

M2 Master in Economics of Global Risks

Empirical Project 2024-2025

Purpose

In the Empirical Project (which counts for 4 ECTS), students will carry out an independent and original research project based on data and econometric tools. It is in line with the training-by-research and problem-based learning approach that are core elements of TSE's teaching philosophy and curriculum. The purpose of the Empirical Project is to apply the theoretical and methodological toolbox acquired during the Master's program at TSE in a concrete project and to deepen and complete the knowledge acquisition and learning in a hands-on, practical, and professionalizing project. The task includes all stages of an original research project: defining the project and its research questions, absorbing the relevant applied and methodological literature and defining the original contribution, locating data sources and managing the data sets, carrying out tests, and critically evaluating the results and their limitations, presentation and write-up. At the same time, the Empirical Project is a reference document that will be useful during the job search and transition to professional employment. This is why a complete and polished written document is essential, the final project report. Replication of an existing paper can be part of the project but the project should go beyond replication and develop its own, applied contribution.

General Guidelines

The project will straddle both semesters and the final product as well as presentation and defense are due in the last week of March. There will be 3 groups of 3 or 4 students this year, and two project supervisors: Louis Olive and Ulrich Hege.

Please form groups on your own and inform Ulrich Hege by **14 October** of the composition of your group. In parallel, please think about areas of interest, or ideas for the project (this will also greatly help in constituting the groups). We will then sort out the interests of each group and find the best matches between groups and supervisors.

The project straddles both semesters, but work should start as soon as possible. The first step is defining the topic together with the supervisor. Finding an interesting, well-motivated topic and research question, locating data, developing a feasible research strategy (within the given time frame and available time) are the first step that may take a few weeks.

Timeline

The timeline of the Empirical Project is as follows:

15 November 2024: project outline

Hand in a one-page short project description that should outline:

- the research question you plan to investigate, the motivation behind this question,
- the existing evidence in the relevant academic literature and your contribution,
- an overview of the data sources and their shared by the professor, with description of the possible shortcomings and limitations.

10 January 2025: interim report

The interim report can be in the form of slides or a note and should contain:

- a detailed description of the data incl. sources,
- a presentation of the empirical strategy, baseline econometric specification and a short description of potential econometric issues,
- some descriptive statistics and first preliminary results.

20 March 2025: final project report and complete documentation

The final project report contains:

- an introduction that discusses motivation and research questions,
- discussion of the relevant literature and a positioning of the original contribution relative to this literature,
- if possible, a section on hypothesis development, based on academic literature,
- a section that describes the empirical strategy, econometric methods, and discussion of their choice. The description must be sufficiently complete that the text can serve as a recipe for replication of your study,
- a section that discusses the main results,
- a section that critically reflects on limitations incl. identification and discusses possible extensions,
- a conclusion
- complete tables with some descriptive statistics, regressions results, possibly figures, each with a caption that aims to make it self-explanatory.

The complete data files and regression code should be submitted with the final project report.

There is no set minimum and maximum length for the final report. Be clear, concise, and complete; explain the methodology and literature sufficiently well to convey to the reader that you have fully grasped it (which is typically a bit more extensive than in academic papers that adhere to space constraints). Be brief; there is no premium for a long report (redundancies and lengthy descriptions are not welcome). To include everything, the text body (excl. tables and figures) will typically be 20 pages long or more. Be generous with Appendices (they may contain tables, robustness checks, and more detailed descriptions of data).

Last week of March: Joint session with presentation and defense (25 min. presentation, 20 min. discussion per group).

Scope of Topics

The topic should be chosen in the area of global or macro risks in a broad sense, but it can also explore how such risks affect individual organizations or decision-makers.

Access to data and feasibility are important considerations that should guide the choice of topics. The supervisor will have ideas of his own and guide students in the definition of a feasible project and help in locating data sources and literature.

Ulrich Hege is interested in topics spanning climate change and energy transition (incl. mitigation, adaptation and transition risks), sustainable finance, biodiversity, and pandemics (Covid).

Louis Olive has a keen interest in areas such as Asset Liability Management, with a focus on optimizing financial strategies and more generally in managing Market and Credit risks through the devising and application of rigorous risk control measures. More recently he developed an interest in Climate Risk within the realm of central banking.

These areas of interest are non-exhaustive.