SILESIAN UNIVERSITY
SCHOOL OF BUSINESS ADMINISTRATION IN KARVINA

Statistical Methods for Economists – Week 3

(Questions and Tasks)

The topic: ***Regression Analysis***

1.) What is the aim of the regression analysis?

2.) Explain what kind of data we use in linear regression (qualitative, quantitative, ordinal, linguistic…), what is a dependent variable and what an independent variable(s).

3.) Write down a formula for linear regression (both for one and more independent variables). How do we call coefficients belonging to independent variables?

4.) What expresses the epsilon term?

5.) What is Pearson's correlation coefficient R?

6.) Consider the data in the table below and use them for a linear regression (you can use Excel or Gretl) to find out how spending on vacations depends on income.

a) What is the formula (equation) of linear regression?.....

b) What is a coefficient of determination R^2? Find R^2 in this example:……

c) Find Pearson's correlation coefficient R:..,,,,,,,,,,..

d) Show the linear regression in a graph (copy-paste from Excel)

e) In Excel click on "Data", then on "Analysis of data", then select "Regression". Excel provides an output in a form of three tables. Learn what information is provided in each table, and find: i) is the model (as a whole) statistically significant? ii) are both regression coefficients statistically significant?

Monthly income (x), Euros	Vacation spending (y) Euros
9500	950
6420	770
4300	400
3800	410
7100	550
8500	750
9200	890