

1. The main window

When launching Eviews, your screen will look as in Figure 1. The **main menu** (“File”, “Edit”, “Objects”, etc.) is shown right below the title bar. Drop-down menus will appear when clicking an entry in this menu. Below the main menu is the **command window**, where you can type commands as an alternative to using the menus (see section 7). The **work area** is the grey area in the middle of your screen. When opening Eviews, the work area will be empty. When you load data into the programme, run regressions or make graphs for example, the results are shown in the work area. The **status line** at the bottom of the screen contains short messages (on the left) and (on the right) the default directory (this is where the programme looks for databases and workfiles) and the names of the database (DB) and workfile (WF) that are currently being used.

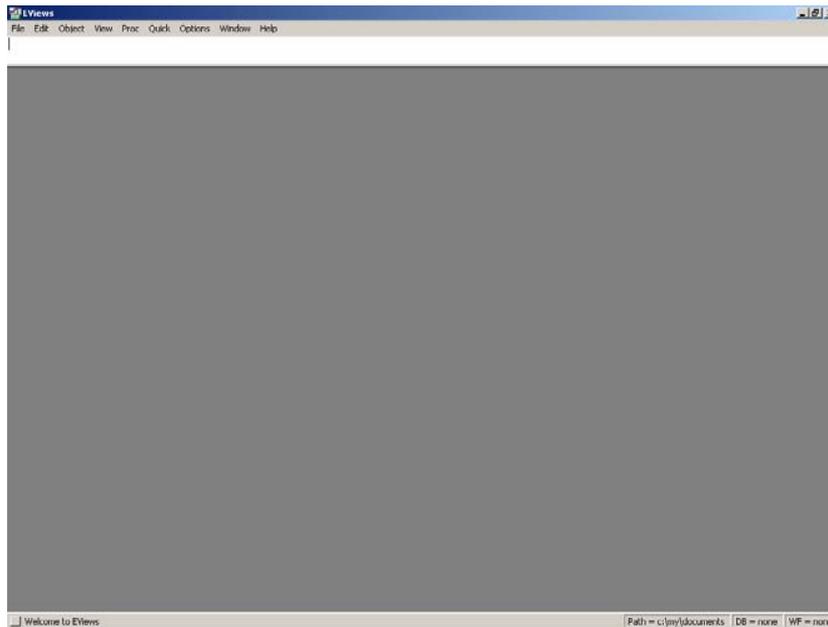


Figure 1: The opening window upon launching EViews

Of course, without data series this screen is almost empty. The next section describes how to load your data into Eviews and explains how to store it when you stop working.

2. Workfiles (.wf1)

EViews operates on objects stored in **workfiles** (with extension .wf1), much like Excel operates on data stored in .xls files. The workfile thus contains data series, graphs, equations, tables, etc. (the “objects”) and typically grows as your work proceeds.

The first task is to get the data that you wish to analyse into a workfile. This requires creating a new workfile or, if the workfile already exists, loading it into EViews.

2.1. Creating a new workfile and importing data

To create a new workfile, click “File”, “New”, “Workfile”. A window appears where you have to specify the type of data you wish to load into Eviews. For cross-sectional data, choose “unstructured/undated” and specify the number of observations. For time series, choose “Dated - regular frequency” and specify the frequency and the start and end dates according to the following rules:

- Annual data: specify the year. Years from 1930-2029 may be specified using either 2 or 4-digit identifiers (e.g. "97" or "1997"). All other years must be identified with 4-digit identifiers (e.g. "1776", "2040", "9789").
- Quarterly data: specify the year, followed by a colon or the letter "Q", and the quarter. Examples: "1992:1", "65:4", "2002Q3".
- Monthly data: specify the year, followed by a colon or the letter "M", and the month. Examples: "1956:1", "1990M1".
- For other frequencies, consult the Help function in the menu.

For panel data, choose “Balanced Panel”.

Figure 2 shows how this window should be filled in to prepare for importing the data from nerlove.xls.

