

## Policy evaluation lab (60h – 9CFU)

The course offers students an introduction to some of the most important quantitative methods used in economic and policy analysis. Designed with an applied focus, it is organized into two modules, each exploring a different set of concepts and techniques while emphasizing their practical use in real-world contexts.

### Module 1 - Counterfactual evaluation of public policies ex-post impact

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This module explores how to rigorously assess what public policies achieve once implemented. It equips students with the concepts and quantitative tools needed to understand whether policies work, for whom, and under what conditions. We begin with the role of **independent evaluation** in evidence-based policymaking, highlighting how monitoring, policy design, and data availability shape the credibility of assessments. We then address the central methodological challenge: identifying **causal impacts** in non-randomized contexts, where most policies operate. Students will engage with counterfactual methods—matching, difference-in-differences, regression discontinuity, synthetic control—and be introduced to more **advanced approaches, including machine learning techniques for causal inference and prediction**, increasingly relevant in applied policy research. The final part of the course turns theory into practice. Using **R Studio** and real datasets, students will run an evaluation themselves, developing both technical skills and critical judgment. This last part will require students using their own laptop and having R Studio. Special attention is given to **EU policies** and **environmental policies**, where rigorous evaluation is crucial to measure effectiveness and guide future action. By the end, students will understand not only the methods of policy impact assessment but also their political and practical relevance, gaining the ability to evaluate what works—and why—in public policy.

### Module 2 - Introduction to Computable General Equilibrium (CGE) Modeling

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The objective of this module is to engage participants in an active, team-based process of learning about **computable general equilibrium (CGE)** models and their use in applied economic policy analysis. The module emphasizes an intuitive and graphical treatment of economic theory in the CGE model, and provides structured experiences in manipulating and running the standard **GTAP Model** within the RunGTAP software environment.

Students will gain hands-on experience with a practical tool that is widely used in real-world policy analysis by organizations such as the **European Commission, IFPRI, USDA**, and others. They will learn how to build a baseline scenario, which reflects the current economic

situation, and then simulate different policy scenarios—specifically, for this year, focusing on the long-term negotiations between the US and the EU over announced tariffs (or trade tensions). Additionally, students will explore potential effects of these policies within the context of **climate negotiations**, understanding how trade policies can intersect with **environmental** and **climate goals**.

By the end of the module, students will be able to produce an **impact assessment report** - an essential skill used by international organizations and policymakers. This includes:

- Constructing a coherent baseline aligned with real-world data;
- Designing and setting up different policy scenarios;
- Understanding and interpreting the results;
- Presenting their findings clearly to policymakers, highlighting potential benefits, drawbacks, and implications of each scenario.

This approach will give students a comprehensive understanding of how to evaluate the economic effects of policy changes and communicate their insights effectively - key skills for careers in economic policy analysis.

### Assessment

Assessment will be based on an oral exam. Students who attend classes regularly may replace the final exam with mid-term examinations.

### Teaching material

All lecture slides and additional teaching materials will be available for download on the course website.

### Module 1

#### Course general schedule

Impact assessment of public policies

Theoretical framework of counterfactual evaluation

Models: Matching, Difference-in-differences, Regression discontinuity, Synthetic control, introduction to Machine Learning.

#### Textbooks required

- Angrist, J. and Pischke, J.S. (2009): Mostly harmless econometrics, Princeton University Press, NJ

#### Additional readings

- Blundell, R. and Costa-Dias, M. (2009): Alternative Approaches to Evaluation in Empirical Microeconomics, Journal of Human Resources, 44(3).

## Module 2

### Course general schedule

- Build a reference baseline scenario: Students will collectively construct a baseline scenario that accurately reflects the current economic context, (introduction to the characteristics and theory of CGE models).
- Simulate policy scenarios: Students will be divided into groups, with each group tasked with simulating a distinct policy scenario (e.g., alternative trade agreements or tariff policies) (practical application and deepening CGE comprehension through hands-on learning-by-doing).
- Analyze impacts: Each group will assess the potential economic effects, benefits, and challenges of their chosen scenario (developing critical skills for future careers in economics, policy, or international trade).

### Textbooks required

Burfisher, M. (2021). Introduction to Computable General Equilibrium Models. Cambridge: Cambridge University Press.

### Additional readings

Corong, E., Hertel, T., McDougall, R., Tsigas, M., van der Mensbrugghe, D. (2017). The Standard GTAP Model, Version 7, Journal of Global Economic Analysis, 2(1), 1-119 (<https://www.jgea.org/ojs/index.php/jgea/article/view/47/30>).