

Econometric analysis of conflict data with R

Empirical Research Seminar in Institutional Economics – Winter 2023/2024

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General Information

6 ECTS (M.Sc.)/4 ECTS (M.Ed.) Seminar with software tutorial, max. 16 participants

- M.Sc. Economics (*Economics & Politics*)
- M.Sc. Volkswirtschaftslehre (*Constitutional Economics & Competition Policy; International & Development Economics; Empirical Economics*)
- M.Ed. Wirtschaftswissenschaften (*Internationale Theorie & Empirie*)

In this course, students will learn how to handle, visualize and analyze conflict data, and how to produce high-quality, reproducible documents to effectively communicate empirical results. Previous experience with statistical software or advanced econometrics is not required.

Following an introduction to “literate programming” with R and Quarto, we will focus on how to construct meaningful measures from available data and discuss potential sources of bias across data sources. For the first assignment, each student will focus on a different data set (covering a particular type of conflict/a geographic region) and prepare a short report.

In the second part, we will focus on statistical methods and their application to a widely discussed question: Does climate change cause conflict? What is the role of economic conditions and political institutions in this complex relationship? All seminar participants will work with the data collected in the AfroGrid ([Schon & Koren, 2022](#)), but focus on different extensions (measures of climate change/regions) for the second take-home assignment. In the block seminar in January 2024, students present their findings (6 ECTS/M.Sc. only, no presentation required for 4 ECTS/M.Ed.).

! If you would like to participate, please write to valentin.klotzbuecher@econ.uni-freiburg.de with a recent transcript and a short paragraph on why you are interested in this seminar. The deadline for applications is October 15, 2023.

Software and introductory literature

- All software ([R](#), [Quarto](#) and [RStudio](#)) is openly available online
- Introduction to R and Quarto: Alexander ([2023](#))
- Econometrics references: Huntington-Klein ([2021](#)); Cunningham ([2021](#)); Lakens ([2022](#))
- Climate and conflict: Mach et al. ([2019](#)); Koubi ([2019](#)); Uexkull & Buhaug ([2021](#))
- Conflict data and causal identification: Miller et al. ([2022](#)); Dworschak ([2023](#))

Software tutorials: PC Pool 3 (Werthmannstr. 4), 10:00–14:00 s.t.:
30.10.2023, 06.11.2023, 04.12.2023, 11.12.2023

Block seminar: January 2024 (precise date and location TBC)

References

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- Cunningham, S. (2021). *Causal inference: The mixtape*. Yale university press. <https://mixtape.scunning.com/>
- Dworschak, C. (2023). Bias mitigation in empirical peace and conflict studies: A short primer on post-treatment variables. *Journal of Peace Research*. <https://doi.org/10.1177/00223433221145531>
- Huntington-Klein, N. (2021). *The effect: An introduction to research design and causality*. CRC Press. <https://theeffectbook.net/>
- Koubi, V. (2019). Climate change and conflict. *Annual Review of Political Science*, 22, 343–360. <https://doi.org/10.1146/annurev-polisci-050317-070830>
- Lakens, D. (2022). *Improving your statistical inferences*. https://lakens.github.io/statistical_inferences/
- Mach, K. J., Kraan, C. M., Adger, W. N., Buhaug, H., Burke, M., Fearon, J. D., Field, C. B., Hendrix, C. S., Maystadt, J.-F., O’Loughlin, J., et al. (2019). Climate as a risk factor for armed conflict. *Nature*, 571(7764), 193–197. <https://doi.org/10.1038/s41586-019-1300-6>
- Miller, E., Kishi, R., Raleigh, C., & Dowd, C. (2022). An agenda for addressing bias in conflict data. *Scientific Data*, 9(1), 593. <https://doi.org/10.1038/s41597-022-01705-8>
- Schon, J., & Koren, O. (2022). Introducing AfroGrid, a unified framework for environmental conflict research in Africa. *Scientific Data*, 9(1), 116. <https://doi.org/10.1038/s41597-022-01198-5>
- Uexkull, N. von, & Buhaug, H. (2021). Security implications of climate change: A decade of scientific progress. *Journal of Peace Research*, 58(1), 3–17. <https://doi.org/10.1177/0022343320984210>