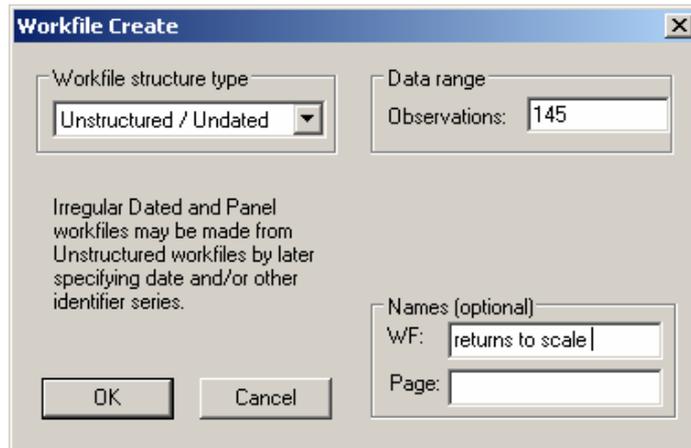


Figure 2: Specifying data properties

Upon clicking “OK”, a workfile named “returns to scale” is created and displayed in the work area (Figure 3). EViews automatically generates an object for the coefficient vector (c) and the series of residuals (resid). Before any equation is estimated, the residuals are 0 and the coefficient vector is “NA” (Not Available, used to indicate missing values). To open an object, double-click on it. A spreadsheet opens and displays the values of the object.

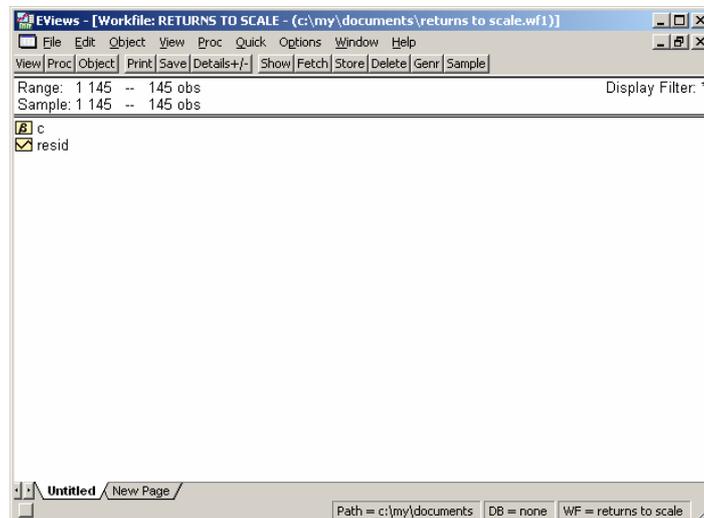


Figure 3: A newly created workfile

Once the workfile is created, the data series can be imported. To import data from an Excel file, click “File”, “Import”, “Read Text-Lotus-Excel”. The window in Figure 4 appears.

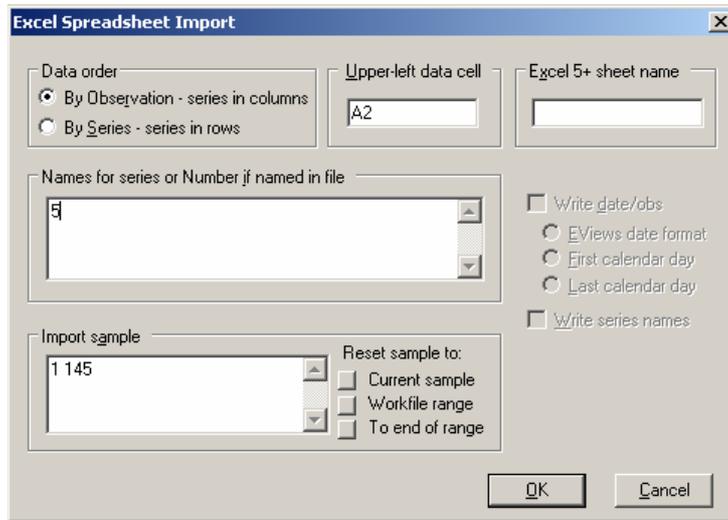


Figure 4: Specifying how to read data from an Excel file

Specify whether the series are in columns or in rows. Next, specify the location of the first data cell in the Excel file. In nerlove.xls this is cell A2, containing the first observation for the first variable (see Figure 5).

