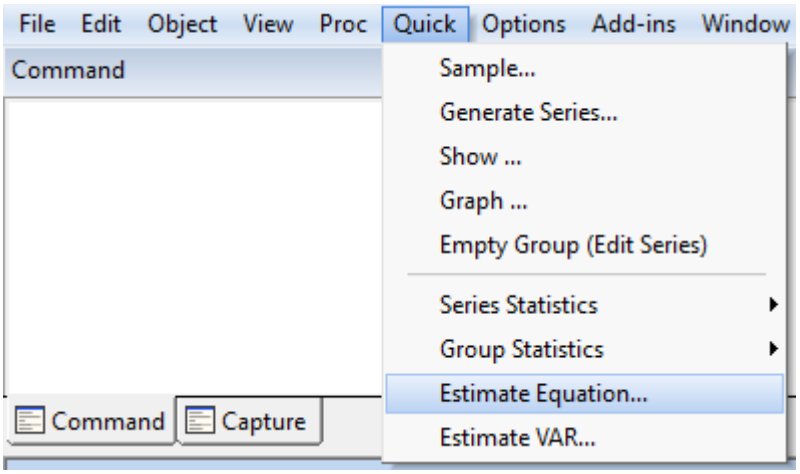
To get the correlation, click ***Quick*** → ***Group Statistics*** → ***Correlations***, then type in the list of variables you wish to get correlations for in the ***Series List*** dialog box (as before).

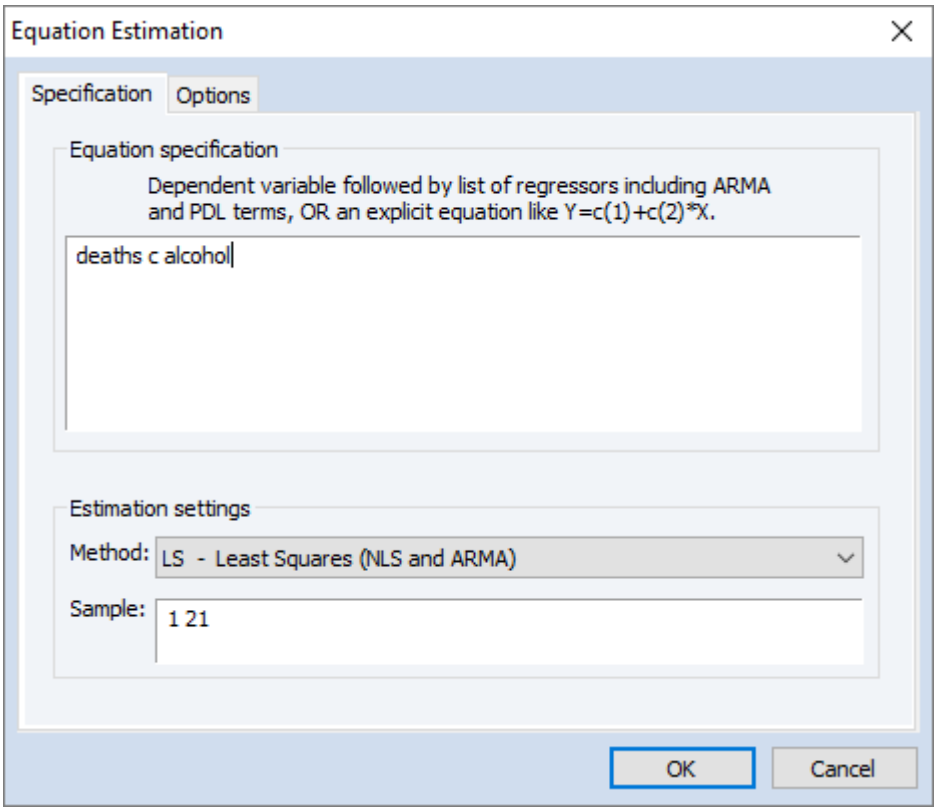


4. Estimate the following simple linear regression model:

$$deaths_i = \beta_0 + \beta_1 alcohol_i + u_i$$

To estimate an equation, click ***Quick*** → ***Estimate Equation…***. In the dialog box, first type in your dependent variable, then "c" for the intercept (constant) term, and then your explanatory variable(s). That is, type "deaths c alcohol" into the dialog box. Notice that we do not need to put = or + signs into EViews to create the equations.

