

Lab 2 – Plots

Ex 1. Line plots

1.1. File: *Wages.sta*

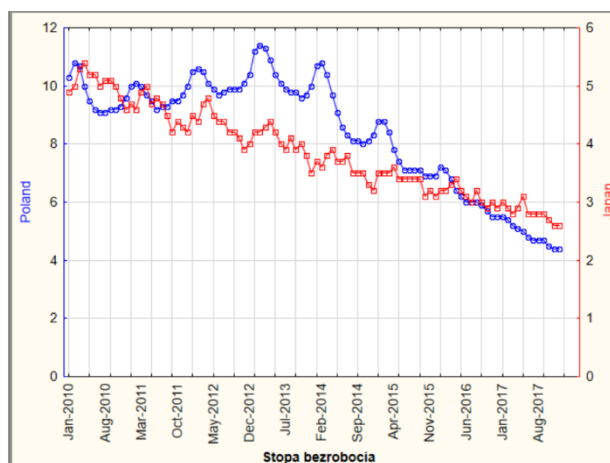
The aim of the task is to create a single line plot and properly format it for wages in industry. To do this, you should:

1. Add a new variable Date and use it to create a date variable based on the variables “Year” and “Month”:
Data / Date and Time / Create Date from Variable.
2. Change the display format to MM-YYYY.
3. Using the command Data / Names, assign the case names based on the values of the newly created Date variable.
4. Create a line plot for the variable Industry and apply appropriate formatting (format and chart settings can be modified by double-clicking the selected chart element with the left mouse button):
 - a. Change the chart title to: “Average wage in industry”
 - b. The dates on the X-axis should be displayed perpendicular to the chart and shown with a display frequency of 6 (Axis / Scale Values / Skip Values / Show every...)
 - c. The Y-axis should start at 0 (Axis / Scale / Show from zero)
5. Change the X-axis labels from date to Year (Line Chart / Options 1 / Labeling Options / From variable – Year), so that the years are displayed perpendicular to the chart with a frequency of every 12.

1.2. File: *Unemployment rate.xls*

The aim of the task is to create a multiple line chart (double Y-axis) and properly format it for the unemployment rate in Poland and Japan. To do this, you should:

- a. In the **Date** column, replace “M” with “-” and replace “:” with a blank space (i.e., an empty field).
- b. Select the entire worksheet and copy it, including the headers, into the Statistica program.
- c. Change the date display format to **MM-YYYY**.
- d. Save the file as “**Unemployment rate.sta**”.
- e. Create a line chart with a **double Y-axis**, presenting the unemployment rates for Poland and Japan.
- f. Using selection conditions and previously learned options, limit the range of data displayed in the chart to the period from 2010 onwards.
To do this, extract the year from the date variable and in the selection conditions include the condition: **(year > 2009)**.
- g. Add the date values to the X-axis using:
Chart editing window / Options 1 / Data options / Take from variable / Date.
- h. The values displayed on the X-axis should be positioned perpendicular to the chart.
- i. Change the chart title to “**Unemployment Rate**” and move it to the bottom of the chart, centered, in a horizontal layout.
- j. The Y-axis scale should start at 0.



Ex 2. Scatter plot. File: Salaries.sta

On the **scatter plot**, present the relationship between **age** and **gross salary**.

Indicate which variable is the dependent variable (Y) and which is the independent variable (X).

Determine the equation describing the relationship between X and Y and provide its interpretation.

Ex 3. Histogram. Salaries.sta

Present the distribution of respondents' **age** in the form of a **histogram**.

Based on the chart, answer the question whether it can be concluded that the variable *age* follows a normal distribution? Justify your answer.