	A	B	C	D	E	F	G	H	I
1	TC	Q	PL	PF	PK				
2	0,082	2	2,09	17,9	183				
3	0,661	3	2,05	35,1	174				
4	0,990	4	2,05	35,1	171				
5	0,315	4	1,83	32,2	166				
6	0,197	5	2,12	28,6	233				
7	0,098	9	2,12	28,6	195				
8	0,949	11	1,98	35,5	206				
9	0,675	13	2,05	35,1	150				
10	0,525	13	2,19	29,1	155				
11	0,504	13	1,79	16,0	199				

Figure 5: The data set in Excel

Next, enter the complete list of names of the series in the order in which they appear in the Excel file or, if these names already appear in the Excel file - as in the example above - just specify the number of series (5 in this example). Click “OK”. Each series now appears as an object in the workfile (Figure 6). Important: Check whether the series have been imported correctly, by opening the series and inspecting their values.

Check in particular the first and the last observations. You can open multiple series at once by holding down “CTRL” while clicking on the series’ names. Then right-click and choose “Open as Group”.

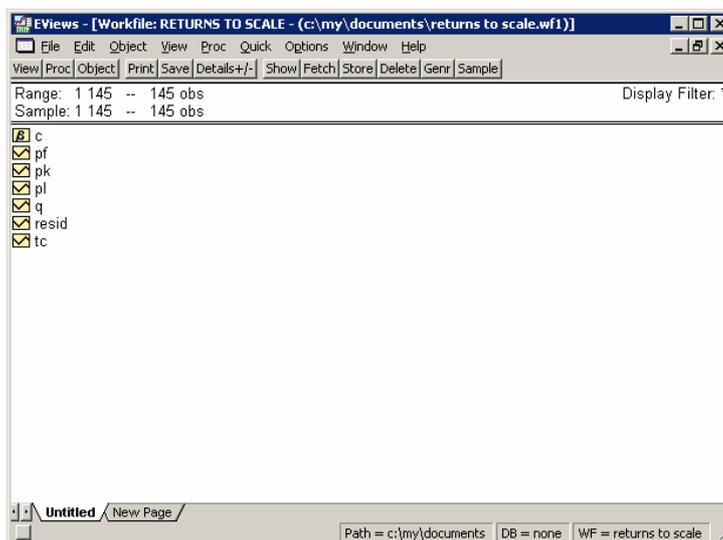


Figure 6: The workfile after importing data

You may need to repeatedly import data from external files, for example when you need data from more than one file, or when due to some error a series is corrupt. In the latter case, you can re-import that single series by specifying the first data cell of that series in the Excel file and specifying the name of that series or simply “1” if the name appears in the Excel file.

2.2. Saving and loading workfiles

It is important to realise that any changes you make to the workfile (such as importing data, creating new variables, estimating equations, etc.) only exist in the computer’s RAM and are lost when you leave EViews (although a warning appears) or when EViews crashes (unfortunately, this happens!). So it is a good idea to now and then save your workfile on your hard disk, for example after importing data. To save the workfile, click “File”, “Save” or “Save as” and choose a name.

An existing workfile can be loaded into EViews either by double-clicking on the file name (which will launch EViews) or, from inside EViews, by clicking “File”, “Open”, “EViews workfile” and selecting the workfile.

3. Manipulating data

After the data have been loaded into a workfile, the numerical values of the series can be altered manually and new series can be created, as functions of existing ones.

3.1. Editing data

The values of existing series can be altered after opening the series and clicking “Edit+/-” in the toolbar of the spreadsheet-like window. Deleting a value without specifying a new one will result in a missing value, denoted as “NA”.