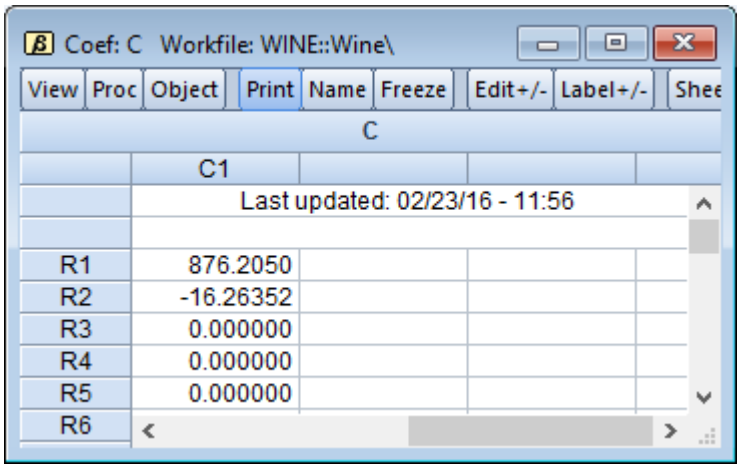




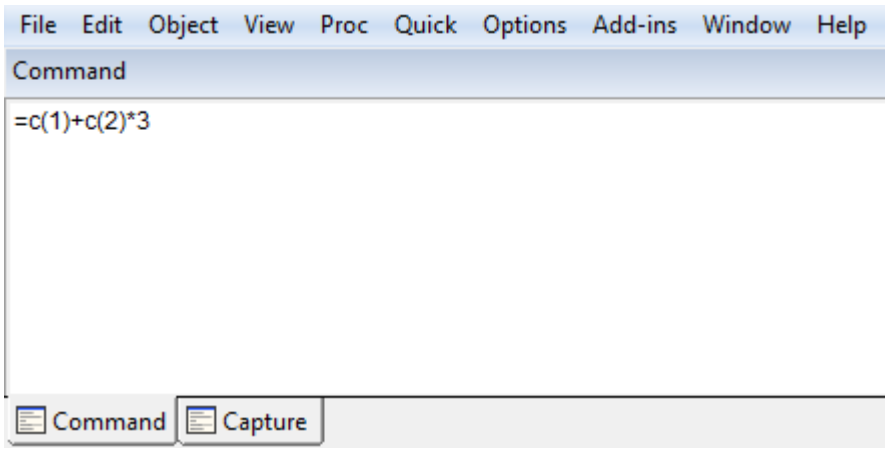
To save your equation, click ***Name*** (notice the title of the output window) and give your equation a name. You should now see your equation has been added to your workfile window with the equation icon next to it.

5. Predict the death rate of a country who consumes an average of 3L per capita.

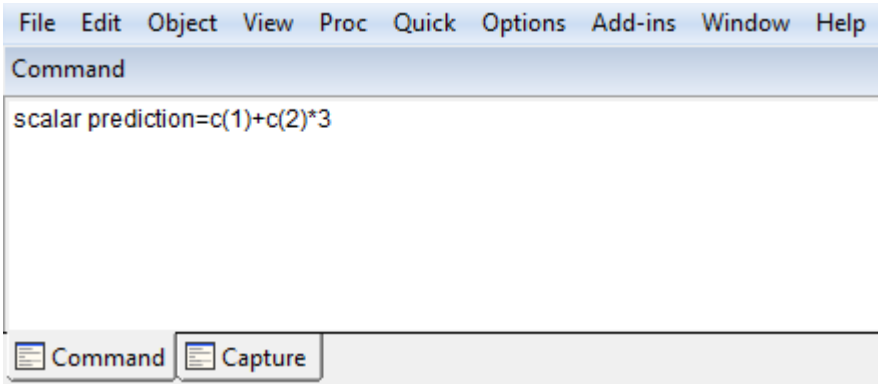
You can manually perform any calculations using the ***Command*** tab at the top of the EViews window using standard mathematical functions and some EViews specific functions. You could type in the numbers directly (beginning with the equals sign) however your prediction may suffer from rounding error. You can get a more accurate prediction by using the predefined coefficient object in EViews. Double click the ***c*** object and you'll notice that the coefficients estimated in your model have been saved here. The first number (i.e. the intercept) is identified by ***c(1)***, the second (i.e. the slope) is identified as ***c(2)*** and so on.

