

Laboratory 3

Exercise 1 Download data file (dataLab3).

- Using the whole sample, estimate the Factor model. Use information criteria to decide on the number of factors. What share of the data variability is explained by factors?
- Use the first 20 columns to estimate factors and to compute information criteria. Compare the results with the first point and comment.
- Use the first 20 rows of the data to estimate the factors and to compute the information criteria. Compare the results with the first point and comment.

Exercise 2 Download data file (RB). The data presents electricity prices from the balancing market. Each row describes the day, whereas the column describes the hour.

- Transform the data into logarithms and remove the mean (from each column).
- Estimate the factor model, which explains at least 80% of panel variability.
- Compute the information criteria, setting $k_{max} = 8$. Which number of factors do they suggest?
- Plot the loadings of the first two factors (the factors and loadings could be multiplied by -1 without change of the results - adjust the sign in such a way that value of the loading for the hour 17 is positive). Use the loadings to interpret the factors?