Series can be renamed by right-clicking the series’ name and choosing “rename”. Use mnemonic names for variables, equations, files, etc. This will greatly facilitate your future work and help you keep an overview as the workfile increases in size. For example, rename the series tc, q, pl, pk and pf as total_cost, output, wage, rent and fuel, respectively. Also note that a group of series can be stored as an object in the workfile by opening the series as a group and selecting “Object”, “Name”. Specify a name for the group and click “OK”. In the example above, you can group all factor prices into a group named “cost_group”.

3.2. Creating new series

To create a new series as a function of existing ones, click “Genr” in the workfile toolbar. A window like the one shown below appears where you need to specify the equation for the new series. All standard mathematical operations, such as +, -, /, * and $\log(x)$, are allowed. For example, the factor price of labour relative to fuel (“rel_wage”) can be generated as follows:

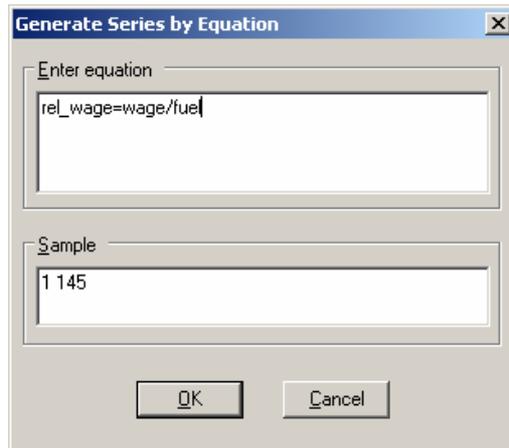


Figure 7: Creating new series

The “Sample” is the window of observations for which variables are generated, modified, etc. You can adjust this window when you want to limit the definition of the new series to a subset of the observations. Note that when you modify the “Sample”, future creation/modification of series will be under control of the new “Sample”.

4. Descriptive statistics and graphs

To obtain summary statistics of variables, select the series and choose “Open” or “Open as group” (for multiple series). In the toolbar of the spreadsheet that appears, select “View”, “Descriptive Statistics”. You can choose either just to view the statistics (select “Stats table”) or the statistics and the histogram (select “Histogram and stats”). An example is given in the left panel of Figure 8.

Graphing data is similar to displaying descriptive statistics. Open the series and select “View”, “Graph” or “Multiple Graph”. All common graphing options like scatter plots and pie charts are available. The right panel of Figure 8 gives an example.

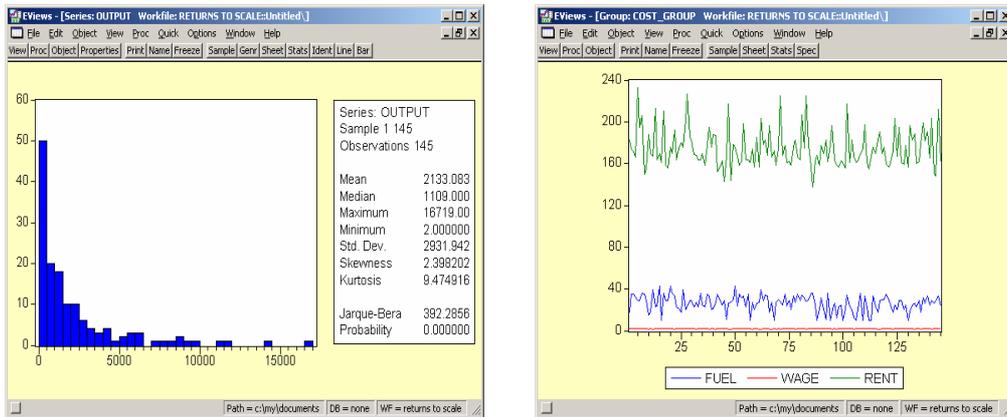


Figure 8: An example of a histogram and a line graph

5. Running regressions

To estimate an equation, click “Object”, “New object”, “Equation” in the toolbar of the workfile window. A window appears.

