Computer Handout 3: Estimating a Regression Equation

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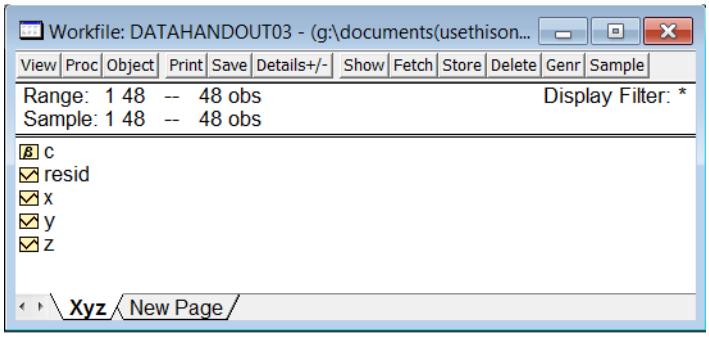
Econ 3342

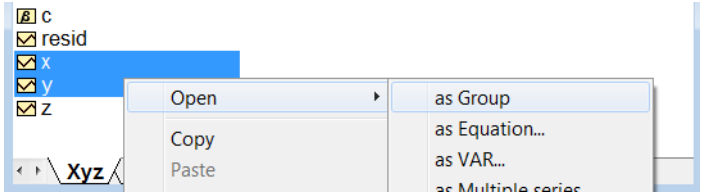
This Computed Handout 3 will cover the following points:

1) Scatterplots.
2) Linear regressions.

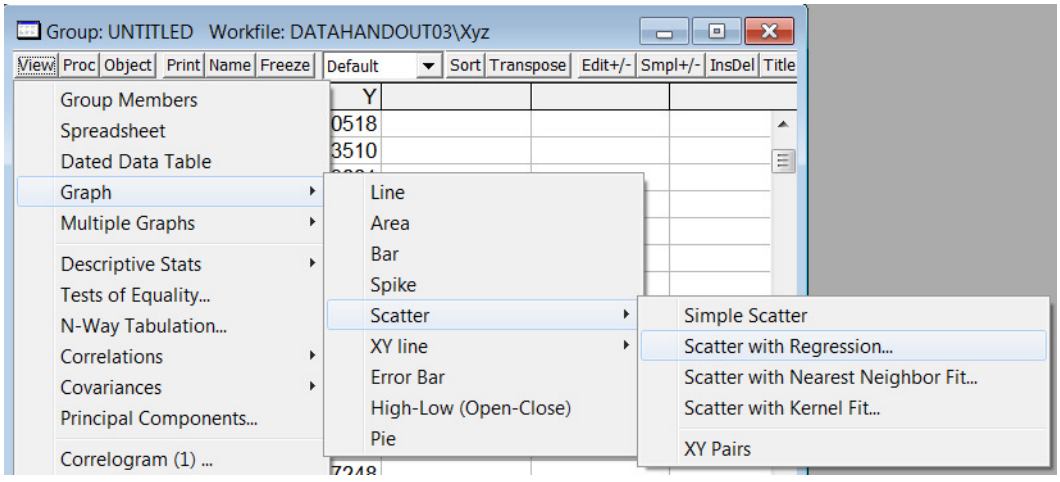
We will be using the data set Handout03 from the class website. The data set is already formatted for EViews (or gretl) and contains three variables; x, y and z:



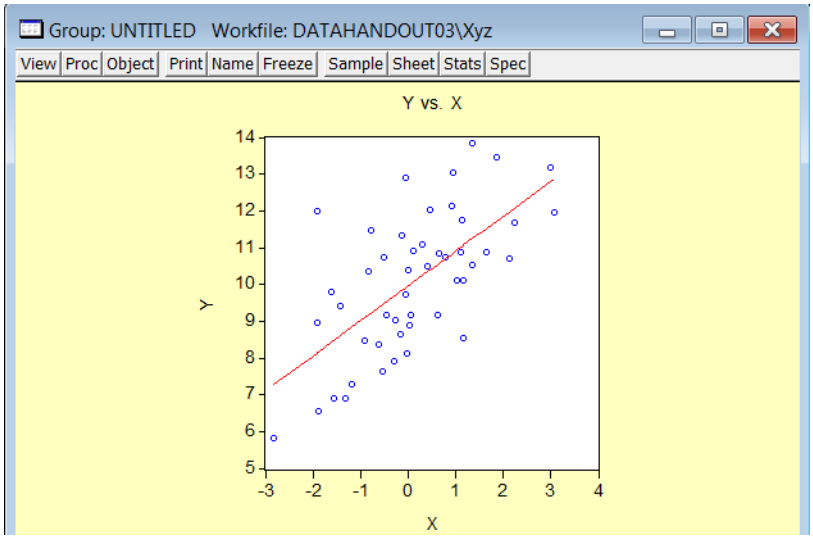
Open variables x and y as a group:



Then select "Graph," "Scatter," and then "Scatter with Regression."



and select the default options to obtain:



This is the same as Figure 2.2 in your textbook.

