Financial Data Analysis
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Student Portfolios for 2024-25

Grading of this course is based on student portfolios that document the achievements of individual students. A student portfolio is a booklet in the following form:

- PDF, format A4 landscape
- 15-25 pages, excluding cover and references
- Max size for upload is 20MB
    - If your file is too large, use a service like https://smallpdf.com/compress-pdf
- **You may use any software/tool.** You may also improve the visualizations you have created with Python or other programs using any additional software (Adobe Illustrator, Inkscape) – except for the visualization created with ChatGPT/Microsoft Copilot.

The PDF must contain

- Title page
- Your selected data visualizations **in the order specified** under "visualization tasks"
  Note: Decide what to include. One topic may correspond to more or less than 1 page. The exact contents and the weighting of subjects is up to you, as long as you fulfill all requirements.
- A reference page (last page), containing
    - Sources for all data sets
    - Software used that was NOT part of the course, e.g. additional Python packages, any online service, additional programs, other programming languages.
    - Sources for third party plots (i.e. the "good" and "bad" examples)
- Beyond annotations of your visualizations, text is only necessary if required in a task

Submission and Deadline

- See iCorsi

Grading Metric

- Appropriateness of chosen visualization, including statistical and economic correctness
- Level of detail in implementing the visualization
- Conformity to the rules of data visualization and design
- Relevance / story
- Complexity + difficulty + use of own resources
- Consistency + breadth of the entire portfolio

These criteria are presented in decreasing order of importance. Graphical appeal cannot, for example, compensate choosing the wrong type of graph.

Use of Generative AI

Use of Generative AI is permitted **to create graphs**. It is not permitted for writing the short texts. Disclose (in an appendix) the use of generative AI for each graph, including the platform.

Individual work

Work individually.

Visualization tasks
The following tasks should, as a minimum, be fulfilled in your portfolio. You may add additional visualizations at the end up to the maximum number of pages (see #14).
You should fulfill each task with at least one visualization and present them **in the order below**.

1. Find a bad and/or manipulative visualization.
   Write a 100-150 word critique of the visualization.
2. Create an improved version of the “bad/manipulative” visualization.
3. Find a particularly good visualization and write a 100-150 word critique of it.
4. Create a viz about climate change for use in social media and write a hypothetical LinkedIn post to accompany this viz.
5. Create a black-and-white visualization (no grey levels)
6. Create a visualization that uses color as an important aesthetics
7. Create a visualization that rigorously maximizes Tufte’s "data-ink ratio" (google it).
8. Create a visualization that is none of the following: map, bar chart, scatter plot, pie chart, doughnut chart, line chart, box plot, density plot, histogram
9. Create one visualization by hand. Choose plain paper or graph paper and create your viz accordingly. Scan your viz using USI photocopiers or make a really good foto of it.
10. Create one visualization with ChatGPT Pro / Microsoft Copilot (or any similar tool). Include the visualization as you download it from the AI assistant without any further processing / improving it. Document your conversation (screenshots!) in the appendix.
11. Create one data map
12. Create one interactive visualization
    - Document interactive visualizations using screenshot(s)
    - Deploy interactive visualization on a publicly accessible URL. The visualization must be accessible using only a web browser without downloading or installing anything.
    - Do not forget to mention the URL!
13. Document the creation process of one of your visualizations in the portfolio from idea and (hand) sketch to several versions and the final version (add up to 150 words explaining the process if you want)
14. Optional: Additional visualizations created by you.
15. Document (using as many words as you require) your favorite tools for data viz.
    These can be: Python/R packages, other software programs, web sites, cheat sheets, books, data sources, news organizations with good/bad data visualizations, blogs, podcasts, other sources of inspiration.
16. Reference page: sources for all data used, sources for “good” and “bad” visualizations, all tools used, disclosure of use of generative AI for each individual graph
17. Appendix: documentation (screenshots) of your conversation with the AI.

Number 12 has to be interactive, all others can be static or interactive at your choice.