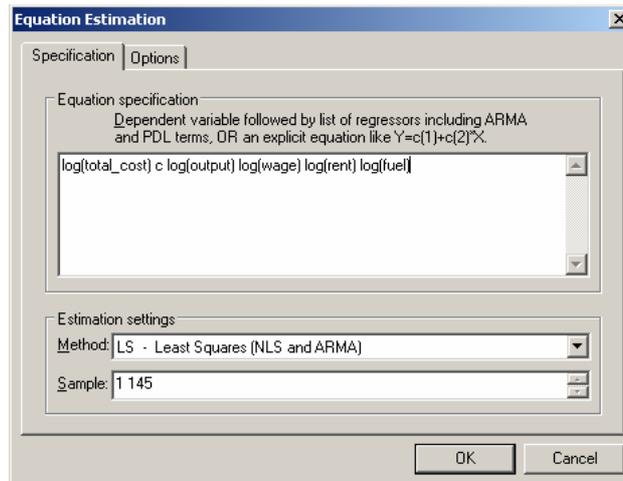


Figure 9: Specifying an equation

To specify a linear equation, type the dependent variable, followed by the list of regressors. Note that you must explicitly include the constant (predefined as c). Failing to include the constant amounts to regressing through the origin, which will cause estimates to be biased if the true constant term differs from zero.

A series can be lagged by appending “(-1)” to the name of the variable. For example, the regression of y on a constant, x and its lagged value would look like: $y = c + x + x(-1)$.

After typing the equation, select the estimation method (e.g. Ordinary Least Squares, Two Stage Least Squares, etc.) and specify the “Sample” (the observation window to be used for estimation). To obtain standard errors robust to heteroskedasticity and/or autocorrelation click “Options” and choose the desired method.

Figure 9 displays how the estimation window should be filled in for the returns to scale example. Click “OK” to estimate the coefficients (being elasticities in this case) Note that mathematical expressions can be used to define regressors and regressand. The estimation method for estimating the cost function is Ordinary Least Squares (LS) and coefficients will be estimated using all 145 observations available in the workfile. The regression output appears in a new window, given in Figure 10.

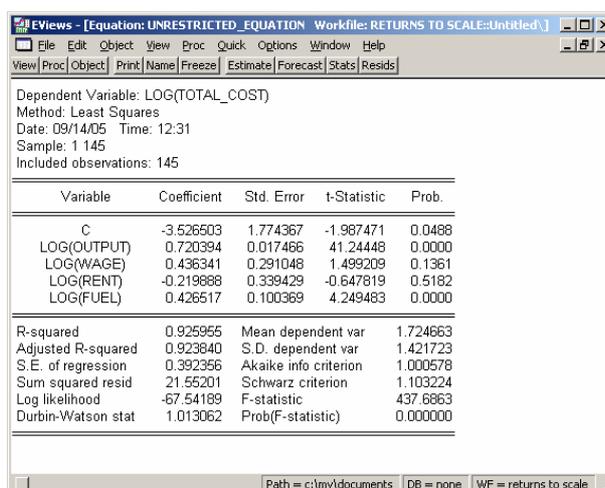


Figure 10: An example of regression output

The output window allows you to switch between e.g. the model specification, the regression output, a graphical representation of the fitted values and the variance-covariance matrix of the coefficient estimates. To get a graphical representation of the observations, fitted values and residuals, click “View”, “Actual, Fitted, Residual” and select the desired graph.

After estimating an equation, the object “c” contains the coefficient estimates and “resid” is the series of residuals. From here, it is a small step to look for heteroskedasticity or serial correlation in the error. To investigate potential heteroskedasticity, Figure 11 plots the residuals as a function of the logarithm of output. The figure reveals heteroskedasticity and non-linearity of the regression function.