How is the linear regression line obtained? This is done easily by typing the following command: "LS Y C X Z." This is basically telling EViews to run a linear regression using Leas Squares (LS) with Y as the dependent variable and on a constant C and on variables X and Z:

EViews

File Edit Object View Proc Quick Options Window Help

ls y c x z

Equation: UNTITLED Workfile: DATAHANDOUT03\Xyz

View Proc Object Print Name Freeze Estimate Forecast Stats Resids

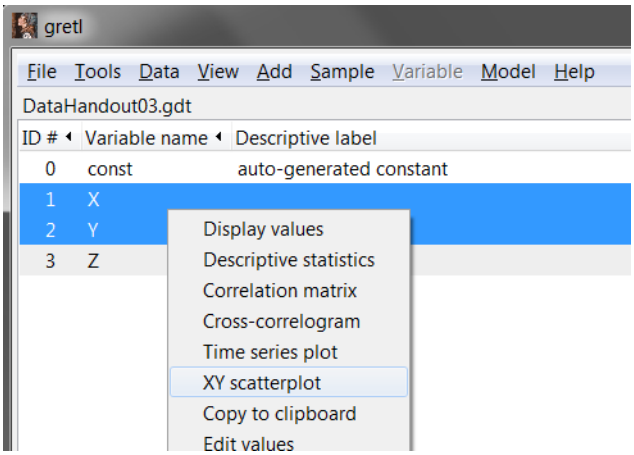
Dependent Variable: Y
Method: Least Squares
Date: 09/15/10 Time: 01:55
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.884732	0.190297	51.94359	0.0000
X	1.073140	0.150341	7.138031	0.0000
Z	-0.638011	0.172499	-3.698642	0.0006

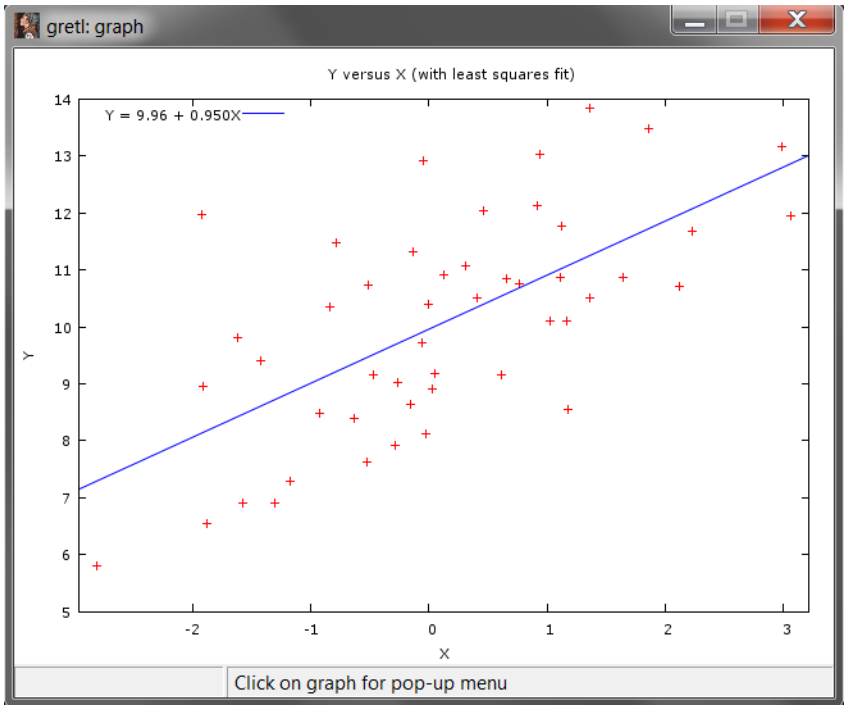
R-squared	0.552928	Mean dependent var	10.08241
Adjusted R-squared	0.533059	S.D. dependent var	1.908842
S.E. of regression	1.304371	Akaike info criterion	3.429780
Sum squared resid	76.56223	Schwarz criterion	3.546730
Log likelihood	-79.31472	F-statistic	27.82752
Durbin-Watson stat	1.506278	Prob(F-statistic)	0.000000

Notice that this is the same table as Table 2.1 from your textbook.

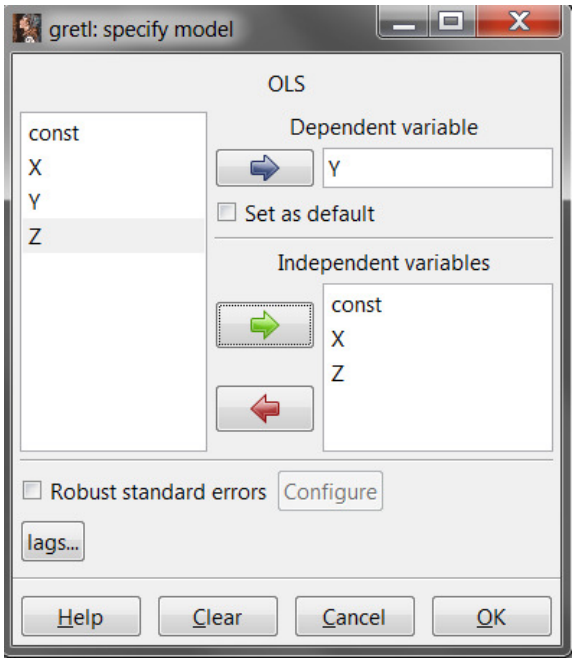
You can do the same in gretl by selecting both series, then RHS button on the mouse and finally "XY scatterplot."



To obtain:



The linear regression model can be estimated by selecting "Model," then "Ordinary Least Squares." Pick the following options in the next screen:



Regression output: