Teaching Statement

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Teaching Philosophy and Experience

My approach to teaching is guided by the belief that students learn economics most effectively when they can connect theoretical concepts to real-world problems and discover for themselves how economic reasoning can help address them. I aim to provide students with a solid theoretical foundation while encouraging them to question assumptions, engage critically with evidence, and apply economic methods independently. In my experience, interactive learning and practical applications are particularly effective in achieving these goals, as well as in keeping students engaged in lectures, which is particularly important in an age of AI.

At the University of Basel, I have been involved in teaching *Fundamentals of Public Economics* (in German) at the Bachelor's level since 2022, serving as a teaching assistant or officially designated co-lecturer depending on the extent of my teaching responsibilities. While my contributions have varied across years, I have regularly taught lectures on externalities and public goods, climate change, and international climate cooperation. In the latter, I draw on my direct experience participating in UNFCCC negotiations to illustrate the coordination and free-riding problems associated with climate change as a global public good, as well as the institutional mechanisms designed to address them. This allows students to connect economic theory with the practical challenges of climate cooperation.

I regularly use interactive exercises to engage students and make abstract economic concepts more tangible. In an emissions trading simulation, students trade allowances under different scenarios, allowing them to experience how market outcomes emerge from individual decisions. I teach the associated lecture, guide students through the simulation, and have adapted the exercise over the years to improve its implementation, even though it was developed before my involvement in the course. Similarly, I conduct a survey on the Value of a Statistical Life (VSL), using students' own responses to illustrate how willingness to pay for mortality risk reductions informs economic valuation. Both exercises create opportunities for students to engage actively with the material before returning to the underlying theory. They consistently attract strong participation, and my experience grading examinations suggests that they help students understand the concepts involved.

Beyond delivering lectures and implementing interactive exercises, I have contributed to assessment design by proposing examination questions and developing exams jointly with my supervisor. I believe assessments should test not only students' understanding of economic models but also their ability to apply these models to unfamiliar problems. In Public Economics, this means combining questions on theoretical mechanisms with applications that require students to evaluate policy interventions and explain the economic reasoning behind their conclusions. My experience grading exams also provides feedback on which concepts students have understood and where further explanation may be needed.

My teaching has received consistently positive student feedback. In 2022, when I served as an official co-lecturer for *Fundamentals of Public Economics*, my evaluation scores ranged from 5.4 to 5.8 out of 6 for organization, clarity, and engagement (see below). My teaching experience and involvement in international climate negotiations also led to an invitation to lecture on the international political economy of energy and climate policy in another Bachelor's course at Basel.

Table 1: Student Teaching Evaluations – Fundamentals of Public Economics (2022)

Evaluation criterion	**Mean**	**Median**	**SD**	**N**
Clear course structure and objectives	5.4	5.5	0.7	34
Clear explanation of course content	5.4	5.0	0.7	34
Responsiveness to student questions	5.6	6.0	0.6	32
Engagement in teaching	5.8	6.0	0.4	33

Notes: Six-point Likert scale (1 = strongly disagree, 6 = strongly agree).
University of Basel, 2022. Results refer to Instructor B (Roman Eric Sieler).

Research-Based Learning and Supervision

An important part of my teaching philosophy is helping students develop the confidence and skills to conduct independent research. I have supervised 11 Bachelor's and Master's theses in public and environmental economics (seven Bachelor's and four Master's theses) and voluntarily contributed to seminars on scientific work, supporting students in developing their own empirical projects. I particularly enjoy this aspect of teaching, which motivated me to take on these additional seminar responsibilities beyond my contractual duties.

Where possible, I encourage students to investigate questions connected to my own research, sometimes providing access to datasets I have developed or used myself. This allows them to engage with questions relevant to ongoing scientific debates while gaining experience with real-world data and the empirical challenges they present. I believe that confronting students with the complexities of actual research, rather than exclusively relying on simplified exercises, is essential to developing their analytical skills and independent judgment, provided they receive appropriate guidance along the way.

My supervision approach is to first introduce students to the relevant field and literature, then encourage them to identify the empirical challenges and develop possible solutions themselves. Throughout the research process, students discuss successive drafts with me, allowing me to provide feedback on their research questions, methodological choices, and interpretation of results. Rather than prescribing an identification strategy or analytical approach from the outset, I guide them through the research process, offering advice at successive stages and intervening when necessary. I believe that working through these challenges independently is essential for developing analytical judgment and confidence in one's own research abilities.

My own research combines applied microeconometrics, remote sensing, and machine learning. I see considerable potential to integrate these methods into teaching and supervision, particularly in environmental and development economics, where unconventional data sources increasingly allow researchers to address previously difficult-to-measure economic questions. Advances in AI increasingly allow students to engage with more complex empirical methods and research designs, making ambitious, real-world research projects more accessible. I believe teaching should actively respond to these developments by encouraging students to use AI as a tool for more ambitious exploration and implementation, while ensuring that they retain a solid theoretical and methodological foundation. The objective should be to enable students to tackle more challenging questions without outsourcing the critical thinking needed to understand, evaluate, and defend their results.

Broader Educational Engagement

Beyond university teaching, I have gained extensive experience designing and delivering educational workshops through my involvement in international youth and climate organizations. This has included preparing young people from different countries to participate in UN climate negotiations, introducing them to the institutional framework of the UNFCCC and the political and economic challenges of international climate cooperation. Working with participants from diverse educational and cultural backgrounds has taught me the importance of adapting the complexity and presentation of material to the audience, while retaining the underlying analytical substance. I see this flexibility as equally valuable when teaching students with different levels of prior knowledge and methodological experience. I also regularly contribute to public discussions on climate policy and youth engagement, most recently at the European Commission's Education for Climate Day.

Future Teaching Interests and Contributions

My teaching experience provides a strong foundation for contributing to undergraduate courses in Public Economics, Environmental Economics, and related fields. Having contributed to teaching *Fundamentals of Public Economics* at the University of Basel for several years, including periods as an official co-lecturer, I would welcome the opportunity to take responsibility for a full course, building on my experience delivering lectures, developing assessments, and supervising students.

At the graduate level, I would be particularly interested in teaching Environmental and Resource Economics, Climate Economics, and topics connecting environmental change with economic development, inequality, and human welfare. My research on ecosystem degradation, climate policy, and the economic consequences of pollution would allow me to integrate current empirical research into these courses.

I would also welcome opportunities to teach applied empirical methods, particularly causal inference, remote sensing, and machine learning in economics. Students could work with real environmental and economic datasets, formulate research questions, develop empirical strategies, and critically evaluate their results. My aim would be to combine rigorous theoretical and methodological foundations with research-based learning, while preparing students to use emerging AI tools critically and responsibly.

More broadly, I would be enthusiastic about contributing to curriculum development and supervising undergraduate, Master's, and doctoral research. Teaching is a part of academic life that I genuinely enjoy, and I look forward to contributing to an engaging and collaborative learning environment.