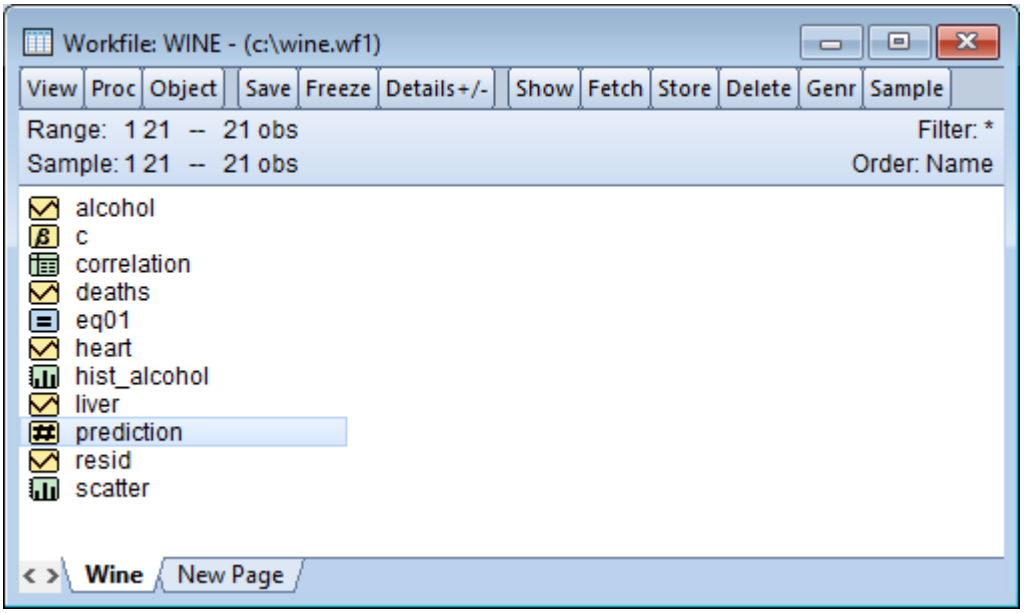


At the top of the command tab you can begin any calculation with an equals sign. Type the equation as you would in a calculator, but replacing the intercept and slope with ***c(1)*** and ***c(2)*** respectively. The answer will appear in the very bottom left corner of the EViews window.



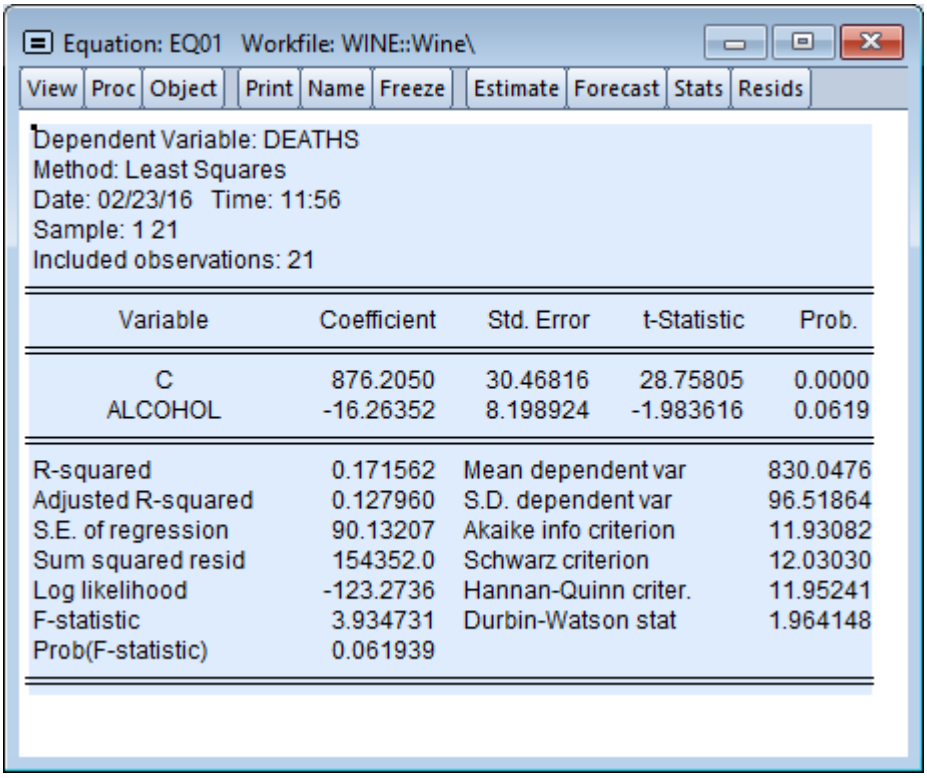
If you want to save your answer to your workfile you will need to type in “scalar” and then a name for the object before the equals sign.