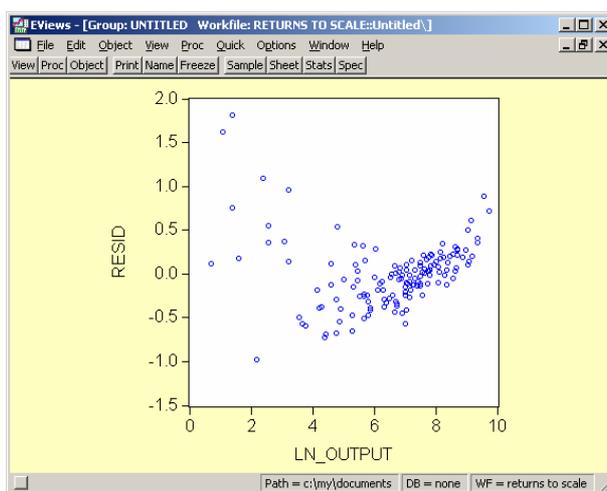


Figure 11: A residual plot

6. Testing Hypotheses

All menus for hypotheses testing can be accessed through the “View” option in the toolbar of the output window. Eviews offers coefficient tests, residual tests and stability tests.

Standard coefficient tests can be performed, after estimating an equation, by selecting “View”, “Coefficient tests”, “Wald – coefficient restrictions”. Specify the hypotheses to be tested in the window that appears. Figure 12 specifies homogeneity of the cost function as the hypothesis to be tested. Here, $c(3)$ is the third element of the coefficient vector, and so forth.

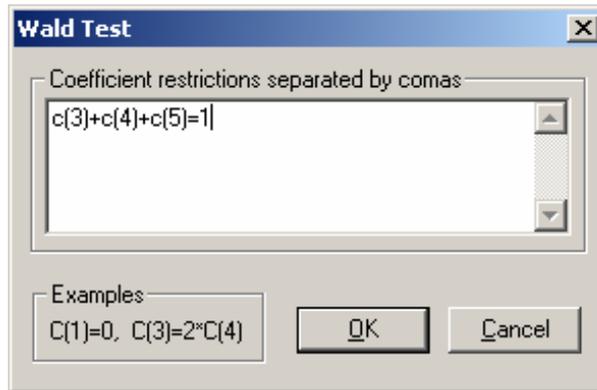


Figure 12: The window for specifying coefficient tests

Tests for detecting the presence of heteroskedasticity or serial correlation in the error term are also available, Click “View”, “Residual tests” and select the appropriate test.

Since the example of returns to scale uses cross-sectional data, the problem of serial correlation is unlikely. However, Figure 11 gave the impression that the variance of the error term might be heteroskedastic. Therefore, a White test (with cross terms) is conducted and the results are shown in Figure 13. As expected, the hypothesis of homoskedasticity is strongly rejected.

White Heteroskedasticity Test:				
F-statistic	9.540876	Prob. F(14,130)	0.000000	
Obs*R-squared	73.48261	Prob. Chi-Square(14)	0.000000	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 09/15/05 Time: 11:35				
Sample: 1 145				
Included observations: 145				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-55.41068	55.72120	-0.994427	0.3219
LOG(OUTPUT)	-1.183367	0.662626	-1.785874	0.0765
(LOG(OUTPUT))^2	0.032865	0.005261	6.246336	0.0000
(LOG(OUTPUT))*(LOG(WAGE))	0.060321	0.139105	0.433641	0.6653
(LOG(OUTPUT))*(LOG(RENT))	0.229076	0.123661	1.852446	0.0662
(LOG(OUTPUT))*(LOG(FUEL))	-0.157481	0.046409	-3.393375	0.0009
LOG(WAGE)	11.39492	11.22574	1.015071	0.3120
(LOG(WAGE))^2	-1.061825	1.849206	-0.574206	0.5668

Figure 13: White’s test for heteroskedasticity

7. Some final remarks

The “Quick” button in the main menu provides a quicker way to generate new series, estimate equations, graph data, and so on.

As an alternative to using the EViews menus, you can directly enter EViews **commands** in the command window, which is the white area just below the main menu. For example,

```
ls log(total_cost) c log(output) log(wage) log(rent) log(fuel)
```

estimates (by LS) the same equation as above. Using the command window has the advantage that old commands are re-executed upon modification. See the Help function for the syntax of commands.

For comments or remarks on this introduction, please contact Koen.Jochmans@econ.kuleuven.be.