



NLB: DATA SCIENTIST

RISK SECTOR



1. GENERAL DIRECTION

- Use Quarto as your main tool for reporting. You can use Python or R to manipulate the data.
- Identify important connections between variables and understand how they affect the target variable.
- Use different visualization tools such as graphs, charts, and tables to present your findings effectively.
- Tell a compelling story with your analysis. Provide context and insights into the data patterns to make your findings more meaningful.
- Please put effort into the design of the report.
Hint: maybe you can use a theme 😊
- Don't forget to use **embed-resources: true** in Quarto specification, so we would see you nicely design report.
- Don't worry if you don't complete all subtasks. Still try your best. We want to see your effort and style of thinking. Good luck! 🍀
- **Send us rendered .html report as well as the .qmd file.**

2. TIME SERIES MODELLING

Non-Performing loans (NPL) is one the most important indicators in bank. It refers to a loan where the borrower has stopped making payments for an extended period, typically defined as 90 days or more past due. In following exercise, you will try to analysis. In general, we can say that in good economic cycle NPL is small and vice versa.

Data: [npl_bank.xlsx](#)

Your task involves analysing the relationship between NPL and macroeconomic variables. Here's a guideline for the exercise:

- Go on Eurostat and find some macroeconomic variables for Slovenia
 - *Explore Eurostat to pinpoint relevant macroeconomic variables for Slovenia. Pay careful attention to the timestamp of NPL data. Bonus: Leverage APIs for efficient data retrieval.*
- Visualize data and prepare basic statistics:
- Prepare time series model
 - *You can use whatever technique you want. Don't forget on model assumptions.*
- Interpret the model's output
 - *When selecting a model, review theoretical economic assumptions.*
- Make predictions, with your model.
 - *reconsider about prediction of macroeconomic variables*

3. STRATEGIC RISK

Banks face many intangible hazards that are difficult to calculate. In addition to the perhaps more common type of risks banks also face risk resulting from changes in strategic decisions and business environment (e.g. new competitors, rival technologies, changing conditions of demand etc.). This type of risk is usually termed as strategic risk affecting a bank's profitability, financial strength, and commercial success. The impact of risk on profit may be insignificant in the short term. Still, it may become highly significant in the medium and long term, with the potential to cause substantial financial losses and impair bank stability. Since this risk is associated with future profitability our input data is the banks' past performance.

Article: [Strategic Risk, Banks, and Basel III: Estimating Economic Capital Requirements by Arun Chockalingam, Shaunak Dabadghao, Rene Soetekouw :: SSRN](#)

Your task involves analysing the article and try to find solution to estimate strategic risk for NLB Group from publicly available data.

- carefully read the article and try to prepare methodology/model to estimate strategic risk for NLB Group based on this article