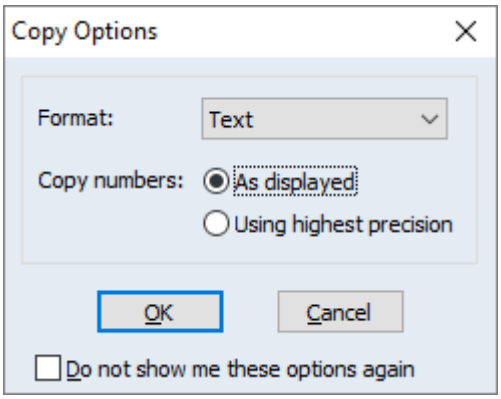




6. Copy and paste each of the outputs you obtained into a Word document

   For tables, you can simply drag your mouse from one corner of the table to the diagonal corner to highlight the entire table. Click CTRL + C (or ***Edit*** → ***Copy***), select ***As displayed***, then open your Word document and click CTRL + V (or ***Edit*** → ***Paste***). For graphs you can just click ***CTRL + C*** and then in Word click ***CTRL + V***.



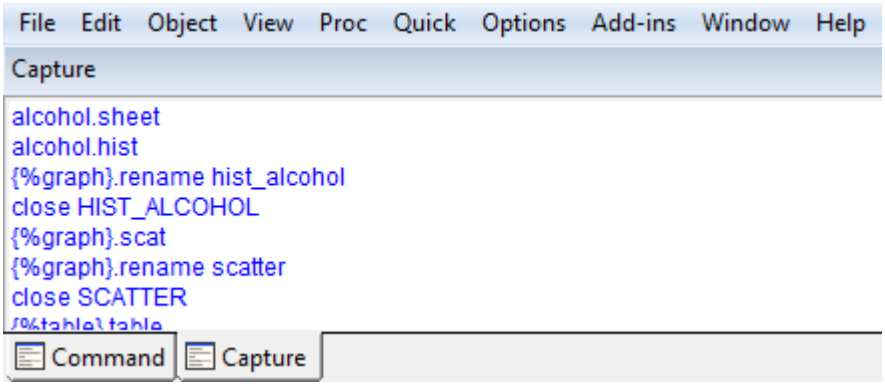


7. In groups of around 4 people, discuss each of the outputs you obtained above. What do you learn about the impact of alcohol consumption on the death rate? How could you improve your analysis?

Home Study Exercises

1. Repeat the above exercises using ***heart*** and ***liver*** as the dependent variables.

   If you are feeling adventurous, you can attempt the exercises using the ***Command*** tab and a bit of EViews programming syntax. If you look at the ***Capture*** tab, you should see many lines of programming syntax which EViews has recorded each time you have performed a particular task. Have a go at matching up each line with which task you performed above and retype the relevant command in the ***Command*** tab for the new variables. You can also look up the programming syntax for any commands you wish to perform in the ***Help*** → ***PDF Docs*** → ***Command & Programming Ref*** (or the ***Quick Help Reference***) menu item.



2. Compare and contrast your results to those you obtained in the tutorial. Does alcohol consumption have the same effect on heart disease as it does on liver disease?