Seminar 1. Work with EViews

Task 1. Create new workfile pq_curve.wf1 and 2 objects (p and q), using the following data

P	6	5	4.5	4.4	3	4.8	6	5.8	6.2	6.1	4.5
Q	78	70	69	63	160	58	74	64	72	79	83

Check data for stationarity. Build graph of variable Q. Try to estimate regression Q of price.

Task 2. Using file macromod.wf1 define and save in appropriate objects:
• Monetization level (ratio monetary base to GDP);
• Ratio of investments in GDP;
• Marginal rate of consumption;
• The increase in GDP;
• Ratio of exports in GDP;
• Inflation ratio.
Build graphs of all parameters found. Define if these parameters are stationary. Find the necessary order of integration for these series. Calculate stationary series.

Task 3. Using file macromod.wf1 define the best model for GDP (y). Test your regression for redundant and omitted variables, provide correct functional form for your model. Compare results with Step-wise procedure.

Task 4. Cobb-Douglas function
File: cobb.xls
1. Create workfile cobb.wf1 and import data from cobb.xls. Log all variables.
2. Estimate Cobb-Douglas function. Check it for all known econometric tests.
3. Calculate necessary elasticity coefficients. Would you recommend expanding this economy?

Task 5. Population
The dynamics of the USA population is given in the table

Year	Data
1790	3,9
1800	5,3
1810	7,2
1820	9,6
1830	12,9
1840	17,1
1850	23,2
1860	31,4
1870	39,8
1880	50,1

Year	Data
1890	62,9
1900	76,0
1910	91,0
1920	105,7
1930	122,8
1940	131,7
1950	150,7
1960	179,3
1970	203,3
1980	226,3
1990	248,7
2000	281,4

1. Import data to EViews. Build necessary graphs.
2. Develop an appropriate non-linear trend model.
3. Test model for significance, coefficients stability, heteroscedasticity, autocorrelation, multicollinearity etc.
4. Make forecasts for the next 30 years. Compare forecast for 2010 with real value.
5. Compare forecast with the linear trend model.
6. Test residuals for normality in both cases.
7. Adjust sample for 1790:1970. Repeat steps 1-3. Is the model stable?

Task 6. U.S. Investment Data
File: macro.txt
- Year = Date,
- GNP = Nominal GNP,
- Invest = Nominal Investment,
- CPI = Consumer price index,
- Interest = Interest rate.
1. On the basis of 15 yearly observations (1968-1982) build the best non-linear regression that can satisfy all econometric tests.

Task 7. Purchasing parity
File: cpi.xls
Test if there is a purchasing parity between Japan and USA, analyzing the model
$$r_t = \alpha + \beta\left(p_t - p_t^*\right) + \varepsilon_t \ ,$$
with
- r – natural logarithm of nominal exchange rate,
- p- natural logarithm of cpi in Japan
- p* - natural logarithm of cpi in USA.

1. Estimate the model

2. Build the graph of the model, analyse the results
3. Check the model with all possible econometric tests.

Task 8. GE returns
File: gereturns.txt
    File consists monthly log returns of GE stock.
1. Try to consider non-linear trend with seasonal component.
2. Consider different growth trends.
3. Test all the econometric criteria.

Task 9. Consider data representing GDP, monetary base, investment, consumption, export, import and government spending in the country. Build graphs of all parameters to formulate hypothesis about their interrelation. Check data for stationarity. Propose necessary data transformation.
1. Lithuania
2. Gambia
3. Kazakhstan
4. Latvia
5. Poland